THE WEST LAKE LANDFILL SUPERFUND SITE

Bridgeton, St. Louis County, Missouri | September 2018

EPA

Community Update:
Final Remedy Selection
Record of Decision Amendment
for Operable Unit 1

Protecting Community Health and the Environment

30356607

EPA has reached a final remedy decision that is compliant with the law, based on sound science, and considers the state's and the community's positions and key concerns in accordance with the National Contingency Plan.

EPA Issues Final Amended Remedy

FOR OPERABLE UNIT 1 AT WEST LAKE LANDFILL SUPERFUND SITE

EPA has selected the final amended remedy for addressing contamination at the West Lake Landfill Superfund Site in Bridgeton, Missouri. The final amended remedy is documented in the Record of Decision (ROD) Amendment for Operable Unit 1 (OU-1). The ROD Amendment may be found here. The ROD Amendment paves the way to the remedial design phase. Once the design begins for OU-1, it will take about a year and a half to complete. Once the design is complete, EPA will make every effort to reach an enforceable agreement with the potentially responsible parties (PRPs) to perform the cleanup work.

ROD Amendment Improves Preferred Alternative #4 in Proposed Plan

Earlier this year, EPA presented a Proposed Plan (Preferred Alternative #4) that specified excavation of some materials contaminated with radioactivity down to 16 feet. After considering public comments, EPA determined that we could improve, or optimize, the remedy to achieve the same level of protection as Preferred Alternative #4 in the Proposed Plan.

The highlight of the optimization is that it reduces exposures to the community and workers, allows us to construct the remedy faster, and allows the flexibility to target higher concentrations of contamination. The final remedy in the ROD Amendment includes:

- Allowing flexibility to excavate as deep as 20 feet or as shallow as 8 feet in Areas 1 and 2 under certain limited circumstances. For deeper excavation, EPA will prioritize areas where there are concentrations of contamination above 1,000 picocuries (pCi/g). Allowing isolated pockets of radiologically impacted material (RIM) to remain in place between 8 and 12 feet provides the flexibility to focus on areas of higher radioactivity, while minimizing the total volume of landfill trash to be excavated.
- Excavating, generally, down to 12 feet and removing materials contaminated with radioactivity greater than 52.9 pCi/g.
- Excavating about 75,000 cubic yards of radioactive material greater than 52.9 pCi/g to be sent off site and 143,000 cubic yards of material containing less 52.9 pCi/g to be used on site.
- Transporting about 75,000 cubic yards of contaminated material by rail and truck to licensed off-site facilities. A transportation safety plan will be developed as part of the design process.
- Constructing an engineered cover over Areas 1 and 2 that will limit radon releases, protect groundwater and be maintained throughout the lifetime of the remedy.
- Implementing controls at the Site to protect the remedy, as well as conducting long-term surveillance and maintenance, monitoring groundwater, and restricting access.
- Excavating contaminated soils on Lot 2A2 (see bottom map on page 5) and the Buffer Zone down to background concentrations to allow unrestricted future use of those properties.

Community involvement is a vital part of EPA's work at the Site. In the months to come, EPA looks forward to working with the community to ensure the protection of human health and the environment.

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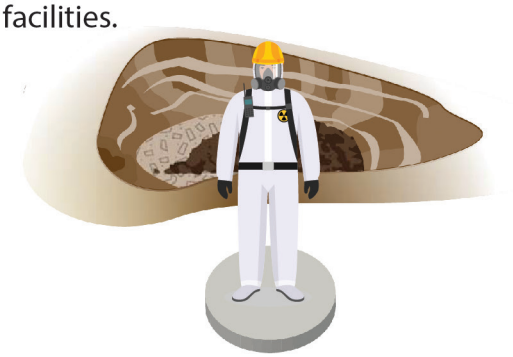
The Amended Remedy for OU-1

Includes:

EXCAVATION AND OFF-SITE DISPOSAL

Excavating, generally, down to 12 feet and removing materials contaminated with radioactivity. About 75,000 cubic yards of contaminated material will be taken by rail and truck to licensed off-site facilities.

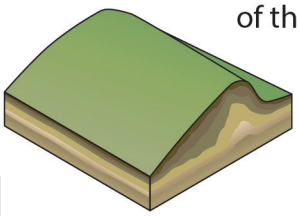


VARIABLE EXCAVATION

Allowing flexibility to excavate as deep as 20 feet or as shallow as 8 feet in Areas 1 and 2 under certain limited circumstances.

