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**SPRING VALLEY FORMERLY USED DEFENSE SITE PROJECT**  
**Community Meeting:**  
**REMEDIAL INVESTIGATION REPORT**

**Tuesday, May 12, 2015**  
**Vestry Room, Metropolitan Memorial United Methodist Church**  
**3401 Nebraska Avenue, NW**  
**Washington, DC**  
**6:30 – 8:30 PM**

- I. 6:30 – 7 PM: *Open House***
  
- II. 7 – 7:05 PM: *Welcome and Introductions***  
Dan Noble, USACE Project Manager
  
- III. 7:05 – 7:30 PM: *USACE Presentation***  
Review of the Site-Wide Remedial Investigation Conclusions  
Project-Wide Schedule
  
- IV. 7:30 – 8 PM: *Community Questions***
  
- V. 8 – 8:05 PM: *Closing Remarks***
  
- VI. 8:05 – 8:30 PM: *Adjourn to Individual Questions & Answers***

\*The Corps of Engineers will have a representative available all night to record comments as part of the comment period.

**U.S. Army Corps of Engineers  
Spring Valley Formerly Used Defense Site  
Metropolitan Memorial United Methodist Church  
Minutes of the May 12, 2015 Community Meeting**

| <b>ATTENDING PROJECT PERSONNEL</b>      |  |
|---|--|
| Dan Noble                               | Military Co-Chair/USACE, Spring Valley MMRP Manager            |
| Todd Beckwith                           | USACE, Spring Valley Project Manager                           |
| Alex Zahl                               | USACE, Spring Valley Technical Manager                         |
| Cliff Opdyke                            | USACE, Risk Assessor   |
| Andrea Takash                           | USACE, Corporate Communications Office                         |
| Steve Hirsh                             | EPA Region III   |
| James Sweeney                           | Agency Representative – District Department of the Environment |
| Tom Bachovchin                          | ERT, Project Manager   |
| Carrie Johnston                         | Spring Valley Community Outreach Program                       |
| Rebekah McCoy                           | ERT  |
| Lattie Smart                            | Spring Valley Community Outreach Program                       |
| Rebecca Yahiel                          | Spring Valley Community Outreach Program                       |
| <b>HANDOUTS FROM THE MEETING</b>        |  |
| I. Army Corps of Engineers Presentation |  |
| II. Spring Valley Project Timeline      |  |
| III. CERCLA Factsheet                   |  |
| IV. Remedial Investigation Factsheet    |  |
| V. April Corps <i>pondent</i>           |  |

## **AGENDA**

**Starting Time:** The May 12, 2015 Community meeting began at 6:30 PM.

### **I. Welcome and Introductions**

#### **A. Welcome**

**Dan Noble, USACE:** Welcome everyone, my name is Dan Noble, and I am the project manager for the United States Army Corps of Engineers (USACE) Baltimore District for the Spring Valley Formerly Used Defense Site (FUDS). This evening we are having our public meeting to go along with a public comment period, which we are halfway through, for our site-wide Remedial Investigation (RI) document. This evening, we wanted to have a chance to meet with the community, answer any questions you have, introduce some of the content that is in the report and explain the conclusions of the report. We want to spend most of the time listening to your concerns, taking your questions and offer clarifications if we can.

**D. Noble, USACE:** To get started I would like to make some introductions. First, we can go over the overall agenda. We had a half hour open house before this meeting and now we will be doing a brief presentation to kick off the more formal portion of the evening to present the conclusions of the RI report. We will try to give a look ahead for how we think the schedule of the project is shaping up. We will then spend the rest of the time taking questions. After we close the meeting, we will stay around for another open house format. Feel free to stay as long as you like.

#### **B. Introductions**

**D. Noble, USACE:** For introductions, I want to let you know who is here this evening from USACE and the regulatory agencies. I will start with the USACE employees and some of the USACE contractors who are here this evening. [D. Noble introduced all project personnel in attendance for USACE and from ERT, Inc. All USACE and contractor personnel are listed in the above table. ] **D. Noble:** Mr. Steve Hirsh from the United States Environmental Protection Agency (USEPA), Region III, who works out of Philadelphia. Steve has been doing regulatory oversight on the Spring Valley FUDS project for quite a while. Mr. Jim Sweeney from the District Department of the Environment (DDOE) is also performing regulatory oversight on our work.

## **II. Announcements**

**D. Noble, USACE:** As I mentioned, we are in the middle of a 45-day public comment period on the RI document. We released a public copy of the draft report on April 8, 2015. There were announcements in the Washington Post and the Northwest Current announcing the formal start of the public comment period, which will run until May 26, 2015. On the calendar, that is a little more than 45 days because we did not want the public comment period to end on a weekend or on a holiday. May 26<sup>th</sup> is the Tuesday after Memorial Day.

**D. Noble, USACE:** You can find the report at <http://www.nab.usace.army.mil/Home/SpringValley.aspx> or in the Information Repository at the Tenley-Friendship Branch Library. We have our entire Information Repository at that location, so there are a lot more materials there than just the RI report.

**D. Noble, USACE:** The public is welcome to submit comments to USACE on the draft RI report. This evening, you can turn in formal comments on the conclusions of the RI in two ways. In the back of the room, there is a table with a comment box with comment forms and pens. If you would like to take a few minutes this evening, jot a comment down, and put it into the box, that would be great. Additionally, Lattie Smart can take an oral comment from you. He will record exactly what your comment is and then transcribe it later. You can see Lattie and he has a setup in one of the rooms in the back where it will be quiet and can record what you have to say. You can tell us who you are, what your address is if you would like. You do not have to, you could just say: I am just a community member who is interested, and leave a comment. Anonymous comments are fine. If you do not want to submit comments to us this evening, you can send or email them to us at the addresses provided with attention to Brittany Bangert, who is not here this evening but works on the project. We ask that you get your comments postmarked by May 26<sup>th</sup> or sent via email by midnight on May 26<sup>th</sup>.

