

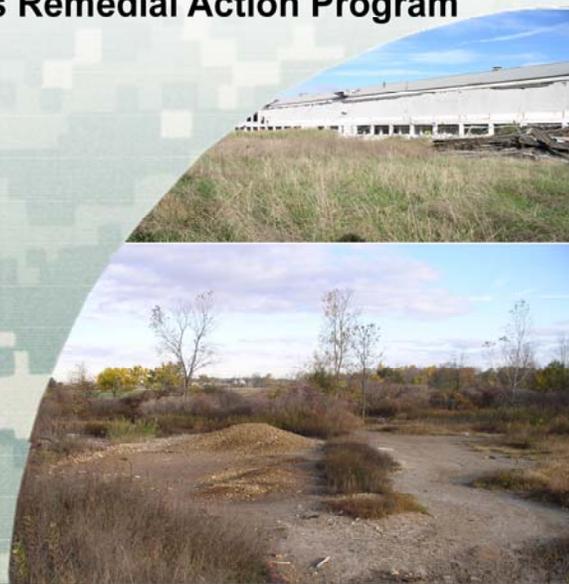
Luckey Site Update

Formerly Utilized Sites Remedial Action Program
(FUSRAP)

Luckey, Ohio
July 25, 2012



US Army Corps of Engineers
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Good evening everyone. Thank you for coming to our information session for the Luckey Site. Please make sure you have a handout package and take your seats. My name is Duane Lenhardt and I am the U.S. Army Corps of Engineers (Corps) Project Manager for the Luckey Site.

Before I review the agenda for tonight I would like to introduce you to the project team: John Busse, Environmental Project Management Team Leader; David Frothingham, Environmental Engineering Team Leader; Jim Stachowski, Project Engineer; Roseanne Weidner, Industrial Hygienist; and Arleen Kreuzsch and Natalie Watson from our Outreach Team.

Agenda

- **Luckey Site Status (6:15 – 6:45 pm)**
 - ▶ Site history
 - ▶ Contaminated areas at the site
 - ▶ Anticipated remedial action
 - ▶ Ongoing Corps activities
 - ▶ Upcoming Corps activities
- **Questions/Comments (6:45 – 7:30 pm)**
- **Individual Discussions (7:30 – 8:00 pm)**



Tonight's presentation will provide information about the status of the Luckey Site and about ongoing and future Corps activities.

Our agenda includes:

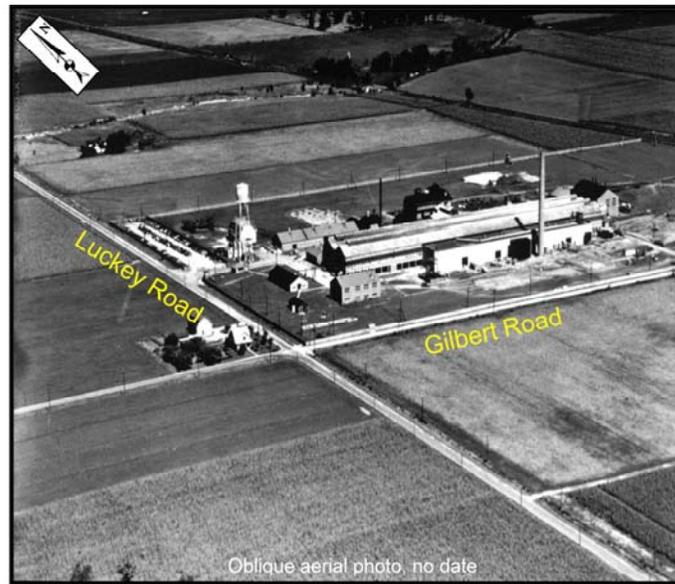
- A brief review of site history
- A brief review of the extent of contaminated soils at the site
- A discussion of the anticipated remedial action
- An overview of ongoing Corps activities
- An overview of upcoming Corps activities

After the presentation, we will have an open session to address any questions or comments that you might have.

We will also be available for individual discussions at the poster board areas at the end of the question/comment period.

I will now turn the presentation over to Jim Stachowski.