COVER

Constructing an engineered cover that will limit radon releases, protect groundwater and be maintained throughout the lifetime of the remedy.

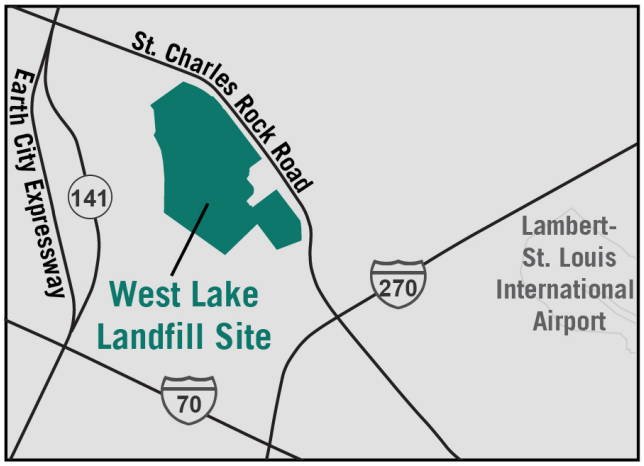


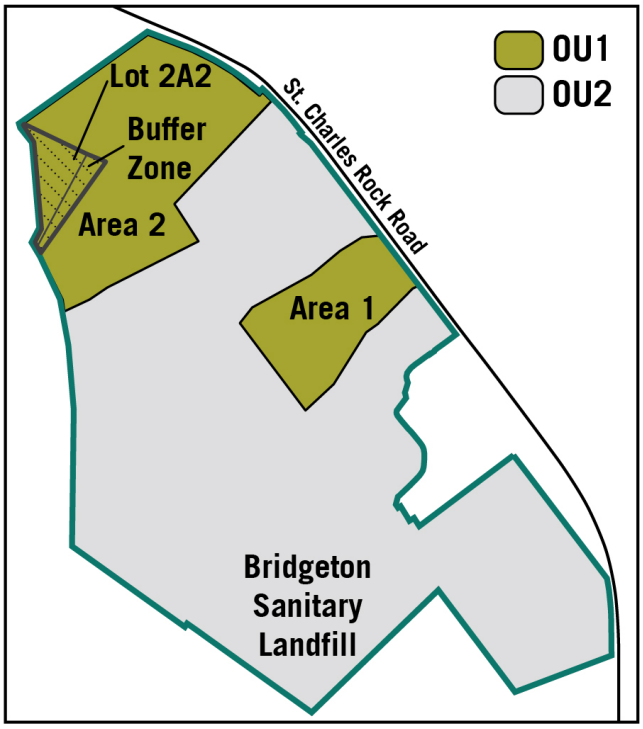
FUTURE USE

Area 1 and Area 2 are expected to remain landfills. Soils on Lot 2A2 and the Buffer Zone will be cleaned up to unrestricted use.

LONG-TERM CONTROLS

Implementing controls at the site to protect the remedy as well as long-term surveillance and maintenance, groundwater monitoring, and access restrictions.





Cleanup Benefits

- Protects human health and the environment.
- Prevents direct human contact with the contamination and significantly reduces the potential for exposures to gamma radiation and radon, and limits impacts to the groundwater.
- Minimizes potential exposure to the community and future on-site workers.
- Ensures long-term protectiveness of the radioactivity left on site through future use restrictions and long-term maintenance and monitoring.

Site Location

As shown in the top map, the West Lake Landfill Superfund Site is located on St. Charles Rock Road between Highway 141 and Interstate 270 in Bridgeton. The site work detailed in this document will occur in Operable Unit 1, which is shaded green in the bottom map.

Frequently Asked Questions

How Will the Amended Remedy Work?

Materials contaminated by radioactivity will be excavated from certain areas of the landfill. The current plan is to place the 75,000 cubic yards of contaminated materials into containers and transfer them onto rail cars. The waste will be taken to licensed disposal facilities. EPA has identified four licensed facilities to be evaluated and confirmed as part of the remedial design process.

Excavated areas will be backfilled using the 143,000 cubic yards of excavated on-site materials and the Site will be properly graded to support placement of the engineered cover.

