APPENDIX C

IOWA ARMY AMMUNITION PLANT
EXAMPLES OF OUTREACH

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U.S. Army Corps of Engineers
St. Louis District

Summary of FUSRAP Activities at the Iowa Army Ammunition Plant

OPERATIONAL RANGE AND MILITARY MUNITIONS RULE

"Gateway to Excellence"

The U.S. Army Corps of Engineers (USACE), St. Louis District, is conducting an environmental cleanup program at the Iowa Army Ammunition Plant for sites formerly used by the Atomic Energy Commission to process material for national defense activities starting in the 1940s. The program responsible for this work is the Formerly Utilized Sites Remedial Action Program (FUSRAP).

The FY 1998 Energy and Water Appropriations Bill, in which Congress transferred management of FUSRAP to the USACE, was signed into law on October 13, 1997. Prior to the signing of this bill, FUSRAP had been managed by the U.S. Department of Energy.

The USACE encourages private citizens to participate fully in the cleanup program.

To learn more about the IAAAP FUSRAP areas or to inquire about public involvement opportunities, call

314.260.3905

or write

FUSRAP Project Office, St. Louis District, Corps of Engineers Office
8945 Latty Avenue
Berkeley, MO 63134

BACKGROUND

USACE is conducting response actions under the Formerly Utilized Sites Remedial Action Program at the Iowa Army Ammunition Plant (IAAAP) at specific locations previously used by the Atomic Energy Commission (AEC) during the early years of the nation's atomic energy program. One of the areas designated for response under FUSRAP is the Firing Site Area (FSA). The FSA is a fenced site located in the western portion of the IAAAP that encompasses 450 acres (1,821,085 m^2) and contains several individual firing sites. The FSA was developed by the AEC to support test firing of munitions for the IAAAP and was used by the AEC between 1948 and 1974. The FSA continues to be used by the U.S. Army.

WHAT IS AN OPERATIONAL RANGE?

An "operational range" is a range that is under the jurisdiction, custody, or control of the Secretary of a military department and 1) is used for range activities, or 2) although not currently being used for range activities, is still considered by the Secretary to be a range and has not been put to a new use that is incompatible with range activities. 10 U.S.C. §101(e).

The FSA is currently an operational testing range being used by the U.S. Army to test military munitions. Historically, munitions containing depleted uranium (DU) were tested at the site. Munitions containing DU, however, are no longer tested at the FSA.

WHAT IS THE MILITARY MUNITIONS RULE?

The Military Munitions Rule (MMR) recognizes that conducting environmental response actions at operational ranges conflicts with the United State's need to maintain its military capabilities through training and testing, until the site has been put to a new use that is incompatible with range activities.

In particular, The MMR identifies when military munitions become solid wastes potentially subject to hazardous waste regulation under the Resource Conservation and Recovery Act (RCRA, Pub. L. 94-580). Under the MMR, a military munition is not solid waste when "used for its intended purposes". In addition, used or fired military munitions found on operational ranges do not become solid waste until they are removed from the site of use and transported for treatment or disposal. 42 C.F.R. §262.202. Because the munitions are not considered solid waste, the munitions found on operational ranges are not hazardous waste and are not subject to RCRA regulation.

WHAT IS THE SCOPE OF FUSRAP RESPONSE AT THE FSA?

FUSRAP response actions at the FSA will address DU contaminated soils. DU present at the FSA is a product of historic AEC operations at IAAAP, which are no longer conducted, and is not considered a munition subject to the MMR. FUSRAP response actions will also fully address any other chemical, metal, or explosive contamination that is commingled with soils containing DU. This scope of FUSRAP response is consistent with the December 2006 Dispute Resolution Agreement executed between the U.S. Environmental Agency and the Department of the Army.

Example of Fact Sheet

U.S. Army Corps of Engineers
St. Louis District

Summary of FUSRAP Activities at the Iowa Army Ammunitions Plant

WHAT IS FUSRAP?

"Gateway to Excellence"

The U.S. Army Corps of Engineers (USACE), St. Louis District, is conducting an environmental cleanup program at the Iowa Army Ammunition Plant sites for formerly used by the Atomic Energy Commission to process material for national defense activities starting in the 1940s. The program responsible for this work is the Formerly Utilized Sites Remedial Action Program (FUSRAP).

The FY 1998 Energy and Water Appropriations Bill, in which Congress transferred management of FUSRAP to the USACE, was signed into law on October 13, 1997. Prior to the signing of this bill, FUSRAP had been managed by the U.S. Department of Energy.

The USACE encourages private citizens to participate fully in the cleanup program.

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314.260.3905

or write

FUSRAP Project Office, St. Louis District, Corps of Engineers Office 8945 Latty Avenue
Berkeley, MO 63134

The Formerly Utilized Sites Remedial Action Program (FUSRAP) is an environmental remediation program. It addresses radiological contamination generated by activities of the Manhattan Engineer District and the Atomic Energy Commission (MED/AEC) during development of the atomic weapons in the 1940s and 50s.

BACKGROUND

The IAAAP is an active, government-owned, contractor-operated facility that occupies approximately 19,000 acres in Des Moines County near Middletown, Iowa. Less than one-third of the IAAAP property is occupied by active or formerly active munitions production or storage facilities. The current and expected future land use of the IAAAP property is industrial/military.

From 1947 to 1975, portions of the IAAAP facility were under Atomic Energy Commission (AEC) control for weapon-assembly operations. These portions of the IAAAP are now called FUSRAP areas. In March 2000, after performing historical research regarding AEC activities at the IAAAP, investigators determined that some of the FUSRAP areas may contain contamination resulting from AEC activities and warranted additional investigation.

These areas are the structures at Line 1, the Firing Sites area, Yard C, Yard G, Yard L areas surrounding Warehouses L-37-1, L-37-2 and L-37-3. The USACE began investigation in 2000 and characterized soil, sediment, and building contamination in the FUSRAP areas. A Remedial Investigation Report, which was issued in October 2008, identified the existence of depleated uranium on the structures at Line 1, the Firing Sites Area, Yard C and Yard G.