Luckey Site History



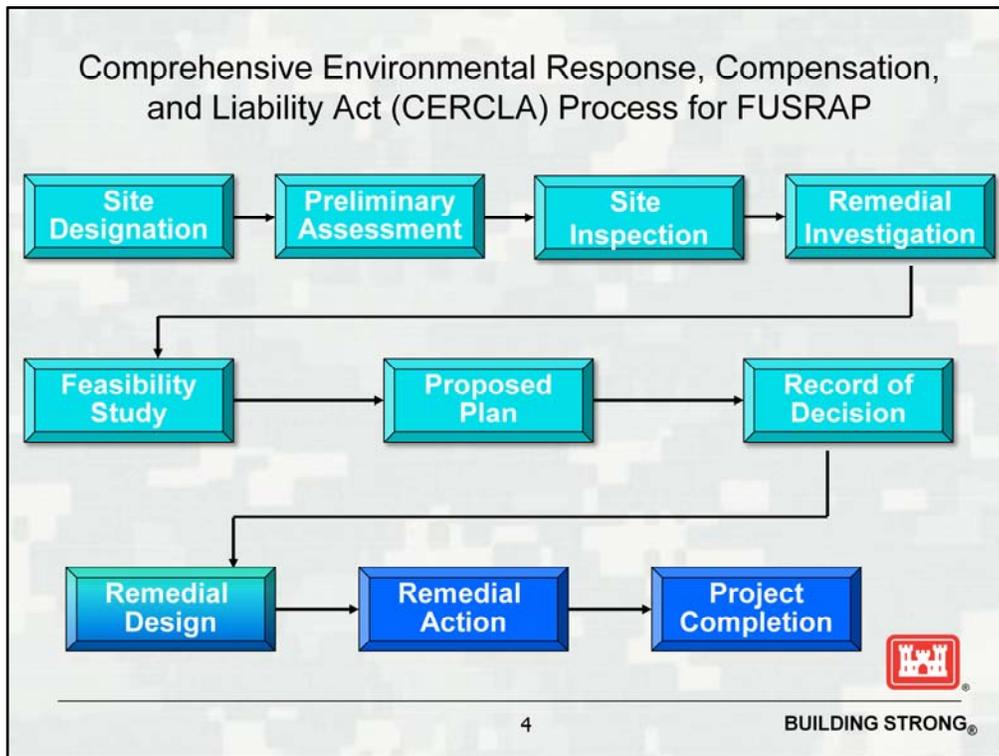
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The Luckey Site is located at the corner of Luckey Road and Gilbert Road, just north of the Village of Luckey. The site encompasses approximately 40 acres and is currently vacant. Most of the original buildings are still present although a few have been demolished. The site is surrounded by farm land and private residences.

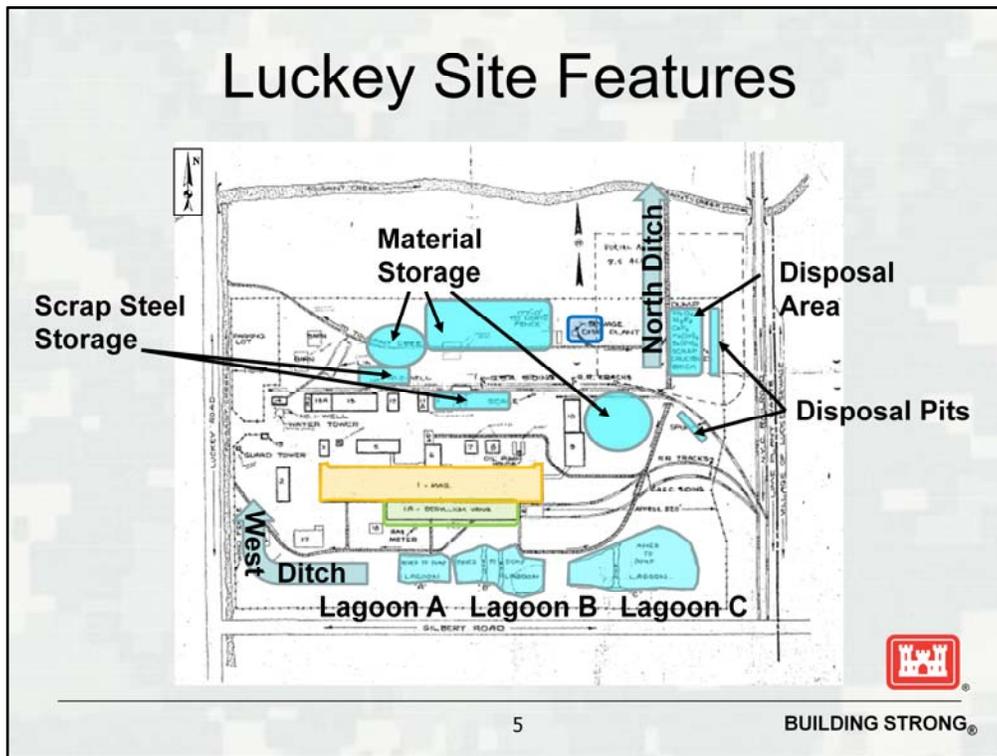
This slide provides a low altitude oblique aerial photo of the site during manufacturing operations.