**Community Member 1:** Would late filed comments be accepted and reviewed.

**D. Noble, USACE:** Yes, as long as we have not completed the responsiveness summary and issued the final RI report. Generally, if you get it to us we will look at it, but we would like to gather the majority of them by a certain date so we can move on to the final portion of the report writing process.

## **III. USACE Presentation**

### **A. Site Overview**

**D. Noble, USACE:** Let me go through a few slides about the RI document. We brought a lot of slides with us tonight but most of them are back up slides to be used if we have questions where a map or other visual may be beneficial.

**D. Noble, USACE:** The first slide is of the Spring Valley project site. The site is 661 acres here in Northwest Washington D.C. The purple outline is the demarcation of the historic fence line of the American University Experiment Station (AUES), which was on the American University (AU) Campus during World War I (WWI). The larger area in blue is the area that was leased or controlled by the Army during WWI and used as a test area for activities that were going on at the experiment station. Also on the AU campus during WWI was a separate Army facility called Camp Leach, which was a training facility. Camp Leach is highlighted in yellow. Quite a few troops moved through Camp Leach during the WWI years to be trained for technical specialties and then were sent to the battlefields in Europe.

## **B. The CERCLA Process**

**D. Noble, USACE:** The process we are in is governed by federal regulations. These are steps we are required to take; we have to write an RI report. You can see that there are nine steps that the regulatory process is broken down into. Preliminary assessment, Site inspection, and RI phase are typically the longest phases of a project and certainly for us that is true. We have been in the RI phase for a long time but the production of the RI report marks the end of that phase. We then move to a Feasibility Study (FS) phase, where the RI report identifies what the issues are and the FS looks at different ways to address the issue. The Proposed Plan (PP) selects one of the alternatives as how you will address the issue. The PP also has a public comment period associated with it so that the community can comment on the preferred plan. Then we sign the Decision Document (DD), which grants the authority to proceed with the preferred method of Remedial Action. Then we move to the Remedial Design/Remedial Action phase where we implement the actions spelled out in the DD to reach site closure. Site closure sometimes means active phases of the project are done, yet there could still be some issues where you continue to do long term monitoring or you revisit issues as time passes to make sure that the decisions you made in the past were good decisions.

**D. Noble, USACE:** CERCLA is the Comprehensive Environmental Response, Compensation, and Liability Act, sometimes referred to as ‘Superfund.’ It is the federal regulation that we are working under.

## **Spring Valley FUDS Timeline**

**D. Noble, USACE:** So, what is the Spring Valley RI report about? It is about the activities that the Army Corps has undertaken since 1993 when we first made the discovery of buried munitions at 52<sup>nd</sup> Court. The timeline is our attempt to put the entire project on one page. You can see that there is a lot on there and the RI report has to strike a balance between giving you enough detail to understand what has happened. Obviously, we can’t give you every single detail because it would be an unwieldy impossible report to read. There are a lot of references in the RI report that refer to other documents that have been produced over the life of the project.

**D. Noble, USACE:** What were the conclusions of the RI report? Basically, there are two major conclusions. The first conclusion is that certain areas will proceed to the FS due to potential concerns with residual chemical risks in soil identified in the formal process called the Human Health Risk Assessment. These certain areas include one area identified on the southern portion of AU

campus and another area that we call the Spaulding and Captain Rankin Area (SCRA) which is a single large private property in the neighborhood.

**D. Noble, USACE:** The second major conclusion is that certain areas will proceed to the FS due to potential concerns with potential hazards identified with munitions that come from the activity during WWI. These have to do with the Function Test Range, a couple of static test fire areas, Area of Interest 13, and a small area immediately adjacent to the Public Safety Building on the AU campus.

**D. Noble, USACE:** For the purposes of the RI and the purposes of speaking tonight, when I talk about potential ‘risks’ I am referring to residual chemicals that may have been left behind and represent potential risk. When I talk about potential ‘hazards,’ that refers to munitions and the presence of the munitions themselves that could represent a hazard. Hazard represents munitions, risks represents chemical contamination concerns. I also want to point out that the current Site-Wide RI report deals with site-wide soils and it does not address, in its current form, anything to do with issues that might be left behind in the groundwater or the water that underlies the site in the geologic formations under the site. That is another issue that we are required to look at and we are looking at that. We are going to produce another RI report that just addresses the potential groundwater issues.

#### **Areas for Evaluation in the Feasibility Study**

**D. Noble, USACE:** The map titled “Areas for Evaluation in the Feasibility Study” captures what these conclusions say. The crescent shaped area highlighted in yellow are the areas where we feel there might be potential concerns related to risk with chemical contamination left in the soil. Adjacent to the campus is a large private property that is not part of AU: this is the SCRA. However, when the experiment station was operational, it was included within the historic fence line of the experiment station. The areas in blue are where we are concerned about potential hazards that might remain from munition items left behind. The number of private properties in the blue area is a little less than 100. At the last meeting where I spoke about this back in March, I mentioned that during the RI we took a close look at about 50 of those 100 properties. As a result, we did 2700 individual digs on those 50 properties to look for what we suspected could be buried munitions. Out of those 2700 digs, 55 yielded a metallic item that came from a munition, not necessarily an entire munitions itself but a metallic piece that came from a munition. Out of those 55 finds, only four items had a type of low-level hazard. It is important to consider those numbers because we want to try to put the amount of the hazard in perspective. The idea is that we are very conservative when we discuss hazard. We take a very long view and a very low hazard over a very long period of time could lead you to conclude that the hazard is unacceptable. It does not mean that there is an imminently dangerous situation. We do not think that such a situation exists at Spring Valley If we felt that there was an imminently dangerous situation, then we would be out there right now doing something about it. This is a very conservative and long-term view of what the unacceptable hazard might be.

