F U S R A P U P D A T E

The St. Louis Sites

Formerly Utilized Sites Remedial Action Program • Summer 2015

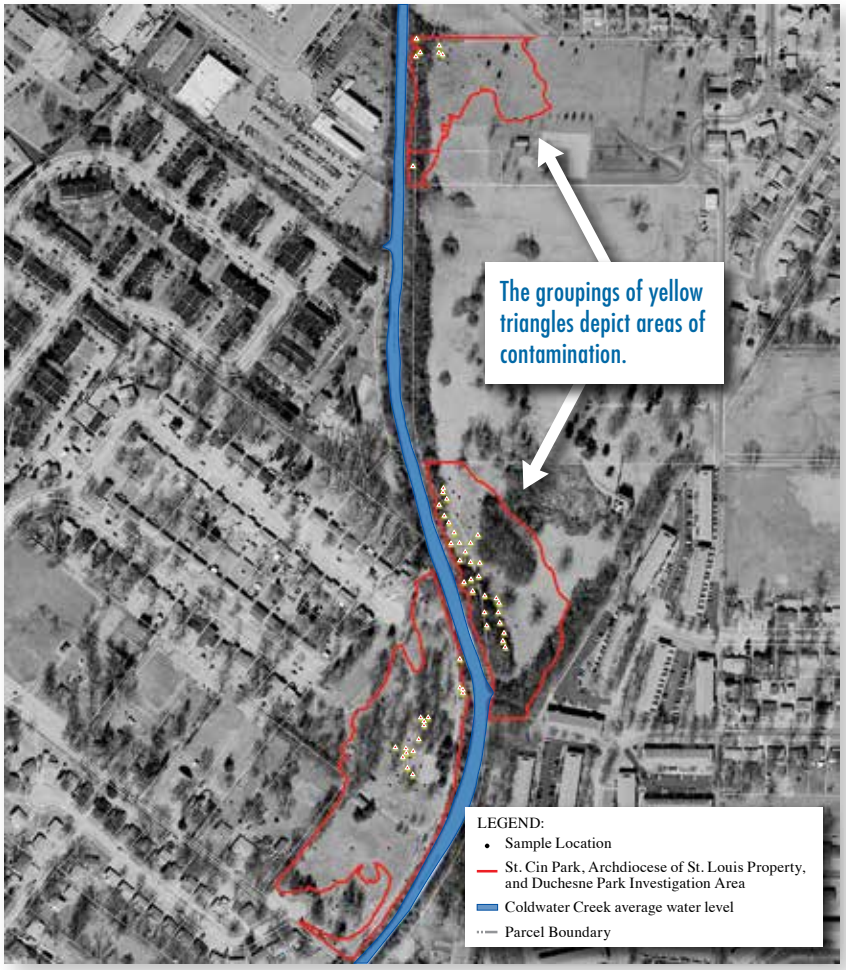
(314) 331-8000 www.mvs.usace.army.mil

St. Cin Park Activities

Sampling along Coldwater Creek has identified three areas with residual contamination: an area within St. Cin Park, an area within Duchesne Park, and an area within the Archdiocese of St. Louis property. These areas contain low levels of contamination and pose no immediate risk to the public. The U.S. Army Corps of Engineers (USACE) is currently working with the cities of Hazelwood and Florissant and the St. Louis Archdiocese to remediate these areas. The first area that will be remediated is St. Cin Park. Once activities are completed in St. Cin Park, USACE will remediate Duchesne Park and then the Archdiocesan property.

After July 4th, activities began at St. Cin Park to remove soil as part of the ongoing FUSRAP project in North St. Louis County. The soil being removed is not a risk to human health in its current configuration, but residual levels of some FUSRAP-related contaminants have been found at levels above the North St. Louis County Sites Remediation Goals.

Unfortunately, during the removal and restoration activities, portions of the park will be closed to the public. The restrictions are necessary, not because of the residual contamination, but due to the inherent dangers associated with heavy equipment at a construction site. The restricted areas will be clearly marked with construction fencing at a safe distance from the working areas. Unauthorized entry will be prohibited beyond this fencing.



Aerial photo on St. Cin Park (bottom left); mid right is Archdiocese Property; top right Duchesne Park

Upcoming Events

Information Releases: Winter Newsletter - 2016
This newsletter is issued twice a year.

Upcoming Meetings: St. Louis Oversight Committee Meeting, Thursday, August 20, 2015, 6:00 - 8:00 p.m. at the Hazelwood Civic Center.

