FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM
OVERSIGHT AND MONITORING COOPERATIVE AGREEMENT

4th Quarter: October Through December 2016 Report
Missouri Department of Natural Resources

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COVER PHOTO: US Army Corps of Engineer’s (USACE) contractor obtains a sample at VP-40A in the railroad right-of-way near Futura for Missouri Department of Natural Resources (department). The department chose a location with the highest observed dose rate reading on a Ludlum Model 19A Dose Ratemeter to compare to analysis of samples taken from the area by others.
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History of the Formerly Utilized Sites Remedial Action Program (FUSRAP) Sites

The St. Louis Downtown Site (SLDS) processed uranium for the nation’s early atomic energy program. In 1946, the U.S. Department of Energy’s (DOE) predecessor agencies began utilizing the St. Louis Airport Site (SLAPS) as a storage area for radioactive wastes and processed residues, the majority of which originated at the SLDS. Methods of storage at the SLAPS included both uncovered bulk storage piles and materials containerized in drums. In 1966, a portion of the materials at the SLAPS was sold by the Atomic Energy Commission (AEC) and was shipped to a facility at 9200 Latty Avenue (Futura), where the majority of the material was dried and shipped to out-of-state processing facilities. Eighty-seven hundred tons of radioactively contaminated barium sulfate processed waste remaining at the Latty Avenue site were mixed with 39,000 tons of soil and were disposed at West Lake Landfill in 1973. (West Lake Landfill is being addressed separately from the FUSRAP.)

Processing, transportation, storage and management practices during the above-stated period led to contamination of the three major FUSRAP sites: SLDS, SLAPS, and the Hazelwood Interim Storage Site (HISS)/Futura. The latter two sites were placed on the National Priorities List (NPL) in 1989. In addition, approximately 78 contaminated vicinity properties have been identified as SLAPS Vicinity Properties (VPs).

On October 13, 1997, the Energy & Water Appropriations Bill transferred the responsibility for the remediation of FUSRAP properties from the US Department of Energy to the USACE. The total volume of contaminated soils, sediments and debris at St. Louis FUSRAP sites were estimated to have been about 1.1 million cubic yards. USACE has already excavated more soil than had been originally estimated.
## Status of Work Completed This Quarter by USACE

<table>
<thead>
<tr>
<th>MAJOR AREA</th>
<th>SPECIFIC SITES</th>
<th>WORK DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>North County (NC)</td>
<td>SLAPS VP’s</td>
<td>Sampling of Coldwater Creek between Frost and St. Denis Bridge continued and additional characterization sampling at Coldwater Creek vicinity properties also continued. Remediation of Duchesne Park continued during the quarter. The volume of soil shipped from the vicinity properties this quarter was about 3,241 yd³.</td>
</tr>
<tr>
<td>North County (NC)</td>
<td>HISS/Futura and Latty Avenue VP’s</td>
<td>Most remediation work on these properties has been completed; therefore, no soil or debris was shipped during the quarter. A long-term institutional controls plan for these properties is being developed by USACE.</td>
</tr>
<tr>
<td>Saint Louis Downtown Sites (SLDS)</td>
<td>SLDS and VP’s</td>
<td>Building 101 excavation at Plant 6 West Half was completed during the quarter. Work in the Plant 7W/700 Pad area continued. Destrehan Street excavation work began. Characterization and planning regarding former Plant 1 Building 17 continued. The volume of soil shipped from St. Louis Downtown Sites in this quarter was about 3,156 yd³.</td>
</tr>
<tr>
<td>Non-Site Specific</td>
<td></td>
<td>Nine utility support operations were undertaken by the USACE during the quarter. The total volume of soil and debris shipped this quarter for the entire St. Louis FUSRAP project was about 6,397 yd³. (For reference, about 36,835 yd³ of material was shipped from all St. Louis FUSRAP project sites during Federal Fiscal Year 2015.)</td>
</tr>
</tbody>
</table>
Work Performed by Department Personnel

DOCUMENT REVIEWS

The department’s Federal Facilities Section (FFS) provides technical review on major decision documents, work plans, pre-design investigation reports, remedial designs and post remedial action reports.