- In 1942, a magnesium production facility was constructed at the Luckey Site on land purchased by the Defense Plant Corporation. The facility was operated for the Federal Government by National Lead during World War II and was closed in 1945. In 1949, a beryllium production facility was constructed at the site by the Atomic Energy Commission (AEC). The plant was operated by Brush Beryllium for the Federal Government from 1949 to 1958 and was closed in 1960.
- In 1952, radiologically contaminated scrap steel was brought to the site to be used in magnesium production, which did not occur.
- The Formerly Utilized Sites Remedial Action Program (FUSRAP) was authorized by Congress in 1974 to clean up sites throughout the country that participated in AEC activities. The Luckey Site was designated as a FUSRAP site in 1992.



The Corps is required to follow the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process when investigating and cleaning up FUSRAP sites. It consists of a series of steps that build upon one another. The process starts with a preliminary assessment followed, if necessary, by further investigation and studies leading to a remedial design and cleanup. The Lucky Site is currently in the Remedial Design phase. Once Remedial Design is complete, the next step is the Remedial Action with the excavation of contaminated soils from the Lucky Site.

- The Corps signed a Record of Decision for soils in 2006 and a Record of Decision for groundwater in 2008.
- The Record of Decision for soils determined that soils would be cleaned up to agricultural levels, which are the most stringent of the land-use scenarios used to develop cleanup goals. The contaminants of concern in soil consist of beryllium, lead, and radiological elements (radium, thorium, and uranium). Soil remediation will be accomplished by excavating contaminated soils from the site and disposing of them in an appropriate off-site facility.
- The Record of Decision for groundwater established beryllium, lead, and uranium as contaminants of concern in localized areas of the site. Once contaminated soils are removed from the site, concentrations of these contaminants in groundwater will decrease naturally in the subsurface. Currently, groundwater is sampled annually. Sampling frequency will increase when remediation begins to ensure that our actions remain protective of human health and the environment.



This figure shows the Brush Beryllium Site in 1956, which is approximately 40 acres.

The main production building is shown in orange. The production annex building is located to the south and is shown in green. Beryllium processing activities occurred in this building. Liquid waste streams from the processing operations were discharged to three lagoons that were located south of the buildings. The lagoons were between 1 to 6 feet deep and connected to the production annex via drain lines.

- Lagoon A received a black colored sludge.
- Lagoon B was constructed in two stages and received a gray colored sludge from processing of beryl ore.
- Lagoon C was constructed in two stages and received light brown sludges from the purification of beryllium hydroxide.

A sewage treatment plant was located north of the main manufacturing buildings and is shown in blue. The plant received only sanitary waste, not process wastes.

Water from the lagoons was discharged to Toussaint Creek. The primary drainage features on site are identified as the north ditch and the west ditch.