HOW HAZARDOUS ARE FUSRAP SITES?

Even though FUSRAP sites contain levels of radioactivity above current guidelines, none of the sites pose an immediate health risk to the public or environment given current land uses. The contaminated materials have very low concentrations and people are not exposed to them for long periods of time.

Although these materials do not pose an immediate hazard, they will remain radioactive for thousands of years, and health risks could increase if the use of the land were to change. Under FUSRAP, each site is cleaned to levels of acceptable for the projected future use of the land such as residential development, industrial operations, or recreational use.

Example of Fact Sheet

HOW DOES FUSRAP WORK

FUSRAP sites undergo several steps that lead to cleanup. Information about the site is collected and reviewed. A Remedial Investigation/ Feasibility Study (RI/FS) is conducted to develop cleanup alternatives. The Remedial Investigation identifies the type and location of the contamination. The Feasibility Study develops and evaluates cleanup alternatives.

What Are FUSRAP's Objectives?

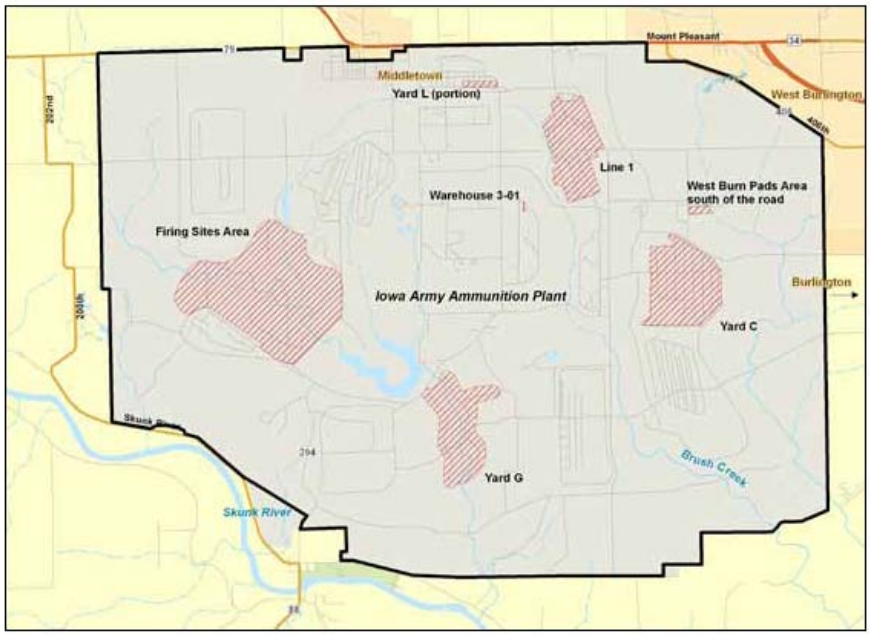
The objectives of FUSRAP are to:

- Protect human health and the environment.
- Execute the approved alternative for cleaning up radioactive contamination above health-based cleanup guidelines.
- Minimize adverse effects on areas business operations.

The public is informed about the development of the RI/FS cleanup alternatives through public meetings and media. Public participation is especially encouraged during the selection of the final remediation, or cleanup, method.

When a cleanup alternative is chosen, a Proposed Plan is written to explain why it was chosen. Members of the public are asked to comment on all the cleanup options, including the selected alternative. After public comments have been considered, a final decision is made and documented in a Record of Decision (ROD). The Remedial Design follows the ROD and includes technical drawings and specifications that show how the cleanup will be conducted.

Cleanup, or Remedial Action, begins after the Remedial Design is complete. This phase involves site preparation and construction activities. When these remediation activities are completed, verification surveys are conducted to ensure that cleanup objectives for the site have been met and are documented in a Post Remedial Action Report.



Former AEC work areas are now under FUSRAP. These areas are identified in hatchings on this map.

Example of Fact Sheet (Continued)

U.S. Army Corps of Engineers
St. Louis District

Summary of FUSRAP Activities at the

IOWA ARMY AMMUNITIONS PLANT

FEASIBILITY STUDY

"Gateway to Excellence"

The U.S. Army Corps of Engineers (USACE), St. Louis District, is conducting a cleanup program at areas formerly used by the Atomic Energy Commission at the Iowa Army Ammunition Plant (IAAAP). This program is being carried out under the Formerly Utilized Sites Remedial Action Program (FUSRAP) which authorizes USACE to address contamination resulting from the Nation's early atomic weapons program. The IAAAP site contains soils and structures primarily contaminated with depleted uranium as a result of activities performed by the Atomic Energy Commission from 1947 until 1975s.

In April 2011, the USACE issued a Feasibility Study identifying and evaluating four cleanup alternatives for soil and three for structures at IAAAP FUSRAP areas.

The USACE encourages private citizens to participate fully in the cleanup program.

To learn more about the IAAAP FUSRAP areas or to inquire about public involvement opportunities, call

314.260.3905

or write

FUSRAP Project Office, St. Louis District, Corps of Engineers Office
8945 Latty Avenue
Berkeley, MO 63134

BACKGROUND

The Iowa Army Ammunition Plant (IAAAP) is an active, government-owned, contractor-operated facility that occupies approximately 19,000 acres in Des Moines County near Middletown, Iowa. Less than one-third of the IAAAP property is occupied by active or formerly active munitions production or storage facilities. The current and expected future land use of the IAAAP property is industrial/military.

From 1947 to 1975, portions of the IAAAP facility were under Atomic Energy Commission (AEC) control for weapon-assembly operations. These portions of the IAAAP are now called Formerly Utilized Sites Remedial Action Program (FUSRAP) areas. In March 2000, after performing historical research regarding AEC activities at the IAAAP, investigators determined that some of the FUSRAP areas may contain contamination resulting from AEC activities and warranted additional investigation. These areas were the structures at Line 1, the Firing Sites area, Yard C, Yard G, Yard L areas surrounding Warehouses L-37-1, L-37-2, and L-37-3. That year, the USACE began investigation and characterization of soil, sediment, and building contamination in the FUSRAP areas.

