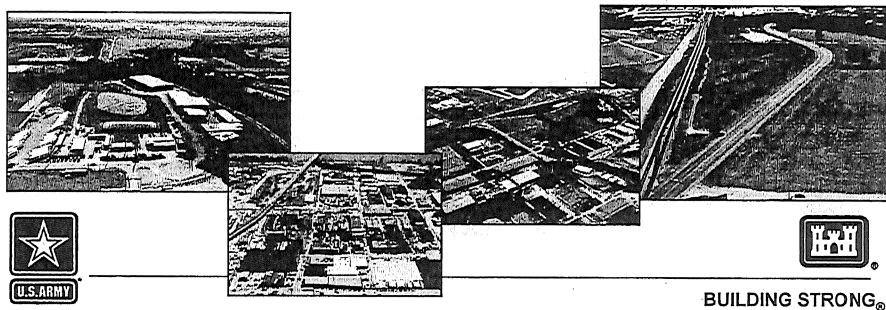


Formerly Utilized Sites Remedial Action Program

- The St. Louis Sites

FUSRAP



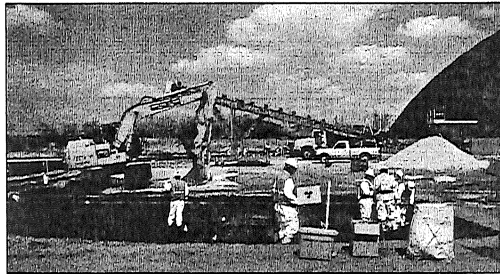
Agenda

- FUSRAP Overview
- St. Louis FUSRAP
 - ▶ St. Louis Downtown Site (SLDS)
 - ▶ North County Sites
 - Latty Ave. Properties
 - St. Louis Airport Site (SLAPS)
 - SLAPS Vicinity Properties
 - ▷ Coldwater Creek Sampling
- Remaining Sites – Volumes Removed
- Site-wide Activities
- Questions



FUSRAP Overview

- The Formerly Utilized Sites Remedial Action Program is an environmental remediation program that addresses radiological contamination generated by our nation's early atomic weapons program.
- FUSRAP execution transferred from Dept. of Energy to the U.S. Army Corps of Engineers in Oct 1997
- Corps inherited equipment, documents, and data from prior Dept. of Energy efforts
- Legally required to follow the CERCLA/NCP planning process
- Funded annually



FUSRAP Objectives:

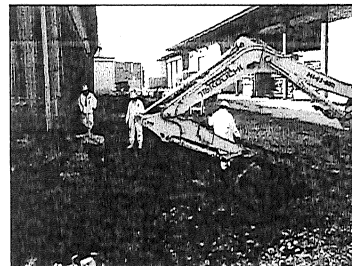
- Protect human health and the environment.
- Execute the approved alternative for cleaning up the radioactive contamination above health-based cleanup guidelines.
- Minimize adverse effects on area business operations.



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St. Louis FUSRAP

- Five sites under St. Louis FUSRAP
- Over 1 million cubic yards shipped
- Outstanding safety record
- On-site multi-disciplinary team
 - PM, Engineering, Construction, Counsel, Real Estate, Health Physicist, Chemist, Industrial Hygienist
 - On-site radiochemistry laboratory
- Community Relations
 - Community Involvement Plans
 - Biannual Newsletter
 - St. Louis District FUSRAP website (<http://bit.ly/FUSRAPstl>)
 - Administrative Records
 - Oversight Committee briefings (as requested)



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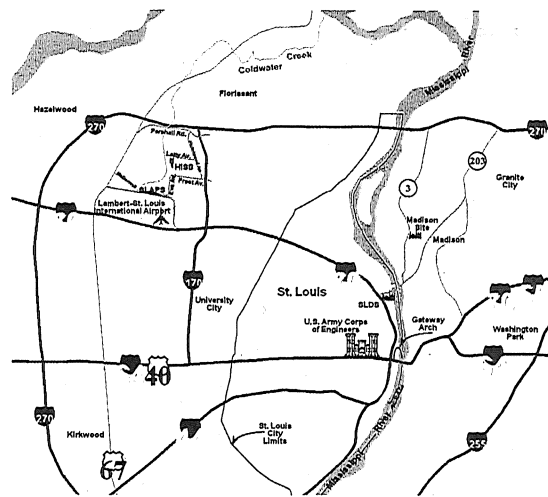
St. Louis FUSRAP Sites