#### **Tentative Schedule for Site-Wide RI Report**

**D. Noble, USACE:** We started off with our current public comment period that we will be wrapping up on May 26<sup>th</sup>. This evening (May 12<sup>th</sup>) we are having a community meeting. Immediately after May 26<sup>th</sup> we will finalize the RI report and proceed to the FS. We hope to have the FS written and reviewed by S. Hirsh (USEPA, Region III), and J. Sweeney (DDOE), and then release by late fall 2015. This winter we would be engaged in writing the PP. The FS will analyze the alternatives that could be used to address the issues and it will recommend an alternative. The preferred alternative will be described more in the PP, along with brief descriptions of the other alternatives that we considered and explain why we selected the preferred alternative. A formal public comment period

on the PP is required by the regulations. Hopefully by next summer we will prepare and sign a DD and have the appropriate authority within the Department of Defense sign it. By potentially late calendar year 2016 / early calendar year 2017, we will begin the Remedial Design/Remedial Actions that are called for in the DD. This is our current timeline. Based on where we are now, we are definitely entering an administrative paperwork phase of the process and the next action that you will see will come in 2017 when we begin to undertake final activities.

**D. Noble, USACE:** Now, I would like to be able to answer your questions. The whole team is here to help me answer questions. Additionally, S. Hirsh and J. Sweeney are here to give their viewpoints. Feel free to hang around afterwards to chat more on-on-one. Andrea Takash (USACE CCO) will come around with the microphone.

#### **IV. Community Questions**

**Community Member 2:** If you have a property that is not in the areas indicated, in other words, it is completely white; does any of this apply to us at all?

**D. Noble, USACE:** I guess not really, although you are certainly part of the FUDS potentially. If you are not in one of the areas highlighted, there are no additional actions planned from the soil perspective that need to be taken on your property. Groundwater could conceivably be but I want to have Todd Beckwith address that since he is the groundwater project manager. Groundwater is more of a regional issue, so if there are some actions that need to be taken with respect to groundwater we will locate ways to take those actions on right-of-ways, or on publicly or federally owned property. We will try to take any groundwater actions in such a way that the impacts on private property are kept to a minimum if we can, but of course the soil issues are different. If you are within the area, and you have soil on your property, then we have to potentially enter your property to take care of the soil contamination issue.

**Community Member 2:** The letter sent out in August of 2001 that said our property was clear, so nothing has changed from that letter?

**D. Noble, USACE:** No, nothing has changed from that arsenic sampling results letter. If you are not in the area that has been identified for further attention then there is no change in that letter. When these site-wide documents are finalized, in my opinion, the RI document will state the areas that still have remaining concerns. If you are not in them then you don't even need that letter anymore, you have this report that says these are the areas where there are remaining concerns and where we are going to focus our final efforts. Our goal is that over the years we have sent out quite a few letters; by the end of this process you should not need any of those letters. You can simply refer people to the Administrative Record and the project documents that would state what was done in the area and what the issues were.

**Community Member 3:** What is the anticipated timeline for the groundwater study?

**D. Noble, USACE:** USACE is currently internally reviewing a draft of the Groundwater RI report. We hope to have it out to EPA and DDOE this summer and then the final document will be publically available around late summer 2015. It will follow a similar type of process with the site-wide RI timeline to get through the remedial action. Keep in mind that we will try to implement remedial actions for groundwater in such a way to have as minimal impact on private properties as possible. Remember that groundwater is fairly deep at Spring Valley. There are some areas where it is fairly close to the surface but for the most part, it is 15 to 20 feet down. There isn't really any interaction

between you and the surface with any issues that might be in the groundwater and you certainly are not drinking any of the groundwater; you are all on city water which is from the Potomac River.

**Community Member 3:** So without taking it too far out into the field what are the types of remedial actions that you would take concerning groundwater?

**D. Noble, USACE:** You can try to do things that would actively address the contaminants in the groundwater. Such as going to the areas where the groundwater is most contaminated, installing a well, pulling that groundwater out of the ground to treat it and re-inject or discharge it somewhere like the Potomac River. There are other things that you can do that are considered more passive remediation methods, where you might inject something biological or chemical into the groundwater that would take care of the contamination. You can use techniques to block the groundwater from moving; sometimes that is considered acceptable. One option that is always looked at is: Can we just monitor the contamination issue until it simply fades away on its own? Sometimes it might take a long time but it is often the cheapest option. I should mention that cheap isn't the major priority in any of these remedial alternatives but we are required by regulation to look at cost of all alternatives. All alternatives being equal, we are supposed to choose the most efficient one.

**Community Member 4:** I have a question on timing. Obviously once you announce areas of interest or concern, then for any of those properties that need to move or sell a home, it is a big problem and people have worries. We are in a period right now, from now until you complete, of uncertainty and it's obviously mostly acute in the 100 properties you have identified. I think it's going to put a cloud of uncertainty over all of Spring Valley to an extent if people need to move or sell a home. Looking at your time line for the two-year period for the completion of the study including the comment period, I know that most of that is statutorily subscribed by CERCLA. So my first question is, is there anything that could be done to squeeze the first two year period. And my second question is for what period do you foresee for the actual cleanup after that?

**D. Noble, USACE:** We certainly do what we can to get through the process as efficiently as possible. You are right that it does take a while to get through these administrative steps. I don't know that I have much else to say, other than we will move as efficiently as we can to get to the DD and get that signed so that the community will know what it is that we have to do to complete the project and get to work on that. With respect to your question on when we will get started and how long it will take, the very preliminary ideas are around two to three years. This range is based on the number of properties that we might have to look at and the types of things we are beginning to look at and explore in the FS to address the issue. The time period for the activities could be from about 2017 to about 2020.

**D. Noble, USACE:** I certainly empathize that once we come out and say these are the areas with concerns, that the people who live in these areas have to live with this truth. One thing I want to point out is that we are describing the conditions as we saw them based on the data that we saw in the RI report. Nothing has changed in the recent years that would cause us to become concerned about these properties. These conditions have existed for decades since AUES shut its doors in 1920 and we have actually all been living with this since then, even though we may not have realized it. I certainly understand that writing the RI report and putting it out that there is an impression that things take too long dealing with private property owners and unfortunately the administrative steps are part of the process. We need to identify the problem before we can start taking actions to best deal with it.