In addition to the areas requiring soil removals, a haul route for entering and exiting the work areas will be established. The haul route will be selected to minimize the amount of disturbance to the park, but will likely be from the Alma Drive parking lot to the work areas.

The work is expected to take between two and four months to complete. Typical work hours will be from 7:00 am to 4:30 pm Monday through Thursday. Any questions or concerns can be directed to the St. Louis District Public Affairs Office: 314-331-8000 or TeamSTL-PAO@usace.army.mil.

A portion of the former Building 101 footprint – St. Louis Downtown Site, including large amounts of rebar and metal that were separated, scanned and recycled.

St. Louis Formerly Utilized Sites Remedial Action Program Activities

St. Louis Downtown Sites

Recent Remedial Action Construction Activities at the St. Louis Downtown Sites

Remedial action (RA) construction activities at the St. Louis Downtown Sites (SLDS) are continuing in Plant 6 WH of the Mallinckrodt property with excavation activities beneath the footprint of the former Building 101. An approximate volume of 41,100 cubic yards of contaminated soil has been removed from the Building 101 footprint area. The RA required the removal of several abandoned concrete foundations and utilities from historical Manhattan Engineer District/Atomic Energy Commission buildings that significantly impacted excavation progress.

Challenges were encountered in removing the underground concrete foundations and utilities. The effort required separating the rebar and miscellaneous metal items for scanning and disposal at nearby metal recycling centers. The metal pieces are cut into manageable sizes and scanned to verify that they are not contaminated and can be disposed of at the recycling facility. The removed concrete is sized, sampled, and stockpiled for use as deep backfill in excavation areas below 6-feet deep. Backfill authorization for much of the eastern and northern portions of the Building 101 footprint area has been issued, and the backfill of these areas is underway. Excavation activities continue in the western and southern portions of the Building 101 footprint.

Radon Basics

Radon is a natural, radioactive gas that filters up from soil, rock, and water around the world. Radon has no color, odor, or taste. Depending on your location, the ground under you releases differing amounts of radon gas all the time. Radon typically enters the air where it never reaches hazardous levels. It diffuses through the atmosphere. But, radon is a heavy gas so when it enters buildings it will stay in basements and lower levels unless vented. Only the soil about 1-foot under or around a building affects its radon levels. Radon can be found in homes, offices, and schools.

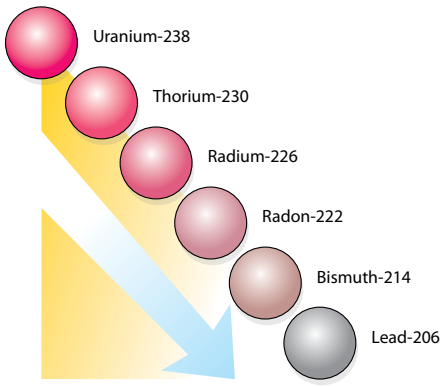
Radon comes from the natural decay of radium from uranium and thorium. These elements are radioactive and found in all soils everywhere. Radioactive elements are unstable and decay into other more stable elements.

Uranium slowly decays to lead, a stable element. It happens in a chain of events called a decay chain that we measure in half-lives. The half-life of uranium-238 is 4.5 billion years. The half-life of radium-226 is 1,620 years. You can imagine, then, how very slowly radon gas production is occurring.

Radon gas is measured in picocurie (trillionth of a curie) per liter (pCi/L). The U.S. Department of Health and Human Services recommends keeping indoor concentrations of radon below 4 pCi/L. The Missouri Department of Health and Senior Services measured indoor radon inside St. Louis County homes in 2013. All of 2,635 homes tested had radon levels at or below 3.8 pCi/L.

Every building has some radon gas. On the FUSRAP project, USACE knows that MED/AEC contamination is still present under the Futura Coatings buildings. Knowing this, they have tested the inside air quality of these buildings for radon each year from 2000 to the present. The annual results are at or below 3.1 pCi/L, which is nearly equal to results across St. Louis County. The Environmental Monitoring Data and Analysis Report contains monitoring data for the St. Louis FUSRAP sites.

These reports are available on the USACE website: http://bit.ly/FUSRAPstl.



Radon is formed in the natural uranium decay chain.

Are a watershed and a floodplain the same thing?

Simply put, the answer is "no." Let's take a look at the definitions of each, simple real world examples of each, and look at how these terms fit into the FUSRAP program.