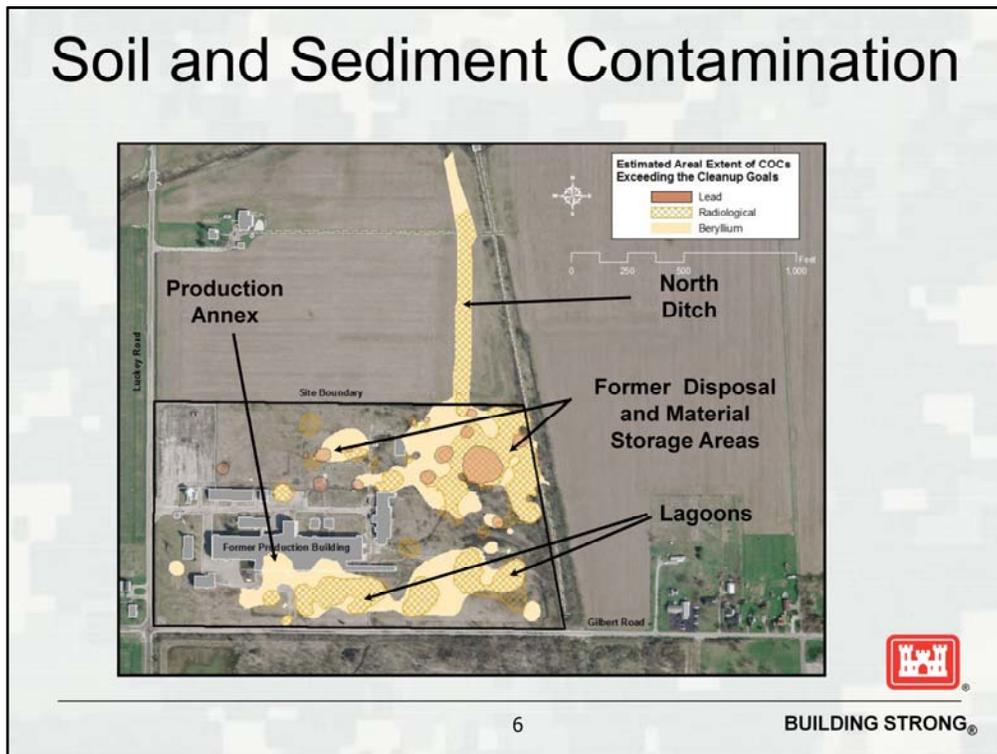
Two pits were used for the disposal of cracked graphite crucibles that may have contained minor amounts of beryllium. The pits were reportedly dug to a depth of about 6 feet and were placed in native clay soils.

At plant closing, a disposal area for lagoon sludges was constructed in the northeast corner of the site by Brush Beryllium. The disposal area was about 2 acres in size and 2 feet deep.

Scrap steel from another AEC facility was stored north of the main buildings alongside railroad tracks. This material was not used and ultimately removed from the site.

Other material storage areas located on the site, as observed from historical aerial photographs, were located north and east of the main buildings, adjacent to railroad tracks.

Soil and Sediment Contamination



This figure shows the extent of soil and sediment at the site that are contaminated with beryllium, lead, and radioactive elements (thorium, radium, and uranium). The yellow colored areas represent beryllium contaminated soils, the hatched areas represent soils contaminated with radioactive elements, and the brown colored areas represent soils contaminated with lead.

Contaminated areas include:

- Lagoons A, B, and C
- Former disposal areas and material storage areas in northeastern and northern sections of the site
- North ditch (an off-site area)
- Beneath the former production annex building

The figure reveals that the extent of lead and radiologically contaminated soil at the site is primarily bounded by beryllium contaminated soil. In addition, the depths of lead and radiologically contaminated soils are generally less than those for beryllium contaminated soils. These results indicate:

- The volume of lead and radiologically contaminated soils is less than the volume of beryllium contaminated soils
- The extent of the future remedial action will primarily be driven by beryllium contaminated soils

Anticipated Remedial Action Activities



- Sampling and analysis beneath the buildings
- Site management and security
- Excavation and off-site disposal of contaminated soils
- Compliance surveying and sampling
- Backfilling and site restoration



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The anticipated remedial action involves excavation and off-site disposal of FUSRAP contaminated soils. Major activities associated with the remedial action will include:

- Sampling and analysis of soils from beneath the buildings to determine if soils contaminated with FUSRAP materials are present in these areas
- Management and security of the site during the remedial action
- Excavation of soils contaminated with FUSRAP materials from delineated areas with off-site disposal at a permitted facility
- Compliance surveying and sampling
- Backfilling and site restoration

Remediation will be performed by a qualified contractor that is selected by the Corps. Oversight of the remedial action will be performed by the Corps.