- St. Louis Downtown Site
- North County Sites
 - St. Louis Airport Site
 - St. Louis Airport Site Vicinity Properties
 - Latty Avenue Properties
 - Hazelwood Interim Storage Site/Futura Coatings
 - Latty Avenue Vicinity Properties



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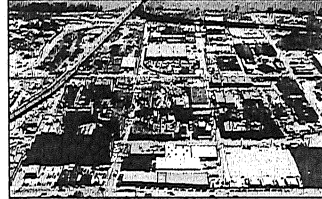
St. Louis Site Locations



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St. Louis Downtown Site

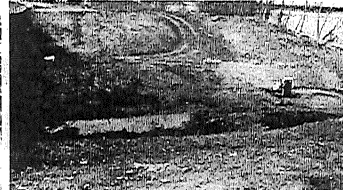
- City Property (East of Levee) – Completed remediation of Area 7.
- Kiesel Hall Street Property – Completed remediation of Kiesel Hall Street and adjacent Gunther Salt (former Morton Salt) and City Property.
- Plant 6, Building 101 Area – Mallinckrodt made Bldg. 101 Area available for remediation. Remedial activities are on-going.
- Shipping Totals (Licensed out-of-state disposal facility)
 - ▶ Fiscal Year (FY) 2014 = 28,264 cy, more than 230,000cy shipped through 2014
 - ▶ FY15 = 7,549 cy shipped to date
 - FY15 Goal = 14,000cy



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St. Louis Downtown Site (continued)

- Completed Final Status Survey Evaluations (FSSE) - 1 property released in FY14
 - ▶ FY15 Goal = release 4 properties
- Inaccessible Soils Operable Unit (ISOU) – Issued Record of Decision (ROD) for the ISOU Associated with the Group 1 Properties September 2014
 - ▶ ROD established that No Further Action is required on the Group 1 Properties since these properties present no unacceptable risk to human health or the environment.



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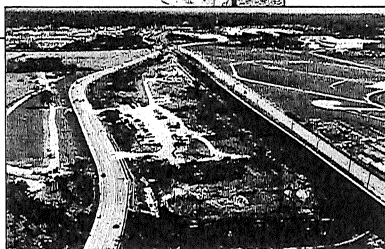
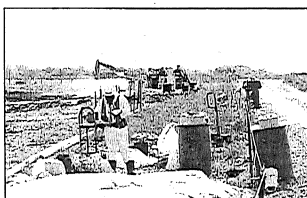
NORTH COUNTY

- St. Louis Airport Site
- St. Louis Airport Site Vicinity Properties
 - Includes Coldwater Creek
- Latty Avenue Properties
 - Hazelwood Interim Storage Site
 - Futura
 - Latty Avenue Vicinity Properties (8)
- Record of Decision – 2005
 - Excavate all accessible contaminated soil;
 - Dredge contaminated sediment from Coldwater Creek;
 - Remove contaminated soils from the surfaces of buildings and structures;
 - Dispose of soils and sediments at a properly permitted, off-site disposal facility;
 - Impose institutional controls (or use restrictions) on contaminated soils under roads, active rail lines, and other permanent structures; and
 - Monitor ground water and surface water.



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St. Louis Airport Site



- Extent of Contamination
 - 621,000 cy on 21.7-acre site
 - Adjacent to Lambert St. Louis International Airport
 - NPL site
 - Contaminated with Radium, Thorium and Uranium
- Environmental Documentation
 - North St. Louis County Sites Record of Decision Completed 2005
- Status of Response Action
 - RA Completed in 2007.
 - Transfer to DOE pending completion of North County ROD work.
- Post Remedial Action
 - Air and ground water monitoring implemented.



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Hazelwood Interim Storage Site/Latty Avenue Properties



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- Extent of Contamination
 - ▶ 227,000 cy on 11 acres
 - ▶ 1 mile north SLAPS
 - ▶ 2 NPL Sites (i.e. HISS and Futura Coatings) plus 8 Vicinity Properties
- Environmental Documentation
 - ▶ North St. Louis County Sites Record of Decision completed 2005.
- Status of Response Action
 - ▶ RA completed in 2013
 - ▶ Completed Final Status Documents
 - ▶ Preparing Institutional Controls on Futura