Comments on document content are submitted to the USACE for response and become part of the public record. Listed below are documents reviewed by the department during this quarter and documents previously reviewed, some resolution of comments is pending.


The department reviewed and commented on the draft document. The department recommended an electronic copy of the then-current plan with all attachments be sent for review along with any area-specific plans submitted for review under this general work plan. A comment was made requesting this plan be copied to DOE Office of Legacy Management. In addition, it was requested that USACE include a copy of the most recent Metropolitan St. Louis Sewer District discharge approval letter with the final document. The department also recommended adding information on the general approach used when areas might be flooded by the river.
OVERSIGHT COMMITTEE
The St. Louis Oversight Committee meets periodically to get updates from USACE and others on current remediation work, discuss the history of the sites, to be briefed on USACE future plans and to provide community feedback to USACE. The St. Louis Oversight Committee last held a public meeting on Feb. 17, 2016, 6-8 p.m., at the James Eagan Civic Center, 1 James J Eagan Drive, Florissant. The next public meeting of the committee has not yet been set. The current contact for the St. Louis Oversight Committee is Carl Chappell at (Cfchappell@sbcglobal.net).

USACE UPCOMING PUBLIC MEETING
USACE will discuss future plans and provide a briefing to the public on current FUSRAP sampling and remediation work on Feb. 16, 2017, at the Hazelwood Civic Center, 8969 Dunn Road, Hazelwood. This meeting is open to the general public. USACE, USACE contractors, the department, United States Environmental Protection Agency and the United States Agency for Toxic Substances and Disease Registry (ATSDR) will be available to answer questions after the USACE briefing. The main points of discussion will be planned remediation of Palm Drive area residences and sample results from areas along Coldwater Creek.

On Oct. 17, the department observed and obtained split sediment and surface water samples during USACE biannual sampling of Coldwater Creek.
SITE OBSERVATIONS

Field personnel conduct site visits to observe and document the status of remedial actions, environmental monitoring, contaminant migration prevention and pre-design investigations. USACE personnel are notified of findings and reports are filed for public record.

The following site visits were conducted on these dates during this quarter:

<table>
<thead>
<tr>
<th>SPECIFIC SITES</th>
<th>OCTOBER</th>
<th>NOVEMBER</th>
<th>DECEMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>North County Sites (HISS/Futura, SLAPS, and VP’s)</td>
<td>4, 6, 14, 17, 27</td>
<td>3, 23</td>
<td>12, 13</td>
</tr>
<tr>
<td>SLDS</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SAMPLING

Samples are obtained by department personnel and shipped to a contract laboratory for analysis. The purposes of sample collection include confirmation of results from remedial actions, storm water controls and treatment, and investigating locations of potential concern.

Department Samples

The department obtained a composite soil sample of a completed survey unit 5B at SLDS Plant &W/700 Pad on October 5. A split soil sample was obtained at a Seeger Property on October 6. Three split surface water samples and three split sediment samples were obtained from Coldwater Creek during USACE semi-annual sampling on October 17. Two soil samples were obtained at VP-40A in the railroad right-of-way near Futura on October 27. The samples have been analyzed; analytical results and reports for these samples are available upon request. These sample results have been shared with USACE and USACE’s contractor.

VP-40A near Futura, Railroad Right-of-Way Dose Rate Observations and Samples

The department measured dose rates at 20 areas to approximately delineate areas exhibiting higher rates than 20 micro R/hr on October 27. The department obtained samples at two depths in the approximate location exhibiting the highest observed dose rate for comparison with USACE sample results within the inaccessible profile of the railroad near Futura. The department’s results were consistent with USACE’s results for the area.
COMMUNITY RELATIONS

Department personnel are available for questions, requests for information or as a means of submitting comments and concerns. It is our goal to encourage community involvement and ensure that the concerns of the citizens of Missouri are addressed. Special requests regarding field oversight, research and presentations are welcome. Contact the Federal Facilities Section at (573) 751-3907 for assistance.