The engineered cover will be constructed to prevent or reduce exposures to a level that is protective of human health. The cover will also reduce gamma radiation and radon emissions from the landfill, and reduce surface water infiltration into the landfill and potential leaching of RIM to groundwater.

EPA will oversee the long-term maintenance of the cover and will conduct a formal review of the cleanup at least every five years to ensure the remedy remains protective of human health and the environment. Access to the Site will remain restricted. A monitoring plan will be developed for air, surface water and groundwater that will include locations and frequency of the monitoring.

Can the Cleanup Be Done Safely?

Yes. EPA will oversee all activities during construction with worker safety and the health of the community as our highest priorities. EPA will review health and safety plans submitted by the PRPs and ensure personal monitors are worn by site workers. Ambient air will be monitored for the presence of contaminants.

How Will EPA Control Potential Releases of Radioactive Material During the Cleanup?

Monitoring air, surface water and groundwater is a key design element to ensure that human health and the environment are protected during the excavation and installation of the engineered cover. If, during construction, levels of radiation exceed the health standards, activities will cease or be modified.

Is Relocation a Part of the Amended Remedy?

EPA evaluated the potential for exposures to the community during construction of the remedy. Based on that evaluation, EPA does not anticipate a need for temporary or permanent relocation of residents during remedy implementation. EPA also has an active monitoring program in place to ensure that air, stormwater runoff, and off-site sediments and soils do not contain unacceptable levels of contamination. Implementation of the amended remedy will further ensure the long-term protection of human health and the environment.

When Will Work Start?

Addressing contamination at the West Lake Landfill Superfund Site is a priority for EPA. We will make every effort to reach an enforceable agreement with the PRPs. While we do not have a timeframe, we intend to start the design as soon as possible. We expect the design phase to take about 1½ years.

How Long Will the Work Take?

EPA is making every effort to start work as soon as possible. Once the design is completed, we expect the excavation and landfill cover construction to take about three years to complete.

Will Redevelopment Be Possible?

EPA is committed to returning sites to productive reuse whenever possible. However, in the case of the landfill, we expect it will remain a landfill and any future on-site commercial uses will be restricted. In the case of Lot 2A2 and the Buffer Zone, unrestricted use will be permitted.

How Will EPA Keep Us Informed?

EPA has staff dedicated to respond to community concerns and we are committed to ensuring that the community remains informed as we make progress at the Site. EPA is updating the Community Involvement Plan for the Site and we will continue to work with the Community Advisory Group. Regular updates will be provided, and we plan to host community meetings and other informational events throughout the process.

OTHER ELEMENTS OF CLEANUP WORK:

- Ensuring contamination is safely transported off site.
- Minimizing landfill odors when possible.
- Following strict decontamination processes.
- Implementing best management practices and engineering controls to address potential exposures during remedy construction:
  - Water, foam or daily cover will be used to address dust generated during construction.
  - Berms and channels will be used to direct stormwater from work areas for containment and characterization on site.
- Monitoring air and stormwater to ensure the effectiveness of the controls.
- Using an on-site lab to expedite sample results.

The timeline below highlights the Superfund process and EPA actions at the Site.

WEST LAKE LANDFILL SUPERFUND SITE

(OPERABLE UNIT 1)

ROD AMENDMENT

EPA updated and selected the final remedy based on site data and community feedback.

SEPT. 2018

ENFORCEMENT AGREEMENT NEGOTIATIONS

EPA will make every effort to reach an enforceable agreement with the site's potentially responsible parties (PRPs).

REMEDIAL DESIGN

Steps needed to put the remedy in place will be specified in detail. Prior to finalization, work takes place in three stages – preliminary (30% complete), intermediate (60% complete) and pre-final (90% complete).

OU-3 SITE GROUNDWATER

Remedial investigation will be performed to characterize groundwater at the site.

ONGOING | NEAR-

CURRENT STATUS AND NEXT STEPS

REMEDIAL ACTION

The site's remedy will be put in place.

LONG-TERM MONITORING

The site's remedy will be maintained and monitored over time to make sure it remains protective of human health and the environment. Five-year reviews are anticipated.

OU-1 CONSTRUCTION COMPLETION

All cleanup actions are complete and all remedy components are in place.