A Remedial Investigation Report, which was issued in October 2008, identified the existence of unacceptable risk at the structures at Line 1, the Firing Sites Area, Yard C, and Yard G. These areas were subsequently addressed by the Feasibility Study.

The purpose of the Feasibility Study is to develop and evaluate cleanup alternatives for these FUSRAP areas.

CONTAMINANTS OF CONCERN

Depleted uranium that is present on the FUSRAP areas will be addressed by the USACE. Based on continued industrial/military land use, the only contaminant of concern to be addressed by USACE is depleted uranium.

SUMMARY OF ALTERNATIVES

Soil Alternative 1 – No Action

This alternative involves no action for the FUSRAP areas. It is required by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to act as a baseline alternative for comparison with other alternatives. The total cost is $0.

Soil Alternative 2 – Land Use Controls

Alternative 2 includes providing additional land use controls to reduce the potential for exposure to contaminated soil. Land use controls would include fencing, warning signs, and other restrictions. The total estimated cost is $2.3 million.

Example of Fact Sheet

Remedial Alternatives for Soil:

- Alternative 1: No Action for Soil (Cost: $0)
- Alternative 2: Land Use Controls for Soil (Cost: $2.3 million)
- Alternative 3: Excavation of DU-Contaminated Soil with Off-Site Disposal (Cost: $50.4 million)
- **Alternative 4:** Excavation of DU-Contaminated Soil with Physical Treatment and Off-Site Disposal (Cost: $45.2 million)

Remedial Alternatives for Structures:

- Alternative S1: No Action for Structures (Cost: $0)
- Alternative S2: Land Use Controls for Structures (Cost: $286 thousand)
- **Alternative S3:** Decontamination/Replacement of Structures (Cost: $103 thousand)

Soil Alternative 3 – Excavation of Depleted Uranium Contaminated Soil with Off Site Disposal

This alternative includes excavation of depleted uranium contaminated soil where the remediation goal was exceeded. There is no treatment of soil under this alternative. All excavated soil would be transported to a properly permitted off-site disposal facility. The total estimated cost is $50.4 million.

Soil Alternative 4 – Excavation of Depleted Uranium Contaminated Soil with Physical Treatment and Off Site Disposal

Alternative 4 consists of the same excavation routine as Soil Alternative 3 with the addition of soil treatment onsite. Soil treatment is designed to reduce the volume of soil requiring off-site disposal and would include soil sorting and scanning for depleted uranium. Soil exceeding remedial goals for depleted uranium would be transported to a properly permitted off-site disposal facility. The total estimated cost is $45.2 million.

Structure Alternative S1 – No Action

Alternative S1 proposes no cleanup actions at contaminated structures at FUSRAP areas. It is required by CERCLA to act as a baseline alternative for comparison with other alternatives. The total cost is $0.

Structure Alternative S2 – Land Use Controls

Alternative S2 includes land use controls for structures and is protective as long as the controls are in place. This alternative involves leaving contamination in place. Land use controls would include fencing, warning signs, and other restrictions. The total estimated cost is $286,000.

Structure Alternative S3 – Decontamination/Replacement of Structures

Alternative S3 includes cleaning with high pressure washing or grit blasting to remove contamination from structural surfaces or replacing the structural components. This alternative includes the decontamination of a steel grate and the replacement of air filters at Line 1. The total estimated cost is $103,000.

PUBLIC PARTICIPATION

This fact sheet is being issued as part of the public involvement in development of the Record of Decision. The USACE encourages public input to select one cleanup alternative each for soil and structures in the FUSRAP areas. Public input is needed to ensure the remedy selected meets the needs of the local community and is an effective solution to the problem. The final remedy will be documented in a Record of Decision for the FUSRAP areas at the IAAAP. The public is encouraged to review documents contained in the Administrative Record File for the FUSRAP areas of the IAAAP.

Written comments may be submitted to the USACE, at any time during the 30-day period. Oral comments will be recorded during the May 17, 2011, public meeting. The USACE will respond to all significant comments and will consider these comments when working with the EPA to select a final remedy.

The entire Feasibility Study may be read at
Burlington Public Library, 210 Court St, Burlington, IA
or online at **www.mvs.usace.army.mil/eng-con/expertise/fusrap-IAAAP.html**

16MAY11

Example of Fact Sheet (Continued)

U.S. Army Corps of Engineers
St. Louis District

Summary of FUSRAP Activities at the

IOWA ARMY AMMUNITIONS PLANT

PROPOSED PLAN

"Gateway to Excellence"

The U.S. Army Corps of Engineers (USACE), St. Louis District, is conducting a cleanup program at areas formerly used by the Atomic Energy Commission at the Iowa Army Ammunition Plant (IAAAP). This program is being carried out under the Formerly Utilized Sites Remedial Action Program (FUSRAP) which authorizes USACE to address contamination resulting from the Nation's early atomic weapons program. The IAAAP site contains soils and structures primarily contaminated with depleted uranium as a result of activities performed by the Atomic Energy Commission from the 1947 until the 1975.

The USACE issued a Proposed Plan, summarizing cleanup alternatives on April 22, 2011. The Proposed Plan identifies Soil Alternative 4, Excavation of Contaminated Soil with Physical Treatment and Off-Site Disposal, and Structures Alternative 3, Decontamination/ Replacement of Structures, as the USACE's preferred remedy for the FUSRAP areas.

Public comment and regulatory review will help determine the final remedy selected for the areas. The USACE will respond to all significant comments in the IAAAP FUSRAP Record of Decision, which will identify the final remedy for the site based in part upon public comments received during the 30-day review period (which ends May 22, 2011.)

The USACE encourages private citizens to participate fully in the cleanup program.