Latty Ave. Properties

- Institutional Controls Plan
 - ▶ The Institutional Controls (ICs) Plan ensures that any changes made to the property the public and the environment continue to be protected and contaminated material will be disposed in a licensed out-of-state disposal facility
 - ▶ The ICs Plan is in regulator review.
- Ground Water Monitoring
 - ▶ Purpose is to ensure that Coldwater creek is not being degraded
 - ▶ No evidence that contamination is moving into the creek
 - ▶ 8 Groundwater Monitoring Wells located on Latty
 - ▶ 2 Groundwater Monitoring Wells located between the Futura Bldgs and Coldwater Creek
 - ▶ Groundwater Monitoring Wells monitored since 1998 (USACE)



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SLAPS Vicinity Properties

- Ballfields (IA-9) – Being completed in phases
 - ▶ Phase 1 and Phase 2: Completed
 - ▶ Phase 2B: Remedial activities almost completed
 - ▶ Phase 3: Area adjacent to CWC will be initiated at a later date
- VPs 57 and 58 and adjacent Coldwater Creek Corridor – Initiated remedial activities as a Utility Support for MSD construction of their wet weather Storage Tank
- Continue to sample the Haul Routes (Latty Ave, Frost Ave and Pershall Road) Hazelwood Ave and Eva Ave remediated
- Properties Released
 - ▶ FY14 – 9 properties; FY15 – 8 properties; To date – 68 properties released (103 VPs)
- Shipping Total (Licensed out-of-state disposal facility)
 - ▶ FY14 – 4,145 cy; FY15 – Over 4,000 cy; To date over 60,000 cy



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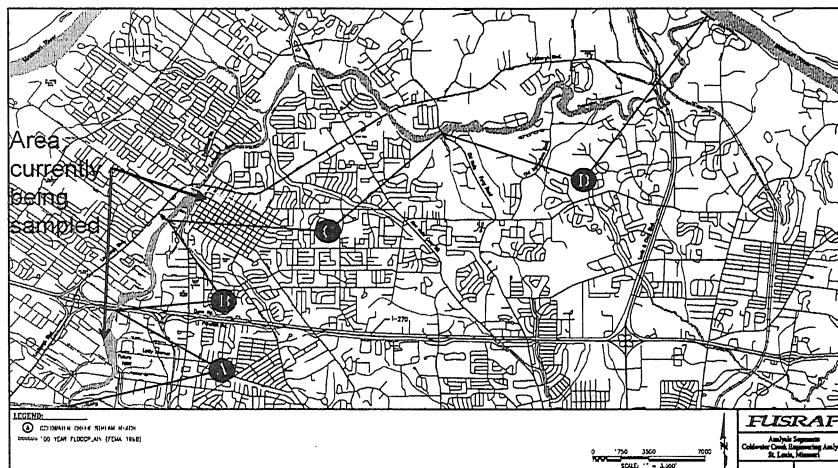
Coldwater Creek (SLAPS Vicinity Property)

- Approach
 - ▶ Eliminate MED/AEC contributors/sources first (i.e. SLAPS and Latty)
 - ▶ Work upstream to downstream (from the airport to the Missouri River)
 - ▶ Support utility excavations along creek.
- Scope
 - ▶ Follows the contamination based on known data and "contaminant transport model"
 - ▶ Investigate (survey and sample) and if necessary remediate
 - ▶ Follow Record of Decision goals
- Creek Subdivided into 4 Reaches



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Coldwater Creek (Current Sampling – Frost to St. Denis Bridge)



Coldwater Creek (SLAPS Vicinity Property)

- ▣ Past USACE Activities
 - ▶ Remediated around St. Denis Bridge in support of bridge replacement (1998)
 - Thorium 230 was the predominant radionuclide
 - Removed 450 cubic yards of material and debris to support construction
 - ▶ Remediated Creek between SLAPS and McDonnell Blvd (as part of SLAPS)
 - ▶ Remediated Creek tributary adjacent to HISS (as part of HISS)
 - ▶ Remediated MED/AEC contributors: SLAPS & HISS/Futura
 - ▶ Completed sampling Coldwater Creek from McDonnell Blvd to Frost Ave in FY13
 - ▶ Sample bi-annually (Airport to St. Denis Bridge)
 - Sediment and water at 10 locations including 2 new areas downstream from I-270/Pershall Road to St. Denis Bridge
 - Annual Environmental Monitoring Data/Analysis Report (EMDAR) has the data. (It is on the FUSRAP page of the St. Louis District website.)
 - No evidence that contamination is moving into the creek



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FUSRAP – Sample Collection Locations Coldwater Creek