Community Involvement

-TERM

FUTURE

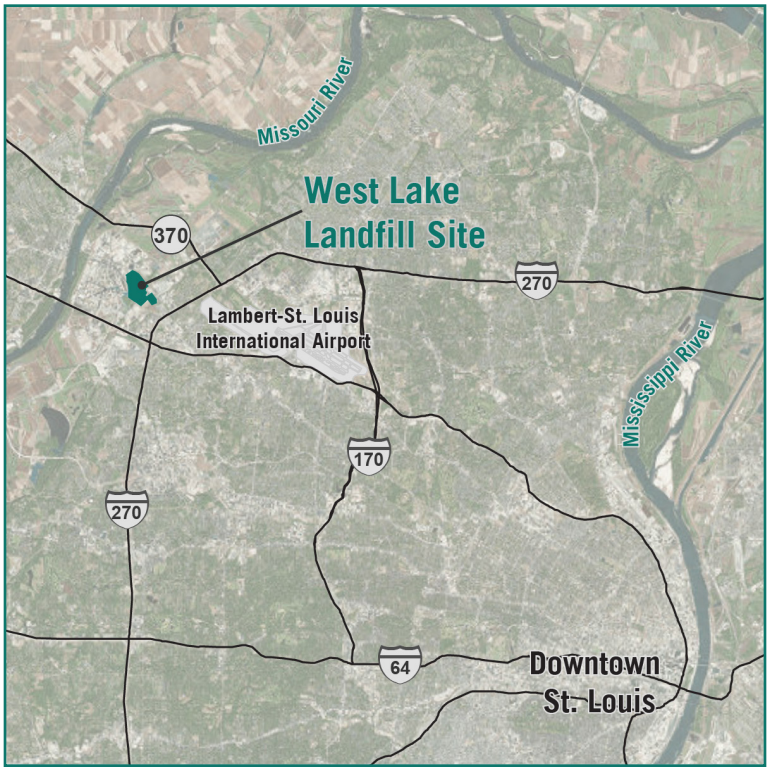
Site History

The 200-acre West Lake Landfill Superfund Site is located in the St. Louis metropolitan area, on the east side of the Missouri River about a mile north of the Interstate 70/270 interchange. Portions of the Site are within 10,000 feet of runways associated with the Lambert-St. Louis International Airport. Prior to 1939, the site was an agricultural area. Limestone quarrying took place on site from 1939 to 1985. Starting in the early 1950s, landfilling of municipal solid waste and construction debris took place on parts of the Site.

Two areas (Areas 1 and 2) were radiologically contaminated in 1973 when 39,000 tons of potentially contaminated surface soil, mixed with 8,700 tons of radioactive leached barium sulfate residues, were stockpiled at the site and used as daily cover in the landfilling operation. An area next to the Site was affected when radiologically impacted soil eroded onto it from a berm at the edge of Area 2. The landfill operator later bought this property, known as the Buffer Zone. It is now within the Site's perimeter security fence. A parking lot has been installed on the other portion, known as Lot 2A2. EPA considers Areas 1 and 2, the Buffer Zone and Lot 2A2 as Operable Unit 1.

The Bridgeton Sanitary Landfill, which ceased operations in 2005 and did not receive any radiologically contaminated soil, is also located on site. It is called Operable Unit 2.

Operable Unit 1 is the focus of EPA's cleanup efforts. A subsurface smoldering event at the Bridgeton Landfill is a concern because of its closeness to Operable Unit 1. Groundwater under the Site is Operable Unit 3. Groundwater investigations are being planned and will not slow down the cleanup of Operable Unit 1.



1973
BACKGROUND

8,700 tons of leached barium sulfate residues + plus 38,000 tons of potentially contaminated soil > mixed together and used to cover trash

Site Contaminants

What Are the Contaminants?

The primary contaminants at the Site are radioactive, and include the isotopes Radium-226, Thorium-230 and Uranium-238.

There are three types of radiation: alpha, beta and gamma. All primary contaminants at the Site emit alpha radiation, which is most harmful if inhaled or swallowed.

Radium-226 also emits gamma radiation, which can cause harm to the whole body without direct contact. The potential harm from gamma radiation is decreased as the distance from the source increases. Off-site areas are not affected by radiation from the Site.

Where Are the Contaminants Located?