To learn more about the IAAAP FUSRAP areas or to inquire about public involvement opportunities, call

314.260.3905

or write

FUSRAP Project Office, St. Louis District, Corps of Engineers Office 8945 Latty Avenue
Berkeley, MO 63134

BACKGROUND

The Iowa Army Ammunition Plant (IAAAP) is an active, government-owned, contractor-operated facility that occupies approximately 19,000 acres in Des Moines County near Middletown, Iowa. Less than one-third of the IAAAP property is occupied by active or formerly active munitions production or storage facilities. The current and expected future land use of the IAAAP property is industrial/military.

From 1947 to 1975, portions of the IAAAP facility were under Atomic Energy Commission (AEC) control for weapon-assembly operations. These portions of the IAAAP are now called Formerly Utilized Sites Remedial Action Program (FUSRAP) areas. In March 2000, after performing historical research at the IAAAP, investigators determined that some of the FUSRAP areas may contain contamination resulting from AEC activities and warranted additional investigation. These areas were the structures at Line 1, the Firing Sites Area, Yard C, Yard G, Yard L areas surrounding Warehouses L-37-1, L-37-2 and L-37-3, and Warehouse 3-01. That year, the USACE began investigation and characterization of soil and building contamination.

A Remedial Investigation Report, which was issued in October 2008, identified the existence of unacceptable risk at the structures at Line 1, the Firing Sites Area, Yard C, and Yard G. These areas were subsequently addressed by the Feasibility Report.

In accordance with the Comprehensive Environmental Response, Compensation, and Liability Act, the USACE issued a Proposed Plan describing the preferred remedy for the FUSRAP areas. The Proposed Plan provides background information and summarizes the four alternatives for soil and three alternatives for structures as identified in the Feasibility Study. The Proposed Plan also presents the USACE's rationale for its preferred remedies. The preferred alternatives can change in response to public comment or the development of new information.

Example of Fact Sheet

Cleanup Alternatives for Soil:

- Alternative 1: No Action for Soil (Cost: $0)
- Alternative 2: Land Use Controls for Soil (Estimated Cost: $2.3 million)
- Alternative 3: Excavation of DU-Contaminated Soil with Off-Site Disposal (Estimated Cost: $50.4 million)
- **Alternative 4:** Excavation of DU-Contaminated Soil with Physical Treatment and Off-Site Disposal (Estimated Cost: $45.2 million)

Cleanup Alternatives for Structures:

- Alternative S1: No Action for Structures (Cost: $0)
- Alternative S2: Land Use Controls for Structures (Estimated Cost: $286,000)
- **Alternative S3:** Decontamination/Replacement of Structures (Estimated Cost: $103,000)

THE PREFERRED ALTERNATIVES

The alternatives are discussed and evaluated in detail in the Feasibility Study for the FUSRAP areas. Based on currently available information, the USACE prefers **Soil Alternative 4, Excavation of Contaminated Soil with Physical Treatment and Off-Site Disposal,** and **Structures Alternative S3, Decontamination/ Replacement of Structures**. These alternatives protect human health and the environment and provide the best balance of effectiveness, cost, and implementability.

The preferred alternative for soil, Alternative 4, includes removal and physical treatment of depleted uranium-contaminated soil to reduce the volume of soil requiring off-site disposal. Physical treatment includes soil sorting and radiological scanning. Soil exceeding the remediation goal will be transported to a properly permitted off-site disposal facility.

The preferred alternative for structures, Alternative S3, includes the decontamination of one structural component (a steel grate) and the replacement of another component (air filters) at Line 1.

PUBLIC PARTICIPATION

The USACE encourages public input to select one cleanup alternative each for soil and structures in the FUSRAP areas. Public input is needed to ensure the remedy selected meets the needs of the local community and is an effective solution to the problem. The final remedy for soil and structures will not be selected until after full consideration of all public and government agency comments. The final remedy will be documented in a Record of Decision for the FUSRAP areas at the IAAAP. The public is encouraged to review documents contained in the Administrative Record File for the FUSRAP areas of the IAAAP.

Written comments may be submitted to the USACE, at any time during the 30-day period. Oral comments will be recorded during the May 17, 2011, public meeting. The USACE will respond to all significant comments and will consider these comments when working with the EPA to select a final remedy.

The entire Proposed Plan may be read at:
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210 Court St, Burlington, IA
or online at
www.mvs.usace.army.mil/eng-con/expertise/fusrap-IAAAP.html

10MAY11

Example of Fact Sheet (Continued)

WHAT IS DEPLEATED URANIUM?

U.S. Army Corps of Engineers
St. Louis District

Uranium is one of the most common radioactive elements. You can find it in soil anywhere in the United States.

Uranium ore is mined and then processed. Processing separates the highly radioactive isotope (uranium-235) so it can be used for nuclear power and weapons. The remaining uranium is called **depleted uranium** (DU). DU is less radioactive than natural uranium. DU is still thought to be related to health problems and needs to be managed carefully.

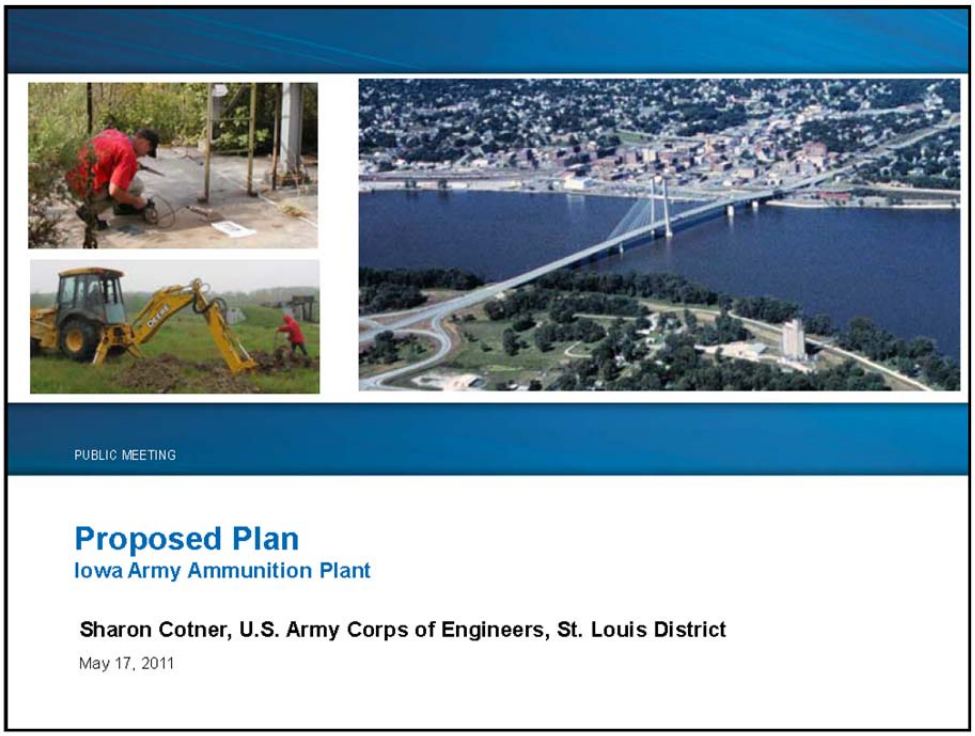
At the Iowa Army Ammunition Plant, the Atomic Energy Commission used DU in weapons testing in the 1960s and 1970s. Some fragments of DU can be found in the soil today.