A watershed is defined as the area of land in which all surface water drains to a common waterway or point. In St. Louis, the Mississippi River contains water from many watersheds, including those drained by the upper Mississippi, the Missouri River, the Illinois River, the Salt River, and other smaller drainages. A canoe launched in northern Montana eventually would float past the Arch in Downtown St. Louis. When thinking about this simple example, one can understand that a waterway is affected by what happens upstream in its watershed, which may be hundreds of miles and several states away. This diagram shows the entire extent of the Mississippi River Watershed.

The entire Mississippi River Watershed shown in yellow

A floodplain is an area of land adjacent to a stream or river that stretches from the banks of its channel to the base of the enclosing high ground or valley walls. Envision a floodplain by thinking of a stream and what ground is covered when that stream floods. Of course, the extent of flooding varies with more extreme flooding being less common.

Levels of floods are typically referred to as "events" associated with a number of years, such as a "100-year flood event." A 100-year flood has a one percent chance of occurring in any given year, while a 10-year flood has a one-in-ten chance in any year. The higher the number of years, the more extensive the flooding. Going back to our canoe scenario, a canoe in a given stream that could not float beyond its banks under normal conditions will be able to float out of its banks and over the floodplain during a flood. As a flood recedes, the canoe will either float back to the stream, or perhaps get stuck on the floodplain and left behind.

The St. Louis FUSRAP program uses knowledge of the local watershed as well as local floodplains, and how they relate to known radioactive contamination sources in order to drive investigations and sampling campaigns. By tracing drainage patterns downstream from sources, USACE can rule out locations that would be upstream in the watershed and put the focus on downstream depositional areas. A focus is also put into the floodplain downstream from the sources where contaminants were most likely to come to rest as flood waters began to recede in past events.

Understanding the differences in a watershed and a floodplain and thinking of contaminants as the canoe we used earlier will help form a basic understanding of what areas are of concern to the FUSRAP program in the St. Louis area.

Keeping in Touch

Mailing Lists - To receive newsletters and other printed communications, sign up for our mailing list any time.

Phone: (314) 331-8000
Mail: 8945 Latty Avenue, Berkeley, MO 63134
Fax: (314) 260-3941

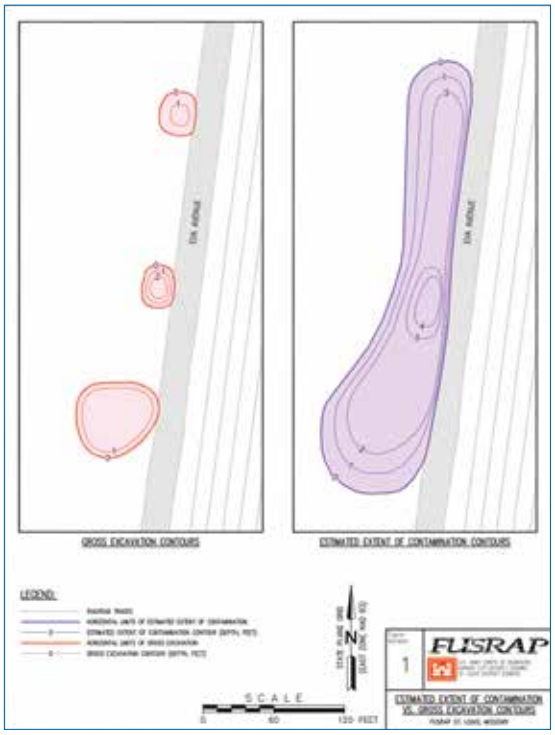
Homepage - To reach our site, go to http://bit.ly/FUSRAPstl

If you have any suggestions, questions, or comments, please contact us.

Educational Information

Q: What is the difference in the FUSRAP gross cut contours and estimated extent of contamination contours found in design documents?

A: Simply put, the gross cut contours represent the contamination that is known to be present that must be removed by a remedial action (RA). Due to the nature of radioactive contamination, time, and budget limits, and other factors, it is difficult to pin point the exact bounds of the contamination that needs RA. During each RA, areas adjacent to the excavation are carefully checked to determine how much additional area (if any) will need to be remediated. The Estimated Extent of Contamination contours represent an educated guess as to the final excavation size based on factors such as elevated samples, geological features, soil types, and historic knowledge. The Estimated Extent serves as a planning tool for the worst case scenario.



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