**Community Member 4:** I appreciate the transparency and understand that, but specifically is there anything that can be done to shorten the first two-year period or the second three-year period.

**D. Noble, USACE:** We are trying to work as efficiently as we can in preparing these documents. We are not waiting for the final iteration of the RI report to begin writing the draft FS. It is in the CERCLA regulation how the FS must be laid out and prepared. We understand that between now and the time that we finalize the RI report there could be changes but we have identified issues that we can begin to set up and address in the FS process. Where we can work on two documents to an extent simultaneously, we are going to do that. However, there are limits to how much we can do simultaneously. You are supposed to give the amount of time to fully understand the issues, to fully comment on them and to implement our decision-making on the issues. That is what the process is supposed to do, allow the community to influence USACE's decision-making process.

**D. Noble, USACE:** As we get closer to the three-year remedial action period, and we will have a better, more defined idea of what it is we are going to do. USACE works by contractors, so we will use contractors as we hire them to perform these activities. Then we will discuss with them that schedule is important to us and how to work as efficiently and quickly as possible.

**Community Member 5:** You said that you believed that the properties adjacent to the designated areas were clear, I believe. I would actually like something a little more definite than 'believe' because in 1995 we believed that everything was all cleared out.

**D. Noble, USACE:** USACE is the principal author of this RI report and we have put down how we see the data but obviously there are other comments (viewpoints). Some of the other comments could suggest that USACE has not cast their net far enough and they need to do more. We will have to look at the validity of those comments - some of which have already been made. For now, the RI identifies certain areas. We might have people who disagree and we will need to respond to all those comments.

**Community Member 5:** The second part of my question is you mentioned the letter we all received stating that our property was clear. I would actually like a new letter issued when you have completed this project saying that all of the properties are clear and that you have inspected every property and it is clear. I would like that letter for my files rather than to refer someone to a website.

**D. Noble, USACE:** I think we can certainly issue individual property owners a description of what we did and how that satisfies the requirement of what we are supposed to do. I am not going to ask permission to come on your property and then not work with you to give you something you want at the end of the process. However, these final documents will supersede any letter I might give you. They will formally state the actions that were taken, why they were sufficient and why Spring Valley, the entire site up to this point, has been addressed. We can certainly give you a letter but keep in mind that the documents themselves will be more powerful and significant.

**Community Member 6:** If it takes two or three years to do the remedial work, property owners are going to need those letters during that period. They can't wait until the end of the three years.

**D. Noble, USACE:** As we go through the cleanup activities, as we finish what we need to do, we will absolutely issue those letters stating what we did on your property. After the work is completed, a document will come out that will make those letters unnecessary.

**Community Member 7:** I think what I hear some of these homeowners saying is that when someone lists their property or wants to sell their property, it's wonderful to say that there has been this massive amount of research. However than combing through this enormous amount of information is so confusing to homebuyers and no one ever wants to do that. They have heard enough about Spring Valley as it is. It is infinitely better, I think what I hear these people saying, to have a simple two-page letter that says, we know about this issue, here is a letter, we are ok.



**D. Noble, USACE:** And what I am saying is that I will have a document that says for the 661 acres everything is ok, we identified what needs to be done and really at this point no one's property is any different than anyone else's with respect to residual concern.

**Mara Miller:** My name is Mara Miller, I grew up in Spring Valley, my family lived in Spring Valley for 57 years, from 1957 to 2014 and I am sick with a very rare disease, a rare immune deficiency. None of my other siblings are ill like I am and I have multiple other diseases as well. I was definitely exposed to chemicals growing up. There is no doubt. I am concerned that I grew up in Spring Valley and know so many people who were able to see at least one kid die. I knew at least two kids for every street who died young and then others sprinkled throughout. I am sure I don't know the least of it. I know on my own block, multiple people who already died. I am aware of the fact that a number of my neighbors got together over a period of years and recorded health documents. There are 26 pages of documents where house after house after house and no talks about it. It is like the big elephant in the room that no one wants to mention.

**M. Miller:** I have further concerns about where you narrowed scope because as sick as I have been, I haven't been able to look through the research myself, but I have friends who are chemists who both have PhDs in their fields and they have done a considerable amount of historical research. One of them told me that there were actually three points from which missiles were launched in Spring Valley. One was on the other side of the circle where the barracks were, one was at the livens pit which is right at Woodway Lane and the soccer field near the university, and one was near the reservoir. I am trying to get that established but everything was supposed to be shooting towards Westmoreland Circle.

**M. Miller:** All I can say is that there were field tests, air tests, there was burial of munitions, there was so much pollution it was incredible. But beyond that people who grew up where we were remember bunkers, and as far as I know there were at least four bunkers that myself or some of my siblings or their friends were in and could describe. All of us have been too afraid to talk because we were afraid we would be sued. I got to the point where I realized that eventually I am going to die; I don't have anything to lose. I think the most important thing is that we find the chemicals. No one should have to live like this and no one should raise their kids in Spring Valley thinking that it's going to be ok if there is still a problem here that hasn't been dealt with. Because the Army inventory documented tons of chemicals that were buried in Spring Valley and tons have not been excavated. I know that there is more there and I am going to try to put in writing the bunker I myself was in. It was on the back hill where the president's house and AU was overlooking that driveway of the seminary. I was actually inside that bunker. It was a really interesting place. A memory that I have of it is very clear and I could probably try to draw a picture.

**M. Miller:** Whether or not those bunkers are still there or not, we need to know that those chemicals are gone and if new people weren't getting sick, I wouldn't bother because I would rather spend the rest of my life with my family. But I am here because I was once a kid that got poisoned by that and I have grown up with that and I don't want it to happen to someone else. That is why I am here. I do want to thank USACE for everything they are doing and I am extremely grateful. Thank you.

