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Five-Year Review Addendum Fact Sheet

Lowry Landfill Superfund Site

Arapahoe County, Colorado

U.S. EPA SUPERFUND REMEDIAL PROGRAM REGION 8

EPA has determined the remedy at the Lowry Landfill Superfund Site to be "short-term" protective of human health and the environment. The remedy will be considered "long-term protective" once the remaining five-year review issues are resolved.

This determination is part of the Superfund program five-year review process which is designed to periodically assess whether Superfund site remedies remain protective of human health and the environment. The five-year review requires EPA to document methods, findings and conclusions of reviews of Superfund site remedies, and identify any issues and recommendations.

Completed in 2017, the fourth five-year review included the findings of several site inspections; interviews with the work settling defendants, local and state government officials and community members; and an assessment of all environmental data. The remedies associated with four out of six focus areas, also known as operable units (OUs), were found to be operating as intended and protective of human health and the environment. This includes landfill solids (OU2), landfill gas (OU3), soils (OU4), and surface water and sediments (OU5). (OU3 was found short-term protective.) The 2017 five-year review deferred a protectiveness determination because additional information was necessary to evaluate the protectiveness of the remaining two OU remedies.

The issues and recommendations for shallow groundwater and subsurface liquids (OU1) and deep groundwater (OU6) are addressed in the addendum to the 2017 five-year review.

The five-year review addendum documents the revised protectiveness determinations for the remedies for OU1, OU3, OU6 and sitewide based on the activities conducted and the information gathered since the 2017 five-year review. The remedy for OU1 (and thus the sitewide) is short-term protective of human health and the environment because there are no completed exposure pathways (no way for humans to be exposed) for 1,4-dioxane in shallow groundwater. OU3 and OU6 are now (long-term) protective. The final analysis of long-term protectiveness of OU1 and Site-wide will be completed soon.

OU1	• Short-term Protective
OUs 2-6	• Protective
Sitewide	• Short-term Protective

LEARN MORE AT:

The 2021 Addendum to the Fourth Five-Year Review
https://semspub.epa.gov/src/document/08/100009527.pdf

The 2017 Fourth Five-Year Review
https://semspub.epa.gov/src/document/08/100001702.pdf

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REVIEW and CONCLUSIONS

EPA has determined that for OU1 and OU6, there are no completed exposure pathways for 1,4-dioxane in shallow or deep groundwater. This is evidenced by the following:

- A 2017 well survey that identified private or municipal wells up to five miles north of the Site.
- Wells within, or immediately adjacent to the 1,4-dioxane plume have been (and will be) sampled annually. 1,4-Dioxane has not been detected in any of the samples collected from private wells.
- Additional wells were installed and sampled to assess the vertical extent of the 1,4-dioxane plume north of the Site. No 1,4-dioxane has been detected in any deep wells within the North End Study Area. The North End Monitoring Plan was updated to include sampling additional deep wells. Based on these results, the vertical extent of the plume is sufficiently characterized and monitored.
- An investigation was completed which updated the 1,4-dioxane plume map and included a focused conceptual model, and a risk assessment for groundwater and surface water in the North End Area. The risk assessment concluded that there were no unacceptable risks to human health or the environment from 1,4-dioxane in surface water or groundwater.

These results discussed above show additional institutional controls are not needed to ensure remedy protectiveness.

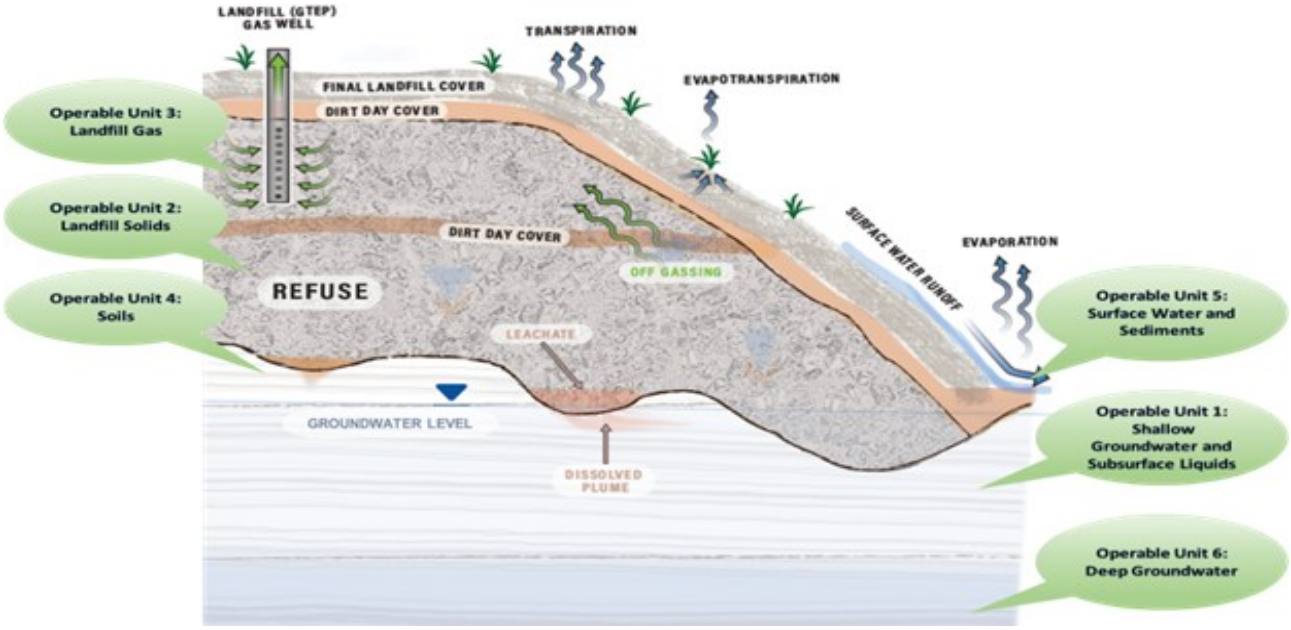

Figure: The six focus areas - also known as operable units (OUs).

SITE REMEDY DESCRIPTION

The long-term remedy uses containment, collection, treatment and monitoring to address site contamination. Remedy components include a perimeter slurry wall (an underground barrier to block groundwater flow), a landfill cover, an underground trench to extract groundwater (the North Toe Extraction System), a barrier to prevent surface water contamination (the Surface Water Removal Action), a subsurface clay barrier and groundwater extraction system (the North Boundary Barrier Wall), removal and/or in-placement treatment of buried waste pits, landfill gas removal with conversion of the gas to usable energy, wetlands reconstruction, long-term monitoring, and institutional controls (such as deed restrictions, fences or land use restrictions) to prevent unacceptable exposures.

The Site's remedy is currently in the operation and maintenance stage. Operation, maintenance and monitoring tasks are completed by the work settling defendants with oversight by EPA and the Colorado Department of Public Health.

For more information about the Lowry Landfill Superfund Site, visit : https://www.epa.gov/superfund/lowry-landfill and https://www.colorado.gov/cdphe/lowry-landfill.