Contaminant Size and Depth (approximate)

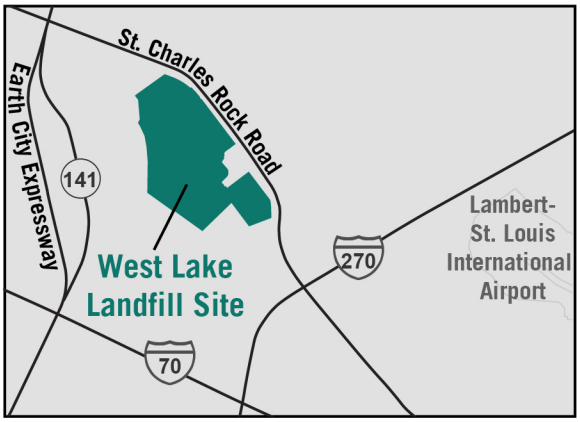
Area	Acres	Maximum Radionuclide Depth Below Ground Surface (feet)	Total Radiologically Impacted Material (cubic yards)
1	8	89	58,7000
2	27	43	251,000

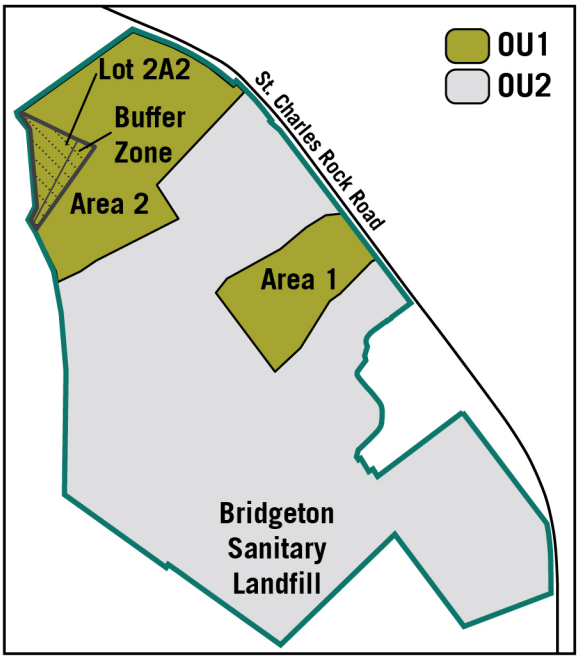
Area 1 – About 8 acres are affected by radionuclides at depths ranging up to 89 feet below ground surface. The total volume of radiologically impacted material (RIM) is estimated at 58,700 cubic yards.

Area 2 – Approximately 27 acres are affected by radionuclides at depths generally ranging up to 43 feet below ground surface. A majority of the radioactivity is located in the upper 20 feet. The total volume of RIM is estimated at 251,000 cubic yards.

The radionuclides are in soil used as daily landfill cover that is now intermixed with landfilled waste.

Buffer Zone/Crossroad Property – This property lies west of Area 2. About 3,600 cubic yards of surface soil became contaminated when soil from the landfill berm on Area 2 eroded onto the adjacent property. A parking lot has been installed over the affected area on Lot 2A2, and the Buffer Zone area is now contained within the Area 2 perimeter fence.





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EPA
U.S. Environmental Protection Agency

ATSDR
Agency for Toxic Substances and Disease Registry

USACE
U.S. Army Corps of Engineers, St. Louis and Kansas City Districts

MDNR
Missouri Department of Natural Resources

USGS
U.S. Geological Survey

DHSS
Missouri Department of Health and Senior Services

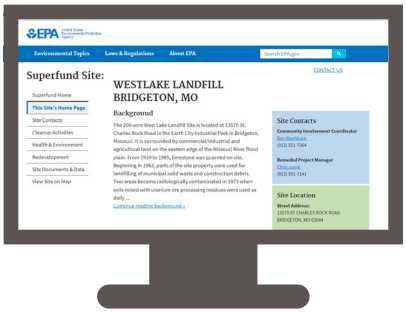
"One Government" Approach

EPA brought together a team of federal and state agencies to work on the site's cleanup, providing extensive experience and expertise for the project.

Resources

FOR MORE INFORMATION

Visit the [West Lake Landfill website]



Learn About the [Westlake Community Advisory Group]

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COMMUNITY INVOLVEMENT
SUPERFUND

Contact EPA Community Involvement Coordinator Ben Washburn

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In May 2017, EPA established a task force to restore the Superfund program to its rightful place at the center of the Agency's core mission to protect health and the environment.

epa.gov/superfund/superfund-task-force

EPA

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https://www.epa.gov/superfund/westlakelandfill