**D. Noble, USACE:** Thank you for coming and making that statement. Certainly you mentioned that you were going to turn some comments in, please do and make them as long and as detailed as you like. You mentioned you had some friends who are technical experts and you can add their input. We will take the time to answer those types of comments.

**Nan Wells:** Can you tell us more about the review process; are these reviewed by the EPA, and what sort of congressional review is given to these? Is this made a part of the hearings where they get into

appropriations where they announce where the money is provided and where there is a discussion of what is needed, for example to accelerate some of these processes?

**D. Noble, USACE:** There really is no formal review of the document. The process is as it is laid out; CERCLA was a law that Congress wrote and passed. Many of the guidelines and policies that were put in place were written by the EPA. There is no formal congressional review now; when we receive a new document, the entire team reviews the document and we have to acquire an Independent Technical Reviewer (ITR). There is a branch of USACE where all the technical specialties reside and they review the document. With respect to public health issues, the Army has a Public Health Command; they have to review statements on risk as it applies to residual chemical risk that might be in soils or groundwater. When all of the internal USACE review is done and all of the comments are addressed, the draft report is given to the regulators for review and comment. Then certain documents do go through a public comment period and then they are finalized. One of the things that takes a long time are the multiple levels of review that has to occur with all of the documents. That is fairly extensive right now for each document; it is quite an involved process.

**N. Wells:** But it doesn't move on to a congressional review? Tom Smith and I were involved years ago on review of various things, as did other people. I think, especially for homeowners who are concerned about documents and things like this, that would be a very viable way of talking about this. There was considerable interest in Congress when we did it with Mrs. Norton because many of the problems that people in Spring Valley have are problems in other congressional districts. They have members of Congress that can vote on all of this.

**D. Noble, USACE:** Certainly Congress retains all of their oversight on all of the activities that the executive agencies do, but these are programs that are funded by Congress and there is formal reporting back to Congress every year on how the money was spent, and what was accomplished with the money on a national level. This type of reporting is on a national level and it doesn't look at site specific issues, but we can certainly be called back to Congress for site specific issues if need be. I have been in a couple of those hearings where we have had to go over some things and specific details. There is no congressional review on any document of any particular project.

**N. Wells:** But if there were ideas on how to shorten the time and bring this to a conclusion more quickly that could be discussed in Congress or in a hearing.

**Allen Hengst:** I just want to make a comment, build on what Nan said. I understand that the review period is kind of locked in and it can't be sped up but as far as the cleanup period from 2017 to 2020, I would offer a hypothetical that if Congress were to suddenly appropriate more money for this program that it could be sped up. It is true that at 4825 it wouldn't help because they would be tripping over themselves on the small property but here you are talking about 100 properties spread out among 661 acres. If the USACE suddenly had a big chunk of money, I think it could be sped up a lot. If you want to comment on that, you can.

**Gary Langston:** My name is Gary Langston, I live on Tilden Street. What I am not getting from this picture that the RI is silent on, is any insight into not necessarily the review process but the analysis process. I am not getting a sense for the level of effort, how many people, experts, whether it's all table top, whether there has been any physical looking, something to compress the timeline and the uncertainty of those 100 properties to be reduced. I am a whole lot less concerned about the review process than finding out the initial preliminary phase and getting that information moved up.

**D. Noble, USACE:** Would you like me to talk about some of the chemical side of things or the initial side of things?

**G. Langston:** So in my case based on what is presented it is a munitions issue.

**D. Noble, USACE:** The process is pretty extensive and detailed; it is laid out in the RI report and in the appendices that together add up to thousands of pages. With respect to munitions, let me show you a couple of additional slides to see if it helps. What we are required to do is identify all information as part of the RI. That includes such things as archival searches and if you are lucky enough to have people around who worked at the facilities, interview them and things like that. A lot of it is going out into the field, conducting testing, and looking for things. We are required to identify the response sites we believe that we should be concerned about at Spring Valley. So in the RI report you will see a figure that shows the response sites that we felt and called out as areas that needed to be looked at for munitions reasons. I mentioned that we have a technical review by these USACE folks that work with us out of Huntsville or Omaha. They are called the Center of Expertise. They look at the investigation data as well and see how we conceptually structured our site and agree or disagree and bring up any concerns. These drawings were shared with Steve (EPA) and Jim (DDOE) at the earliest possible time for them to look at it to see if they had any issues or concerns. To try and give you detail and how far the net is cast, the area that you see there at the very left, that is tan and goes off the screen, that is a Civil War range fan. So we even looked at Civil War concerns that might be here at the site and included them and the report briefly addresses those concerns as well. For these areas that are identified, we proposed steps that we would take to investigate the issues to define the nature and extent of problem. That is essentially what the RI does; identify the nature and extent of the problem.

**Community Member 8:** Are you doing additional testing in the blue area?

**D. Noble, USACE:** No, the conclusions of the RI report are saying that we have done the testing we need to write the RI report and fully describe the nature and extent of the problem that we still have to address.

**Community Member 8:** But the remedial action could generate new areas for testing?

**D. Noble, USACE:** Testing might be part of the remedial action, yes. Basically what we do is we gather data to put into the formal process, the Munitions and Explosives of Concern Hazard Assessment (MEC HA). This is a tool developed between USACE and the USEPA several years ago to formally process this data and give out hazard levels to each one of these Munitions Response Sites. Then, based on the relative ordering of the scoring that comes out of this process, you basically have a comparative of the areas that need to be dealt with and you do that in the RI report. For our site, we basically looked at the historic experiment station with respect to munitions. And the records they had and photos and things like that basically show that they ballistically fired some munitions. So they had ballistically fired test areas and static test fire areas at the site. We know they disposed of munitions and buried them as well, so there are potential disposal sites we need to be concerned about. Those are the three Conceptual Site Models (CSM) we used to frame the munitions problem at Spring Valley. So this is the CSM of the ballistically fired test range. There was a firing point and we described the specific types of munitions that we believe were ballistically tested. We drew out a range fan showing where those munitions would probably have their target areas from the firing point. We believe there was a single firing point at AUES. There was a single ballistic test facility with a single firing point. We think they fired three types of munitions from the firing point: three inch Stokes mortar, four inch Stokes mortar and the eight inch Livens projectile. There were different sizes to the Livens that could have been fired as well but would still be encompassed by this single range fan. The three different color bands within the range fan are the three most likely impact areas based on known target locations, photographs that we have of the firing taking place and what it was they were aiming at from the firing point and the final terminus of the range fan represents that max range that the farthest flying of those two munitions could have gone, being the Livens. It is sometimes referred to as a buffer zone.