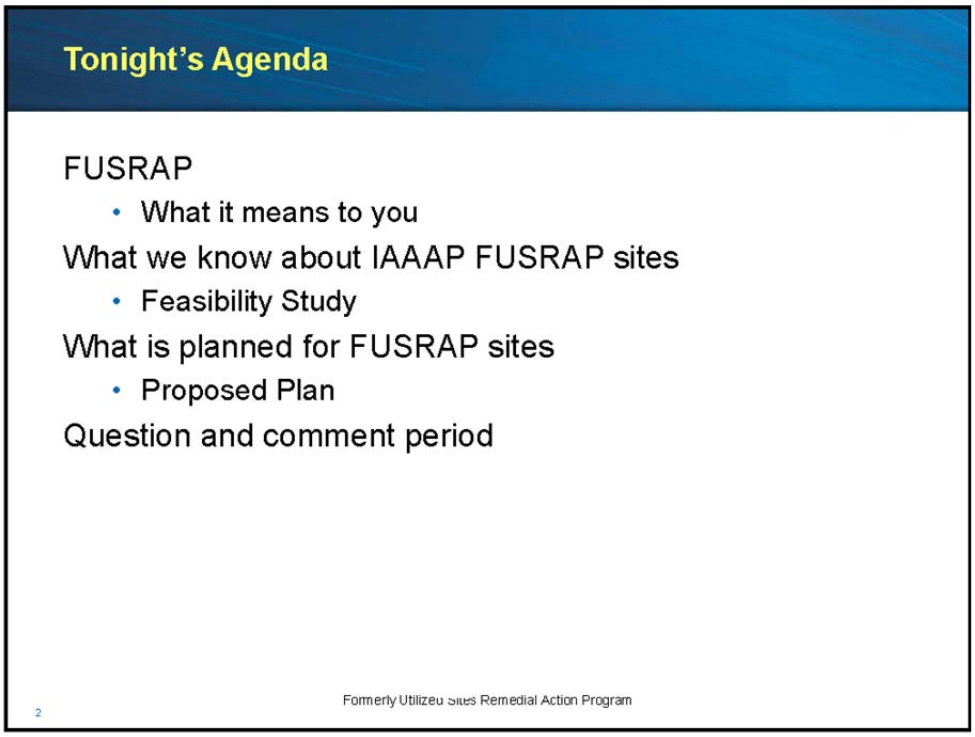
The Proposed Plan describes U.S. Army Corps of Engineers' the preferred remedy for DU contamination at IAAAP.

A scientist used radiological equipment to find depleated uranium.

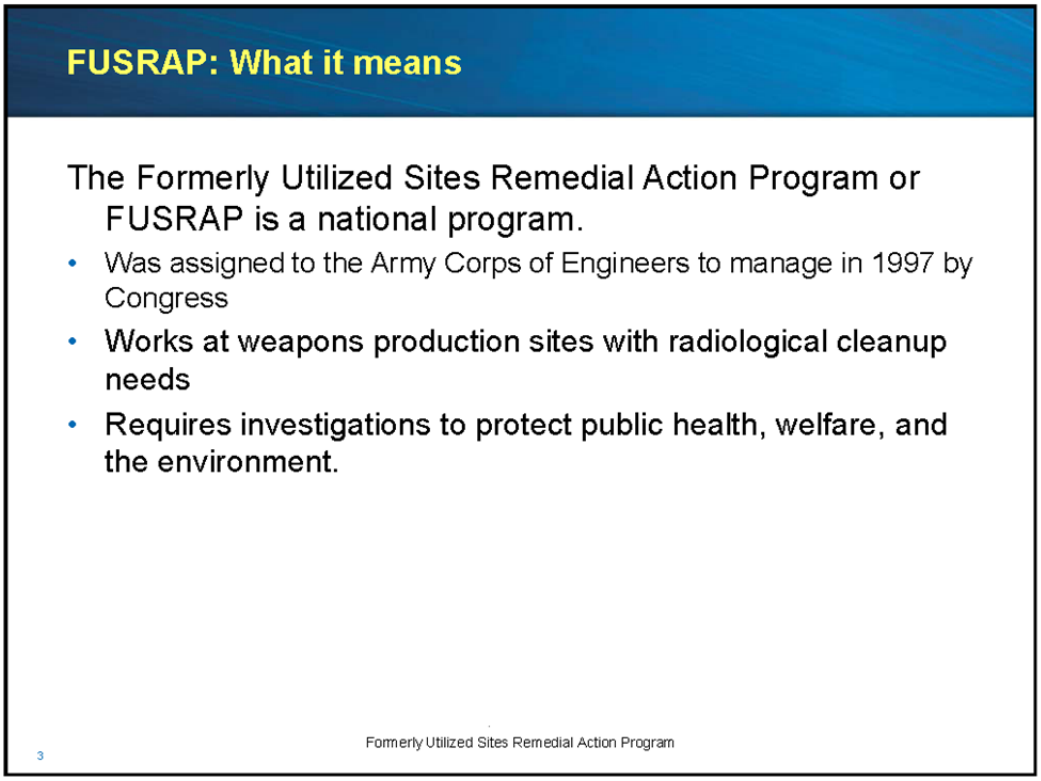
This fragment of depleted uranium was found at Firing Site 12.