- Historical research/planning
 - ▶ Review of historical processes used at SLDS, waste manifests, waste inventory, and other records of SLAPS and HISS
 - ▶ Inclusion of DOE (1982-1997) and USACE (1997-now) characterization history
- Sample location specifically focused on:
 - ▶ Areas of known physical movement (hauling and historic grading)
 - ▶ 10 year floodplain (based on previous experience on adjacent properties)
 - ▶ Topographical low-lying areas (current and historical)
 - ▶ Depositional areas within the creek (where the creek bends, around structures, etc.)
 - ▶ Mouths of tributaries (current and historical location)
 - ▶ Where the channel may have been realigned or improved
- In addition to the above targeted areas, an unbiased sampling grid is also used within the creek and floodplain for statistical coverage

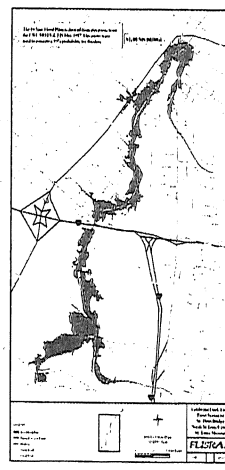
**Eliminates the potential for overlooking areas of public interest
and presents a scientific and justifiable sampling strategy for
current and historic locations of potential contamination**



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Sampling Methods Coldwater Creek

- Soil Samples
 - ▶ Use clean stainless steel augers to prevent cross-contamination
 - ▶ Target areas of interest (based on research and conceptual site model)
 - ▶ Locations chosen to cover entire 10-year flood plain (~125' spacing)
 - ▶ Sample depth varies from surface to 6 feet (deeper if native material is not encountered)
 - ▶ Collect bounding samples in areas that show contamination
 - ▶ May sample at locations beyond the 10 year flood plain if contamination is present
- Sediment Samples
 - ▶ Target areas of interest (based on research and conceptual site model)
 - ▶ Locations chosen to cover the channel of the creek
 - ▶ Sample depth varies based on depth to clay or creek bed



**Methodology will evaluate the extent of contamination, if
present, both vertically and horizontally, even if
contamination extends outside of the 10 year flood plain**



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Coldwater Creek Sampling

McDonnell Blvd Bridge to Frost Ave

- CWC Sampling - completed from the McDonnell Blvd Bridge to Frost Ave in FY13 (part of Reach A)
- CWC Sampling - Over 1,000 samples were collected
- Results
 - ▶ A few sample results showed the presence of contamination in 3 areas
- Remedial activities – Remedial designs to remove contamination are completed
 - ▶ Remediation will begin after the completion of VPs57/58 and adjacent west bank of CWC

later this year



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Coldwater Creek

(Current Sampling – Frost to St. Denis Bridge)

- CWC Sampling - Frost Ave to St. Denis Bridge ongoing; started in October 2013
- CWC Sampling
 - ▶ Locations have been identified
 - ▶ Over 4,000 samples have been collected to date
- Current Sampling – anticipate completion of sampling from Frost Avenue to St. Denis Bridge within the next few months
- Sampling North of I-270 - includes the creek and the 10-Year Flood Plain



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FY15 Activities Site Wide

- Funding – Funded by Congress; Currently working under a Continuing Resolution Authority.
- Newsletters – Two Newsletters issued in 2014 (January and July)
 - ▶ January 2015 Newsletter issued
 - ▶ Next newsletter will be issued in July 2015
 - ▶ Newsletters are on the website:
 - <http://bit.ly/FUSRAPstl>



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FY15 Activities Site Wide

- Community Involvement Plan – issued for regulator review; complete in 2015
- Five Year Review (Third) – Issued for regulator review
- Environmental Monitoring Data Analysis Reports – Calendar Year 2013 Report was issued in 2014. (Available on FUSRAP website.)
- Utility Support since Oct 1, 2014 (Fiscal Year 2015) – Response to utility companies and developers for areas that do not meet remediation goals.
 - ▶ Support intrusive work to protect the workers and the public
 - ▶ St Louis Downtown Site: 2
 - ▶ North County: 8



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For Questions and Information

- Website – Check the St. Louis District Website
<http://www.mvs.usace.army.mil> or <http://bit.ly/FUSRAPstl>
- Administrative Record – Documents are available for viewing at the following locations:
 - ▶ FUSRAP Office, 8945 Latty Ave., Berkeley, MO (314.260.3905)
 - ▶ Hours: 8am-4pm, Monday through Friday
 - ▶ St. Louis City Library, 1301 Olive Street, St. Louis, MO (314.241.2288)

Thank You for your attention!



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