Remediation Criteria

- Public/worker safety and preventing the spread of contamination
 - ▶ Transportation of contaminated soils
 - ▶ Treated water discharged from the site
 - ▶ Air quality at the site
- Backfill placed in the excavations

Consultation with state and county regulatory agencies



The Corps will establish criteria that the contractor will be required to meet during the remedial action, which consist of:

- Those established to protect public/worker health and safety and to prevent the spread of contamination. Included are:
 - Transportation of contaminated soils to the disposal facility
 - The quality of water from active work areas that can be discharged from the site
 - Air quality at the perimeter of the site and active excavation areas
- Criteria will also be established for the type and quality of backfill that can be placed in the excavations

State and county regulatory agencies, where appropriate, will be consulted during the development of backfill, water, and air quality criteria.

Remedial Action Work Plans

- Quality Control
- Site Operations
- Accident Prevention/Health and Safety
- Sampling and Analysis
- Regulatory Compliance
- Air Monitoring
- Water Management
- Waste Transportation and Disposal
- Backfill and Site Restoration



A significant amount of planning will be required prior to the start of the soil remedial action. Prior to working at the site, the contractor will be required to prepare documents that describe how the work will be performed. These documents are identified on the slide and will address issues of quality control, health and safety, security, monitoring, sampling, and analysis. The Corps will review these documents and site work will not be started until they are approved. The plans will also be reviewed by the Ohio EPA and final copies will be posted on the Corps website for public access.

Air Monitoring



Air Monitoring Station

- Air Monitoring Plan
- Alert and action levels established
- Contingent measures identified



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The contractor will be required to prepare a detailed plan that describes the manner in which air quality will be monitored at the site and engineering controls that will be implemented to prevent exceedances of established air quality limits. The plan will identify monitoring locations and methods, which will include:

- Active work areas and the site perimeter
 - Monitoring for (at a minimum) beryllium, lead, particulates (i.e. dust) and radionuclides
 - Real-time monitoring and the collection of air samples for laboratory analysis
 - Meteorological monitoring (e.g. wind speed and direction, temperature, humidity, barometric pressure, precipitation)
- Alert limits and action limits will be established that are based on the monitoring results
 - Contingent measures will be identified to prevent a release of contamination from the site

Transportation of Contaminated Materials



Loading Soil for Off-Site Transport



Rail Cars Used to Transport Soil

- Alternatives identified in Feasibility Study
- Truck and/or rail transportation methods
- Waste Transportation and Disposal Plan



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Transportation alternatives for soils contaminated with FUSRAP-related materials were evaluated in a Feasibility Study that was prepared by the Corps in 2003. This document is available on the Corps website and in the public repository. Truck and/or rail transportation methods were evaluated and routes from the site to the Interstate Highway System and locations for loading railcars were identified in the document.

The contractor will be required to prepare a detailed plan that describes the manner in which the excavated FUSRAP materials will be transported, managed, and disposed. The plan will identify:

- Disposal facilities to be used
- Transportation methods
- Transportation routes
- Decontamination methods
- Security and monitoring methods during transportation
- Documenting and tracking the waste shipments
- Emergency response procedures

Contamination Control Practices



Applying Dust
Suppression Agent



Mister for Dust
Suppression



Water Treatment System

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Controls will be implemented during the remedial action to prevent the spread of contamination from the site. Methods that could be used are illustrated on the slide and will include:

- Engineering controls to minimize particulates
- Collection and treatment of water from the active remediation areas prior to discharge from the site
- Decontamination and scanning of vehicles (i.e. trucks, railcars, and construction equipment) prior to leaving the site or transporting the contaminated soils

Ongoing and Future Corps Activities

- Remedial Action Preparations
 - ▶ Ongoing
 - Remedial Action Scope of Work
 - Search for qualified contractors
 - Site access arrangements
 - ▶ Future
 - Bidding and award of remedial action contract
 - Construction work plans and design documents
 - Mobilization and site work
- Ongoing Groundwater Monitoring



The Corps is making preparations for the remedial action.