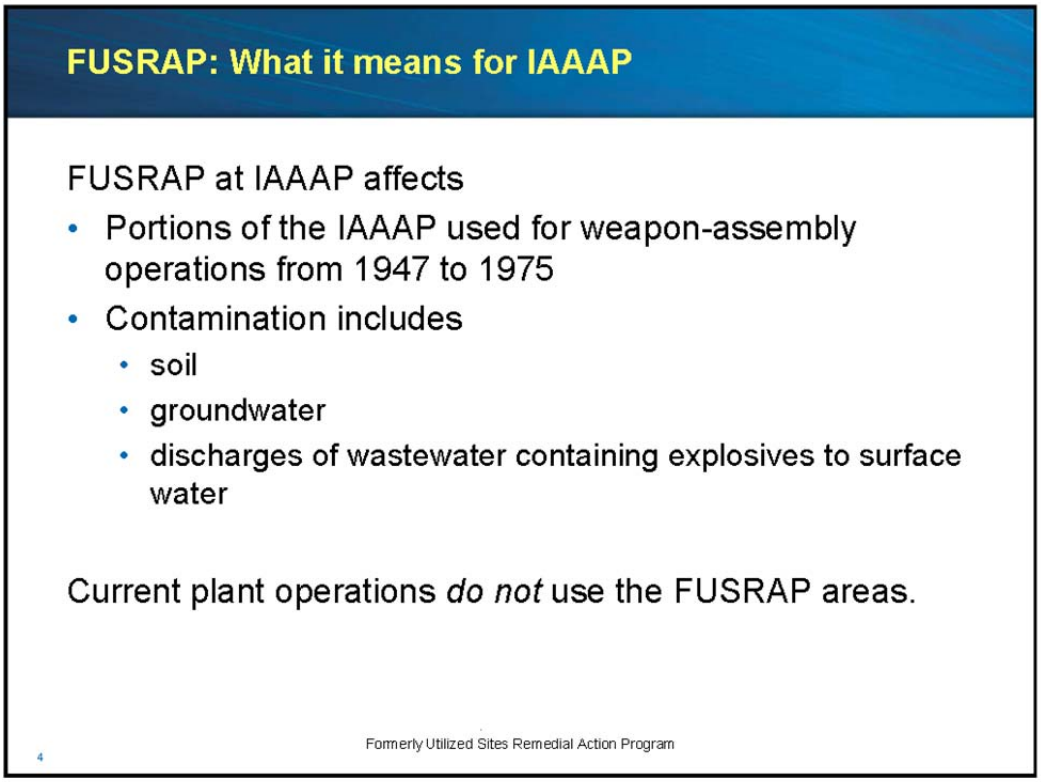
Example of Poster Used in Public Meeting





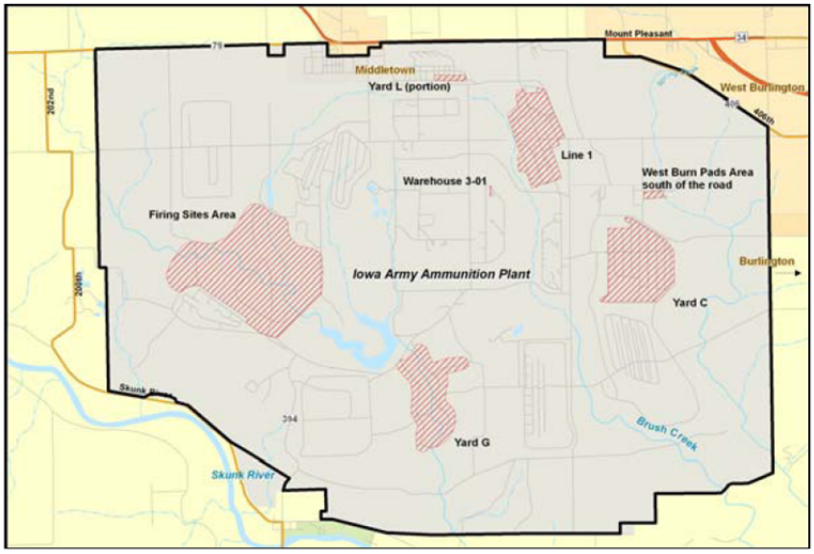
Example of Presentation Slides from Public Meeting





Example of Presentation Slides from Public Meeting (Continued)

