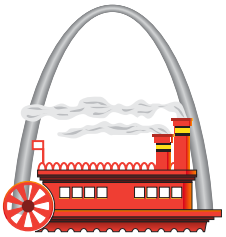
U.S. Army Corps of Engineers
St. Louis District

St. Louis Sites Fact Sheet

CLEANUP



"Gateway to Excellence"

The United States Army Corps of Engineers (USACE), St. Louis District, is conducting a radiological cleanup program for four Missouri sites (SLDS, SLAPS, SLAPS VPs, HISS). These sites contain soils contaminated with radium, thorium, and uranium as a result of activities associated with the Manhattan Engineer District/Atomic Energy Commission during the nation's early atomic program in the 1940s and 50s.

There are basic actions required to carry out a cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): sampling, remedy design, implementation, release, and ultimately final closeout. This fact sheet explains each of these actions and its purpose in the process.

The Corps of Engineers encourages private citizens to participate fully in the cleanup program.

To learn more about FUSRAP or to inquire about public involvement opportunities, contact the FUSRAP Project Office at (314) 260-3905 or write to the St. Louis District, Corps of Engineers, FUSRAP Project Office, 8945 Latty Avenue, Berkeley, Missouri 63134

While specific cleanup activities vary depending upon the final remedy selected, the basic process required to carry out a cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is similar. Unless the "no further action" remedy is selected for a site, the cleanup process typically includes sampling (or Pre-Design Investigation), design (or Remedial Design), implementation (or Remedial Action), release (or Post Remedial Action Report), and ultimately final closeout/five year reviews. Many of the actions described herein are typical of cleanup activities for the cleanup of the St. Louis FUSRAP Sites under CERCLA. Let's look at each of these in turn.

SAMPLING (PRE-DESIGN INVESTIGATION)

The cleanup process begins with sampling (referred to as the Pre-Design Investigation) to identify the potential problem areas. The Corps collects data, conducts interviews and researches the historical use of the site to identify these areas. Potentially impacted areas could be the result of material storage, waste processing activities, or migration via wind or storm-water runoff.

A radiological walkover, using an instrument that detects radioactivity, is then conducted. A technician scans the site to determine whether areas of elevated radiological activity exist. Based on the results from the walkover, soil samples are collected to define the concentration and limits of contamination within any elevated areas located during the walkover. Systematic samples are collected to document concentrations within portions of the area that do not have elevated levels of contamination. The results of these activities are documented in the Preliminary Design Investigation Report.

DESIGN (REMEDIAL DESIGN)

Based on the Pre-Design Investigation Report, the remedial design develops the engineering approach and procedures required to safely carry out the selected remedy presented in the Record of Decision. Draft copies of the remedial design are provided to the Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (MDNR) for review and comment. Once their comments have been addressed, the document is finalized and cleanup work can begin.

IMPLEMENTATION (REMEDIAL ACTION)

The remedial action implements the remedial design. The final remedy carried out at the site (for example capping, on-site disposal cell, treatment, or partial/complete excavation) is the one identified in the Record of Decision. Because each of these remedies may include excavation either as the remedy or a component of the remedy, this section will discuss the requirements of excavation as an example of how a remedial action is carried out.

The actual removal or excavation is composed of two parts: gross excavation and guided or "precision" excavation. Gross excavation uses a bulldozer or excavator to remove large volumes of contaminated soil to a predetermined depth. A radiation technician then walks over the hole with radiological detection equipment to identify hot spots (or isolated areas where contaminated soils remain). Any hotspots are marked and excavated. This is referred to as "guided excavation" since limited portions of the work area require excavation to a deeper elevation to achieve the selected remedy. Precision excavation minimizes the potential for cross-contamination of clean areas.

RELEASE (POST REMEDIAL ACTION REPORT)

To ensure the site meets remediation goals established in the Record of Decision, a final status survey is performed. Continuing the example provided in the previous section, let's look at how an excavated site is released. (Note, however, that other activities might be required to evaluate the success of other remedies.) After the site contractor believes the remedial goals have been achieved, the Corps sends an independent contractor to the site to conduct a radiological walkover and collect samples to verify that the remediation goals have been achieved. The Corps reviews the sample data to determine whether the area meets the Record of Decision goals and can be backfilled with clean material, or additional soil removal is necessary.

The effectiveness of the cleanup, and compliance with the Record of Decision are documented in the Post Remedial Action Report (or PRAR). Further, the PRAR also documents the condition of the site after the cleanup, and whether any restrictions for future land use (such as deed restrictions, or restrictions on the installation of wells) are necessary. Copies of the draft report are given to the property owner, the EPA , and the MDNR for review and comment prior to being issued in final form. The PRAR should be maintained with property information in a secure location since this information is useful should the landowner decide to sell the property, make property improvements or undertake actions that disturb the ground surface, such as grading.

CLOSE OUT / 5-YEAR REVIEWS

It should be noted that while these activities (that is sampling, remedy design, and implementation) occur in a step-by-step process in each area, they may occur simultaneously in various portions of the site. The close out process is the only activity that must wait until all the areas comprising a site have been cleaned up. Due to the size and complexity of some sites, along with budget constraints, it becomes necessary to split the site into manageable areas. The cleanup status of each area will be defined in a PRAR. Once the all of the areas comprising the site meet the remedial goals set in the Record of Decision, the site can be closed out. The PRARs are then compiled into a single document called a Final Closeout Report. If a property meets the "unrestricted use and unlimited exposure" requirement, no further action is necessary. If a property does not meet this scenario (that is, contaminants remain above levels that allow for unlimited use and unrestricted exposure), 5-year reviews are required to determine whether the remedy identified in the Record of Decision is still protective of human health and the environment.