Ongoing activities include:

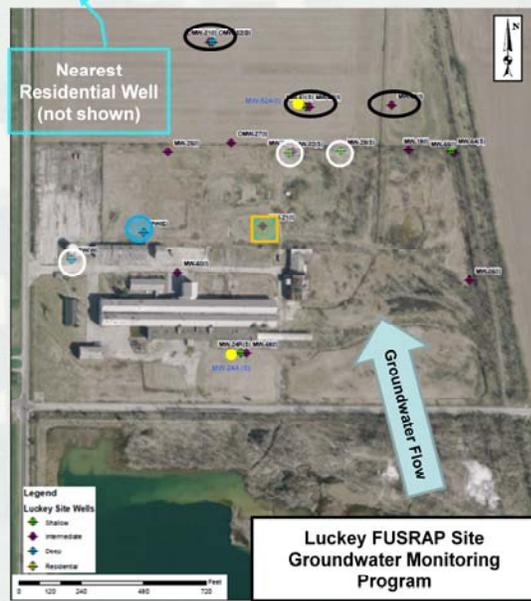
- Development of a remedial action scope of work
- Search for qualified contractors
- Making arrangements for site access to perform the remedial action

Planned future activities include:

- Bidding and award of a remedial action contract
- Preparing construction work plans and design documents (by the selected contractor)
- Mobilization and start of site work

The Corps is also monitoring groundwater annually and the results are posted on the Corps website.

Groundwater Monitoring



- Annual Sampling Program
- 17 to 23 Wells
- Beryllium, uranium, and lead
- Geochemical analytes
- Verifies minimal transport
- Current conditions protective of groundwater resources
- Groundwater remedy relies on soil Remedial Action

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We have been monitoring the extent of groundwater contamination since 2000. The Corps installed two additional wells this year to provide information in critical areas. 17 to 23 wells are monitored annually for beryllium, lead, uranium, and geochemical parameters.

- Groundwater flows north-northwest across the site.
- We do not see any changes in the extent of contamination; it is holding steady and behaving as we anticipated when we developed our groundwater model.
- Results from off-site well sampling activities indicate compliance with national safe drinking water standards. These results are available on the Corps' website.
 1. Wells located north of the site, in the path of groundwater flow, are not contaminated.
 2. The nearest residential well, located north of the site, is not contaminated by beryllium, lead, and radionuclides.
- Groundwater contamination occurs at isolated wells that are located within the site and a continuous plume of contamination is not present:
 1. Four wells contain beryllium at concentrations that exceed the U.S. Environmental Protection Agency (USEPA) maximum contaminant level (MCL) for drinking water. These wells are shown with white colored shading.
 2. Two wells contain lead at concentrations that exceed the USEPA MCL for drinking water. These wells are shown with blue colored shading.
 3. One well contains uranium at concentrations that exceed the USEPA MCL for drinking water. This well is shown with orange colored shading.

We will continue to monitor groundwater to ensure that human health is protected. Groundwater sampling for 2012 will be performed this year during the late summer to early autumn seasons.

Tentative Schedule

- December 2012 – Complete remedial action scope of work
- December 2012 – Finalize property access agreements
- To be determined – Issue remedial action request for proposal and award contract



The tentative schedule for remedial actions at the Luckey Site includes:

- December 2012 – Corps completes the Scope of Work for remedial action
- December 2012 – Corps finalizes property access agreements
- To be determined – Corps issues a Request for Proposal and awards a contract to perform the remedial action

The date that the request for proposal is issued will be based on available funding and the progress of other FUSRAP sites that are currently undergoing remediation. As work at these sites progresses, funding will become available for remedial activities at the Luckey Site.

Contact Us

- USACE Buffalo District FUSRAP Team

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Please feel free to visit our website or contact us via e-mail at the address on the slide. You can also reach us by mail or by telephone.

This concludes our slide presentation on the Luckey Site. Do you have any questions?