Map of the FUSRAP areas at IAAAP



Formerly Utilized Sites Remedial Action Program

5

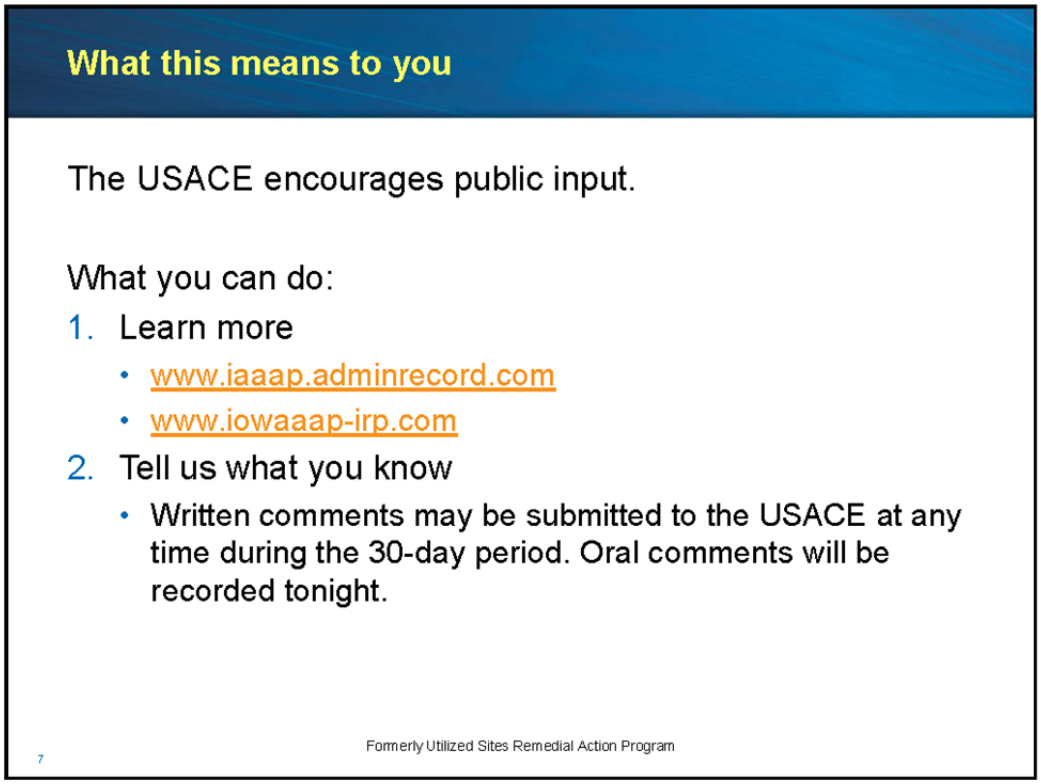
Where we are now

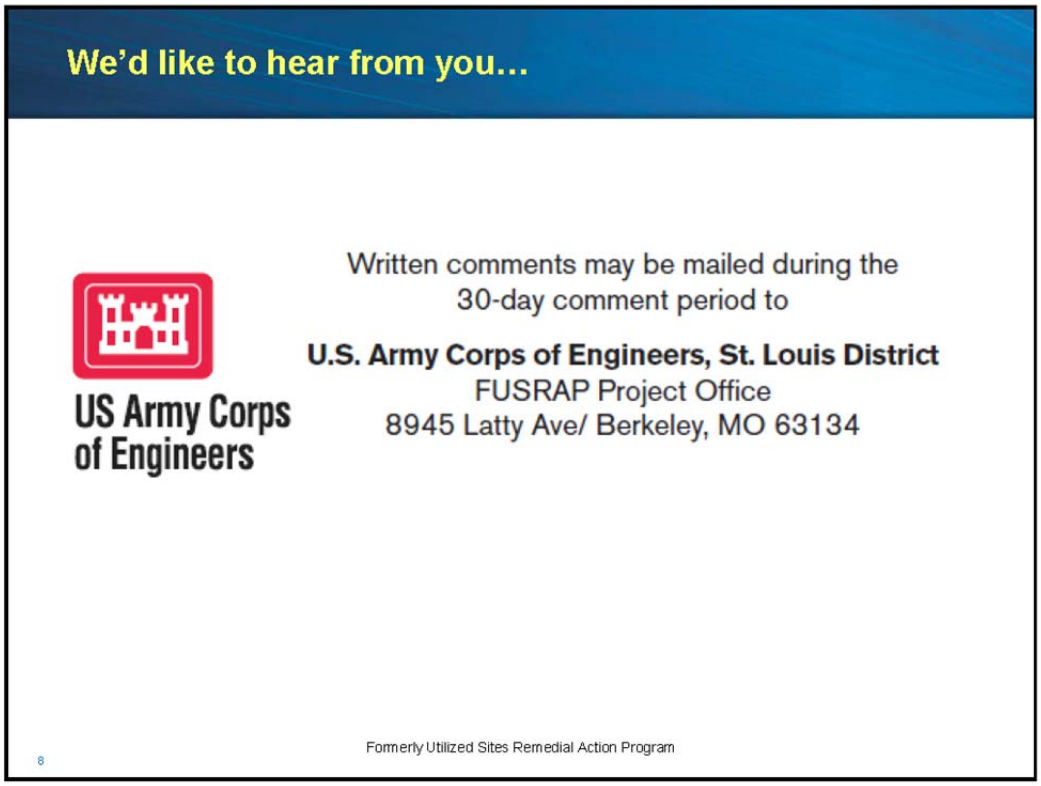
• September 2006	Federal Facility Agreement 30-day public comment period
• 2000 to 2007	Soil, sediment, buildings studied
• 2008	Remedial Investigation Report
• 2008 to present	Human health dose and risks calculated
• April 2011	Feasibility Study and Proposed Plan 30-day public comment period ends May 21, 2011
• Later this year	Record of Decision