**G. Langston:** That is in the RI. What I am trying to get insight into is the study plan or the work plan that develops the alternatives to be considered. What strikes me is, without having insight into what the detailed project schedule is of the FS, I want to know what real work is happening that precedes the review process to have an understanding of the level of effort to the real work of the FS as opposed to the review of the FS. Is that already ongoing?

**D. Noble, USACE:** It is ongoing and there are alternatives already being formulated to address these issues already identified by USACE. The FS process again has already been prescribed with what we must do. We have to analyze alternatives by nine criteria. We must also develop initial schedules and initial costs for each of the alternatives. All that is done, included, and presented in the FS, so there will be several alternatives and a lot of information about each condition of the alternatives and eventually a recommendation of what appears to be the best alternative.

**G. Langston:** Would more resources result in a more thorough product or compressed schedule for the FS?

**D. Noble, USACE:** There is a speed sometimes at which things can proceed. There are some people who have been working on the issues for a long time and understand them, so there are only so many of those people who can work on it.

**G. Langston:** If the project manager identifies an opportunity to apply more resources to compress the schedule, do you have that authority to make that happen or do you need help?

**D. Noble, USACE:** I have the authority to make that happen, but someone else can also satisfy the things that must be done.

**Community Member 9:** How do you physically go about acquiring your data and arrive at the conclusion that you have a blue area and now you have a yellow area? Years ago I attended a couple of these sessions and years ago there was value to doing ground penetrating radar (GPR) but then it wasn't that effective and it didn't go that deep, and there were other things they were considering. It is a mystery to me how you go about acquiring that data and then analyzing it and then determining the feasibility of the remedial actions.

**D. Noble, USACE:** Basically, for the identification of these facilities, there are the old records from the experiment station. So we looked through these records that the scientists produced, and looked for tests that they said they did and where they did them. We looked at drawings, maps and photographs that we were able to gather together. Aerial photography analysis has been extremely important because we do have a good aerial photograph that was taken in 1918 that showed a lot of definition of these sites from that aerial photography analysis.

**Community Member 9:** What troubles me is that, having lived here for several years, it is almost a first stage, second stage, and now we are in a third stage. At one point we were told that everything had been remediated and then that was it and then all of a sudden that was no longer the case. What makes me think now that what you are going to do will be more effective than what has been done in the past? You get to a credibility issue at some point.

**D. Noble, USACE:** The RI and the RI report represents our due diligence to do enough to investigate the issues and describe them as fully and completely as we can so we can make informed decisions on what needs to be done. We are always open to new criticism that we haven't done enough. That is part of the process that we are in right now with the RI report. That here it is, this is what has been done and the data that has been gathered and the conclusions that have been drawn from the data and if there are, in your opinion, deficiencies or things we have overlooked, now is the time to bring them to our attention. So you come around eventually to this concept of what is a FUDS? We will always

be a FUDS and there could always be new information that comes to light that we didn't know about that would make us think about the site differently. Even when we are "done," it doesn't mean Spring Valley is no longer a FUDS; Spring Valley will always be a FUDS, as long as there is a FUDS program there is always the possibility that there could be an issue identified that needs to be addressed. This is our best attempt right now to look at what we have and say what needs to be done and get it done.

**Community Member 9:** Do you have more capability to arrive at those conclusions say 10 years ago, technologically. Are there any technological advances that make an examination now more effective, more efficient, and more reliable than 10 years ago?

**D. Noble, USACE:** The concepts of what went on at the site and how the work was done certainly changes during the investigation of the site. If more documents or more information comes to light about the site, technology is constantly improving so the analytical chemistry technology used to look for the compounds in the soil and water improves all the time. The technology used to look for the metallic munitions improves all the time and we can do a better job now than we could 10 years ago but it doesn't mean what we did 10 years ago wasn't sufficient.

**Community Member 10:** You said earlier that 50 of these 100 properties had some level of inspection on them. Are you going to go back to the first 50 again and is each one of these 100 properties going to somehow be investigated? In my case, two-thirds of my property is covered in patios. I have a pool. I buried power lines, and there has been a lot of digging and trenching in that yard in the last 15 years. How would you begin to know if there is some fragment of metal underneath where my swimming pool is or under a patio or otherwise. Once you have inspected a property and decided there is nothing there, can you then issue some sort of comfort letter because some of us do want to sell our home. This casts a giant shadow over every property in that area, even though there is nothing that indicates anything on my property.

**D. Noble, USACE:** Yes, it is a challenge to go back and look for something that was left behind 100 years ago. You are right, there has been a tremendous amount of work and development in the area, a lot of soil has been dug up and moved. The elevations and contours of the land have changed over the years, people do projects like swimming pools. In the construction process, more debris would be carried around and all underground electrical lines put off a signal as well. So there is masking of the signal that occurs and it is kind of one of the reasons why this will always be a FUDS because you cannot absolutely look everywhere. Not with all the changes that have occurred over the years. So we are proposing to do what we can up to the limits of the technology that is currently available.