Release of Milky-White Paving Material to Coldwater Creek on November 30

The department’s local FUSRAP project staff monitored Pavement Solutions’ efforts to recover from a release of approximately 2,000 gallons of a liquid concrete additive that occurred after a truck hauling the product was involved in an accident near the intersection of Airport Cargo Road and James S. McDonnell Boulevard. The concrete additive spill was part of work being done at the airport, and therefore was not related to FUSRAP work. The goal of this monitoring was to identify any activities that could intrude upon potentially FUSRAP contaminated soil and obtain USACE support of intrusive activities, if any such activities occurred. The department performed partial gamma walkover scans of one area downstream of the US 67 bridge over Coldwater Creek during this surveillance. Gamma walkover results in this area were indistinguishable from background readings.

ATSDR COLDWATER CREEK PUBLIC HEALTH ASSESSMENT (PHA)

ATSDR is evaluating the public health implications of potential exposures to environmental contamination in and along Coldwater Creek. The purpose of the PHA is to evaluate environmental data and community health concerns to determine if exposure has occurred in the past, present, or future and evaluate potential impacts on public health. ATSDR met with area residents early in the process to better understand community health concerns and provide information on the PHA process. ATSDR will continue to keep residents apprised of future PHA activities. For more information about ATSDR’s Coldwater Creek PHA in St. Louis, community members can call 1-800-CDC-INFO (232-4636), email ColdwaterCreek@cdc.gov or visit http://www.atsdr.cdc.gov/sites/coldwater_creek/index.html. Details regarding future ATSDR public meetings will be announced when scheduled. ATSDR representatives are also available to discuss the PHA at community and FUSRAP public meetings.

REGULATOR COORDINATION MEETINGS

Personnel from EPA, USACE, and the department periodically meet in person and by conference call to discuss site status, document schedules, landowner assistance projects and other similar issues. These coordination meetings are beneficial, as they keep the parties informed of site status, allow for discussion of cleanup issues and provide coordination of agency activities as they relate to cleanup of the sites. Meetings were held on October 19, November 29, and December 12 during this quarter.
Site Activities This Quarter

USACE REMEDIAL ACTIONS

NORTH COUNTY

- Duchesne Park remediation continued.

- Characterization sampling of Coldwater Creek between Frost Avenue and St. Denis bridge continued.

- Characterization and sampling of businesses and residential areas adjoining Coldwater Creek continued during the quarter.

ST. LOUIS DOWNTOWN SITE

- Plant 6 (Mallinckrodt) excavation of soils underlying building 101 was completed during the quarter.

- Excavation of Destrahan Street began.

- Plant 7/700 Pad excavation began during the quarter.

- USACE continued characterizing and preparing remediation plans for Mallinckrodt Plant 1 Building 17.

Excavation of Plant 7W/700 Pad Area at SLDS continued during the quarter. The excavation pictured had been excavated, surveyed for final status and was being readied for backfill.
The department periodically inspects Coldwater Creek from Banshee Road to Fort Belle Fontaine for activities that may include excavation of potentially contaminated flood plain soil. Pictured above is airport authority activity noted as potentially impacting Coldwater Creek at Banshee Road. The department issues a report to USACE after each inspection.

ANTICIPATED USACE Tasks Next Quarter

**NORTH COUNTY**

- USACE characterization sampling of Coldwater Creek between Frost Avenue and St. Denis Bridge and residences along Coldwater Creek will continue.

- Characterization past St. Denis Bridge may continue.

- USACE Pershall Road characterization sampling may be completed. Banshee Road additional verification sampling may begin.

- USACE may begin excavation at Palm Drive Properties.

- USACE is expected to complete work at Duchesne Park in Florissant.

**ST. LOUIS DOWNTOWN SITE**

- Plans for remediation of Plant 1, Building 17 will be prepared.

- USACE Plant 6/Building 101 area restoration will continue and may be completed.