Formerly Utilized Sites Remedial Action Program

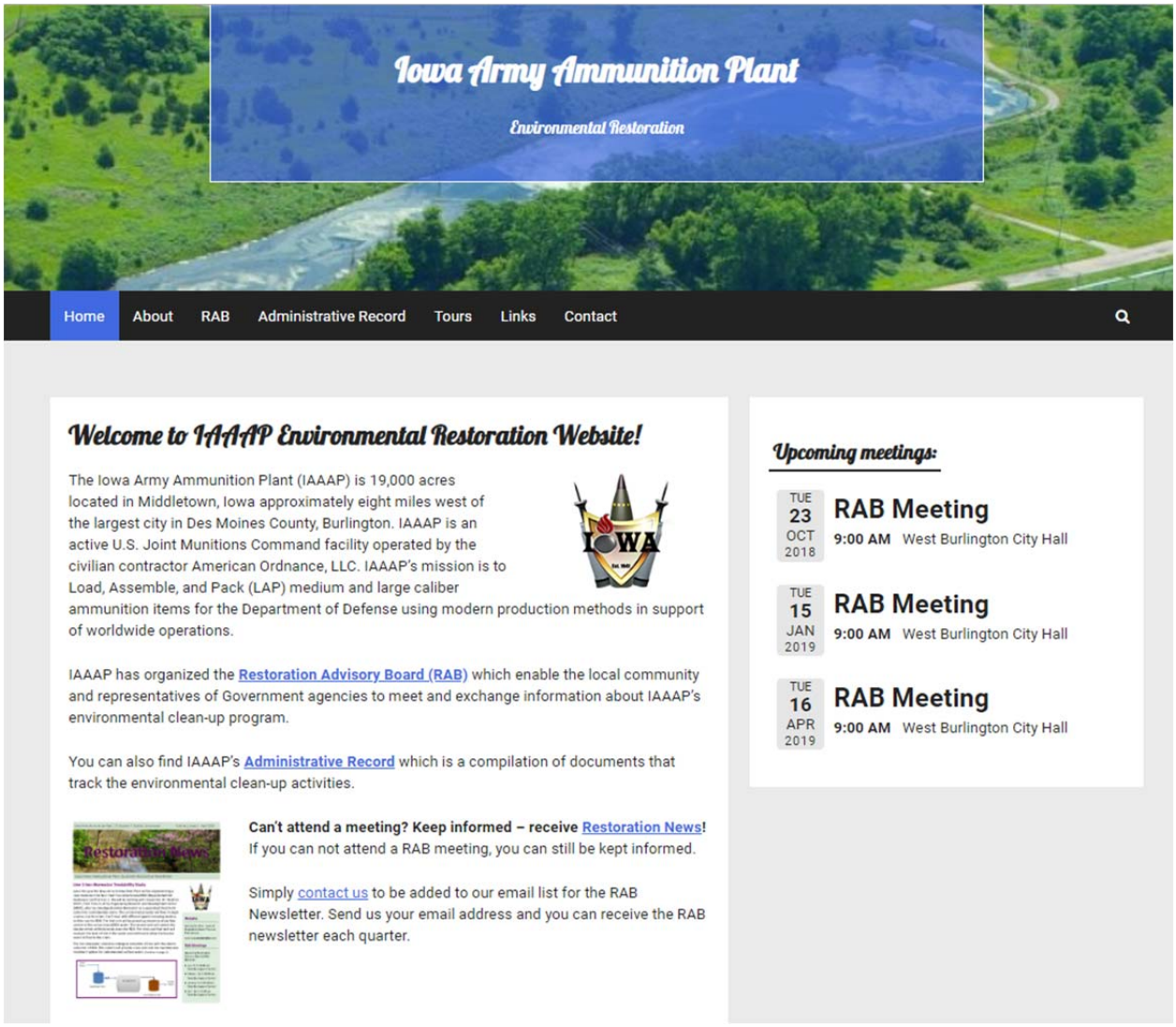
6

Example of Presentation Slides from Public Meeting (Continued)

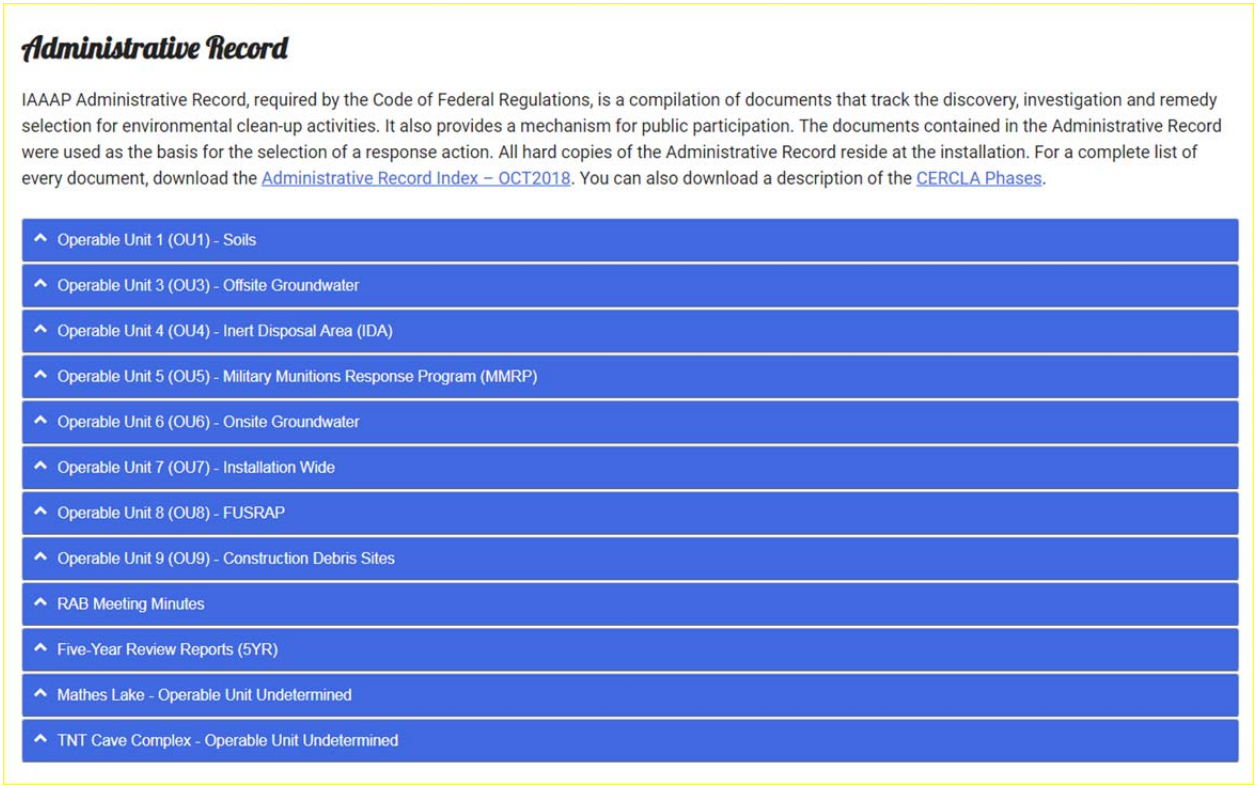




Example of Presentation Slides from Public Meeting (Continued)



Example of IAAAP Environmental Restoration Webpage Content



Example of IAAAP Environmental Restoration Webpage Content (Continued)