**D. Noble, USACE:** (Slide showing survey work being brought up). If you look at this picture on the top right, that is one of the survey instruments being run on a property and you see that there is a patio on the property that wasn't there before [during WWI]. The instrument was run across the patio and you can see the flag that is poking up on the patio. Sometimes the instruments can see through the patio. If the patio is just a masonry or concrete structure without any metal reinforcing in it, we can get a fairly good look under that kind of a structure. If there is a lot of heavy metal reinforcing, then it gets masked and you can see less and less and you can't pick out anything that might be there. We offer these alternatives with the understanding that we can't look everywhere and completely guarantee that everything is off the property. I think that we will eventually choose an alternative that would have us return to every property with some level of effort to follow up from the investigation. So if your property was part of the one of the properties we looked at as part of the investigation, then we would probably still want to come back and look one more time.

**Community Member 10:** So are you going to propose tearing up patios, digging up 70-year-old azaleas, rhododendron, and everything else just because you see something. In my case, I am not

worried that there is anything there, I am more worried about the shadow cast over the property and inability to sell the house and any damage that gets done when you come in and tear everything up.

**D. Noble, USACE:** Some of these alternatives that will be proposed will be fairly exhaustive. They will propose such things as moving obstacles that are there out of the way so that instruments can be run. But we will have to ask ourselves is the juice worth the squeeze? That's where you help us make that decision. You heard the numbers that I said earlier, is it really worth tearing up 100 properties to find these four items that have a low hazard associated with them? Probably not, but is there some value going back and looking where we didn't look perhaps taking some halfway intrusive step to look for these four items, recover those items and get them back? Probably so, considering that these potential munitions are in a residential neighborhood, so there is that balance to be achieved. Part of the process is to have you help us achieve the appropriate balance.

**M. Miller:** I wasn't at the meeting where you discussed cobalt but I have a question. I am aware that inorganic cobalt when combined with metals can have a severe effect on a person's health - same thing with metalloids like arsenic and antimony. So when you rule out a level of how dangerous this level of this one isolated chemical is yet we are living in this valley where 1600 chemicals were experimented with. At what point can you decide that the sample we took didn't have organic, therefore it is not dangerous? But the kids that are playing there are all over the place and what they pick up when they are playing could combine those things. I guess what I am wondering is, what was your methodology for ruling out chemicals one way or another when they are really in concert with each other when in combination they are far more lethal. The second thing I wanted to ask was about sewer sediment. When people at the Navy Yard were getting sick, they tested the sewer sediment and found high levels of arsenic. According to Richard Albright with the District Department of the Environment, that was remediated subsequently and seemed to have helped solve some more problems. My interest is making sure people aren't sick. I am asking how come if it worked at the Navy Yard, why haven't the sewer sediments at Spring Valley been tested? It just doesn't make sense.

**D. Noble, USACE:** Let me try to address the first question about the chemicals acting together. That is considered and is part of the process that is used. The calculations are very conservative and levels used are very conservative, when you consider concerns like that. Often as the analyses proceeds, you can begin to identify the chemicals you are concerned about and identify the target organs that are targeted and see if there are three or four chemicals targeting one organ in particular. There is a lot of that that goes into the process. Cliff, do you want to add anything?

**Cliff Opdyke, USACE:** My name is Cliff Opdyke and I am the risk assessor on the team and I think I spoke with you earlier. We do consider the totality of exposure out there and it informs our decision making process moving forward. I think one of your largest interests given your health concerns is the past exposure, what were you exposed to, what are the mixtures you may have been exposed to, and that is the sort of thing that unfortunately in our decision making, is what we do not address. There is a whole separate government agency that does that; The Agency for Toxic Substances and Disease Registry (ATSDR). They will look at the data we collect and try to recreate past exposures to try to get to certain questions that you are asking. Such as, I lived here for 50 years and I think I have been exposed to more chemicals, maybe higher concentrations of chemicals than you show what is here. There is that dichotomy that we are caught in going through the CERCLA process: we don't look at the past, we only look at the future.

**Cliff Opdyke, USACE:** The other part of your question was about multiple chemical exposures. We do look at that, as Dan just alluded to. We look at concentrations first of all the metals, semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), all of those things combined to

the extent we can. If there are carcinogens, we look at all the totality of those carcinogens per receptor type. Per adult, child, worker in the area, if you are resident, and we take the most conservative view.

**M. Miller:** So what accounts for so many kids sick and so many kids dead? And we lived in other parts of the valley than what you are focusing on now, so I mean I can say that I was in those areas but the majority of my 57 years when I was in Spring Valley was not those areas. It was other areas. I am not convinced you have everything, at all. I am seriously thinking there are tons of stuff buried in the hills and it is all running right downhill.

**C. Opdyke, USACE:** I think I expressed this to you earlier, if there are problems that you have and areas of concern that we haven't addressed or identified, then we certainly want to know about those.

**M. Miller:** So would you like a map of everyone that died already and so on and so forth

**C. Opdyke, USACE:** Unfortunately, no, it is not something we can use in our decision making process. Again, that is the type of thing that Johns Hopkins has looked at, and ATSDR. So what we will do is, we will look at the chemical concentrations in all the various media we are looking at, or hazards from exploding munitions, to inform our decisions moving forward. That is our part of the CERCLA process, it unfortunately doesn't address the types of concern you are addressing.

**M. Miller:** So since Johns Hopkins did a flawed nonscientific study, what a waste of \$500,000, and they omitted from their findings that myself and my friends died from if they weren't on the cancer registry in DC in that area when they died, it wasn't counted. So considering all of that, that model was flawed from the start. I have no faith in that whatsoever. I have real life history to look at, house after house after house of disease and if I wanted to talk to somebody about that and get some results, not waste my time, what precious time there is, I want to know who I got to talk to and not somebody that is just going to stonewall me.

**C. Opdyke, USACE:** Well, unfortunately places like Johns Hopkins, this other government agency, ATSDR, have the epidemiologists that really dig into the questions you are asking, so I am not trying to evade your question in any way shape or form, I am just saying that the issues that you are most interested in aren't the types of things that inform our decision making process for how we move about addressing the risks and hazards that we've identified. Does that make sense?