- Plant 7W/700 Pad area remediation will continue.

- Support of utility excavation activities at SLDS will continue.

- Additional sampling for a remedial investigation addendum may continue.

- Destrahan Street remediation will continue.
DOCUMENT REVIEWS

Review of the following documents and data are tentatively scheduled during the next quarter.

NORTH COUNTY

- Futura Environmental Covenant Draft
- Coldwater Creek Frost to St. Denis Pre-Design Investigation Reports
- Pre-Design Investigation Report VP40A Partial and Byassee Road Partial
- Pre-Design Investigation McDonnell Blvd.

ST. LOUIS DOWNTOWN SITE

- ESD for Kiesel Hall Street Area Expansion
- Remedial Design for Mallinckrodt Plant 1, Building 17
- Plant 7N/S Post Remedial Action Report

SITE OBSERVATIONS AND SAMPLING

The department’s on-going role in providing site observations and sampling investigations will continue as per previous quarters.

DEPARTMENT PROJECTS

Staff will continue to work on committees affiliated with long-term stewardship (also known as LTS) and groundwater.

LONG-TERM STEWARDSHIP

Long-term stewardship applies to sites and properties where long-term management of residual contaminated environmental media is necessary to protect human health and the environment over time. This generally includes the establishment and maintenance of physical and legal controls, implementation entities, authorities, accountability mechanisms, information and data management systems, and other resources. The need for long-term stewardship will exist for areas of inaccessible contamination at both the North St. Louis County and Downtown Properties located under roads, railroads, buildings and other similar structures deemed by the current owners to be vital or in-use. The need for long term stewardship will also exist for portions of the downtown site for which remediation goals are deemed suitable for industrial uses. Completion of the project is expected by 2021; this will be followed by a two-year transitional period to transfer responsibility from the USACE to the U.S. Department of Energy.
Financial Reporting

The department’s Hazardous Waste Program submits a financial report separate from this document. The report includes costs incurred during the reporting period with request for reimbursement forms.

Status of Work Completed This Quarter

* USACE Cooperative Agreement funds were not used for all of the staff listed as participating in this training, conference, or meeting;
** USACE Cooperative Agreement funds were used for a percentage of this training, conference, or meeting.

<table>
<thead>
<tr>
<th>TRAINING, CONFERENCE OR MEETING</th>
<th>DATES</th>
<th>DEPARTMENTAL STAFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Waste Program All-Staff</td>
<td>10/6</td>
<td>Alexander, Carey, Anderson *, **</td>
</tr>
<tr>
<td>Mandatory Diversity Training</td>
<td>10/19</td>
<td>Carey, Alexander, Moore **</td>
</tr>
<tr>
<td>Medical Monitoring and Respirator Fit Test</td>
<td>10/25</td>
<td>Carey</td>
</tr>
<tr>
<td>Preparatory Meeting for Communication Line SLDS</td>
<td>10/31</td>
<td>Carey</td>
</tr>
<tr>
<td>Coldwater Creek Intrusive Work Investigations</td>
<td>10/14, 11/3, 11/13, 12/31</td>
<td>Alexander, or Carey</td>
</tr>
<tr>
<td>Regulator Update Meetings</td>
<td>10/19, 11/29, 12/12</td>
<td>Carey, Anderson, Moore, Drake *, **</td>
</tr>
<tr>
<td>ATSDR-DNR-USACE Conference Call with Concerned Coldwater Creek Resident</td>
<td>12/7</td>
<td>Carey, Drake, Moore</td>
</tr>
<tr>
<td>Internal Unit Meeting</td>
<td>12/14</td>
<td>Carey, Drake, Moore, Anderson *</td>
</tr>
<tr>
<td>Mandatory Cyber Security Training</td>
<td>October, November, December</td>
<td>Carey, Alexander, Moore *, **</td>
</tr>
<tr>
<td>North County Status Meeting</td>
<td>12/20</td>
<td>Carey</td>
</tr>
</tbody>
</table>