**M. Miller:** Yes, it does, but why is it so hard to get a name? Because I know of multiple people who are at NIH because they have a rare blood disease. I haven't been able to get in there yet. I should be able to be in there. I mean there are multiple issues that affect us. I have been wiped out financially; I can't work anymore. It is horrible to have your property locked up. It is worse when your whole life is shortened because of something you happened to face. I am wondering why there isn't some sort of easy, like if you want to test your own property, this is where you would go to hire someone, or if you want your sewer sediment out front tested this is who you call, or if you are sick with some rare disease, this is where you go. There is none of that; there is absolutely no support in Spring Valley. I just want to know why.

**Andrea Takash, USACE:** We would love to talk to you more one on one afterwards but I am looking at the time. We are happy to give you some names later, but this gentleman has been waiting for a while.

**Community Member 11:** I would like to go back to the previous chart where the blue areas were shown. You talked about doing testing on a number of properties and finding 50 items that were suspect and four that were of munition concern. How many of those tests were done in that newly defined area?

**D. Noble, USACE:** Those numbers I quoted were the numbers that came from these blue areas. Just those blue areas. We have done a lot more work than that site wide, but for the purposes to describe to you what was done in these areas and what the data was that the decision was based on; those were the actual numbers in the area.

**Community Member 11:** Because right now it does look like it is a theoretically drawn line there and not empirical based on tests. What you are saying is that this chart is a combination of the theoretical area of where munitions may have gone plus the evidence of the work done before.

**D. Noble, USACE:** There is some buffer factor in the definition of each of these facilities included. For instance, the range fan that looks like a piece of a pie, while in actuality a munition would have flown from the firing point in a direct line to the target so it should look like a single line. There are safety offsets and things like that because there is an understanding that munitions don't always fly perfectly in flight. So you put out an angle that you believe covers it and so you have the buffer.

**Community Member 11:** As a follow up to the previous question, I vaguely recall that CERCLA calls for a quantitative hazard assessment. And you said that four were problematic. Can you give us some feeling for the seriousness of the quantitative, on a 0 to 100 rank, is it 10, 15, etc?

**D. Noble, USACE:** So the MEC HA process assigns a score to an area, 1 to 1000, where the lower score the better the conditions. It takes that scale of 1000 and it separates it into four ranges that go from 0 to 1000, I don't remember the ranges at the moment. There are areas that are one, two, three, four as far as hazard range, with 4 being the lowest and 1 being the highest priority area. For these areas they ranked as threes.

**Community Member 11:** They ranked as threes, one being the worst and four being the best.

**D. Noble, USACE:** It is a relative ranking, it is quantitative but it is also sort of semi-quantitative. One thing that is mentioned in the guidance as you perform one of these is that whatever rank or category you happen to fall in does not automatically mean that you have to take some sort of action in kind. You still have to consider what the best thing to do is and that comes down to a lot of professional judgement in my opinion. If that helps, four would be considered the lowest priority area.

**Community Member 11:** But even if you have a four, some kind of remedial action could be called for.

**D. Noble, USACE:** Yes, even with a four you could propose some kind of remedial action that would take place. It is MEC HA, so you have to have a munition or explosive of concern to run the method. So if you go out and you know the area was a munitions test facility but in the end you don't find any evidence of a particular munition you are looking for, you can't complete a MEC HA because you don't have anything to feed into it. What did you find; you found nothing, so the score is zero. The very nature of running the MEC HA means you did find something that you were concerned about so you ran a MEC HA and it came out as four, which is good, but it doesn't mean that you are completely off the hook because you did find something which means that you might need to continue to look further. You need to make that judgement call in the RI.

**Community Member 11:** I was wondering if you could expand just a little bit on the kinds of metals and the kinds of concerns that are associated with them. We started with arsenic and added cobalt, and now antimony. What else is there that you are worried about and is it the nitrate things, the synergistic effects, how do you assess that?

**D. Noble, USACE:** The residual chemical concerns are just in the yellow highlighted areas, so we have no residual chemical concerns in the blue areas. The only thing we have in the blue areas that



we are concerned about are potential munitions hazards. Certainly, I can get into what was going on in the yellow areas and what we found, if you would like, but what would interest you more are the specific items we found within the blue areas that trigger our concerns.

**Community Member 11:** So the blue areas are munitions and that doesn't mean metals. The metals are classified as chemicals.

**D. Noble, USACE:** Certainly, munitions are made out of metals but that is not the concern, the concern is the safety hazard associated with the munition. The residual chemical concerns are more about potential health concerns if you were exposed to the chemicals in the soil. That is the difference.

**M. Miller:** I have a question about that. When the missiles exploded in the sky and eventually all of the metals, like arsenic and whatever float down to the ground, you don't have a missile surrounding all of that fallout, it is just in the ground. So you are saying that it is just the missiles themselves.

**D. Noble, USACE:** We took samples and tested the soil for that type of thing to occur in all of these areas. The end result was that no, we do not have chemical issues or concern. The remaining issue that the RI report eventually concluded is the intact munition itself might still be there. That is the concern that we focused on. In the areas in yellow, there could have been various ways that those chemicals came to be deposited in the soil from the activity at AUES, which could have included the testing of things by releasing them into the air and the fallout onto the ground. We consider those issues site-wide.

**Community Member 11:** The four tests that came up bad are in yellow.

**D. Noble, USACE:** No, the four things we found that we didn't like were found in the blue areas.

**Community Member 11:** The blue areas. Those are not chemical, those were something else.

**D. Noble, USACE:** Those were munitions items.

**A. Takash, USACE:** I just want to let everyone know, it is almost 8:30, we have time for maybe just one more question in this setting. We are going to stay as long as people need to be able to talk to you one on one.

#### **V. Closing Remarks**

**D. Noble, USACE:** Thank you everyone.

The meeting was adjourned at 8:27 PM.