

Results of the EPA's Residential Soil Testing and Next Steps Toward Cleanup

The U.S. Environmental Protection Agency (EPA) is sending property owners results of the 2024 soil sampling at their residential properties. Additional sampling is underway. The EPA is sampling the soil for contamination related to the Iron King Mine - Humboldt Smelter Superfund Site, including the metals arsenic and lead. Where cleanup is needed, the EPA will next reach out to landowners to work on a plan for excavation, backfill, and restoration of their property and to obtain permission to conduct this work.

Introduction

In Dewey-Humboldt, the former Iron King Mine and Humboldt Smelter left behind millions of tons of waste (tailings, dross waste, slag and waste rock) at and near the former mine and smelter and in the Chaparral Gulch that lies between them. These wastes contain toxic levels of metals like arsenic and lead. Windblown tailings from the mine, and the smelter smokestack between 80 and 125 years ago, also contaminated some surrounding residential properties.

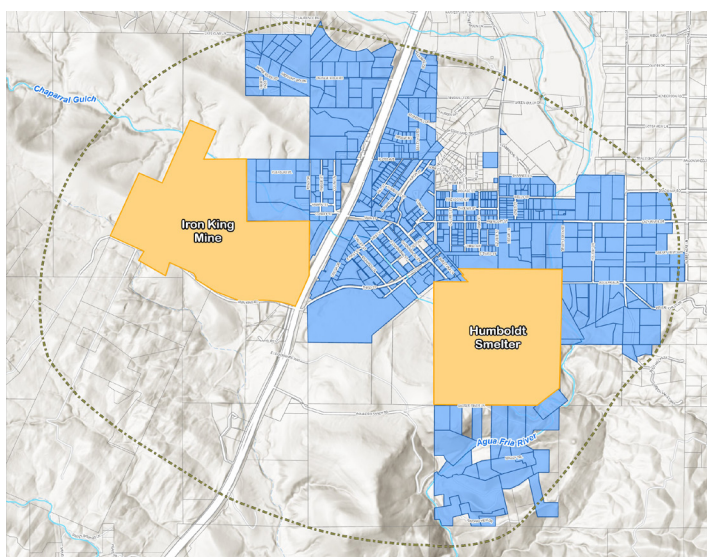


Figure 1. The EPA has already sampled hundreds of properties and will sample more as we obtain consent for access from property owners.

This Fact Sheet Covers

- Residential Sampling Results
- Understanding The Results
- Findings about Manganese
- Next Steps Toward the Residential Cleanup
- Common Questions

On October 20, 2023, the U.S. Environmental Protection Agency (EPA) issued a Record of Decision (ROD) – a final remedy, or cleanup plan – and responded to public comments on the remedy plan. The ROD can be found at [epa.gov/superfund/ironkingmine](https://www.epa.gov/superfund/ironkingmine). The ROD calls for cleanup action in both residential and non-residential areas. Wastes at the former mine, the smelter, and the Chaparral Gulch drainage will be moved to large, permanently covered holding cells called **repositories**. Contaminated soils on residential properties will be excavated, moved to the mine tailings pile, and replaced with clean soils.

The EPA has performed soil cleanups at 47 residential properties in the past. However, in the ROD, the EPA lowered the cleanup levels for arsenic and lead compared to the cleanup levels we used in earlier cleanups at residential properties. The EPA did this to be more protective of health based on new information about the toxicity of lead and arsenic. The EPA will now be cleaning up soils at additional properties as part of the final cleanup.

Residential Sampling

In 2014, the EPA conducted sampling at over 350 properties. Beginning in April 2024, EPA has now collected and analyzed more than 7,000 additional samples at more than 200 residential

properties, covering an area of almost 300 acres. A map of the current status of our work, and questions and answers about the work, can be found at experience.arcgis.com/experience/c37b8129bf304fa0ad034d3ebf2a4626. While the EPA will continue to sample more properties, we will also be moving forward with next steps toward conducting residential cleanup where it is needed.

Beginning in January 2025, the EPA began sending out sampling results to landowners as final data have become available. EPA was not able to send sampling results sooner because there were unforeseen issues that required reanalysis of soil samples at the laboratories. Laboratories also became backlogged with the many thousands of samples, and all results had to be thoroughly validated by the EPA.

About Manganese in Soils

The primary site-related soil contaminants of concern at the Superfund Site are the toxic metals arsenic and lead. However, in a certain area, the EPA found unexpectedly high levels of a metal called manganese. While manganese is less harmful than arsenic or lead, the EPA found some properties have manganese well above long-term safe levels. The EPA has conducted extensive additional studies, evaluations and research and determined that these levels are naturally occurring in soils and related to high amounts of manganese in the underlying rock in certain locations. It is not physically possible to clean up naturally occurring substances. Since this local background of manganese is not related to the former operations of the mine and smelter, the EPA is not legally allowed to take action to clean it up. Not all properties have elevated manganese. If you are concerned about manganese levels on your property, please contact us. The EPA can further discuss with you ways to limit your exposure to this metal.

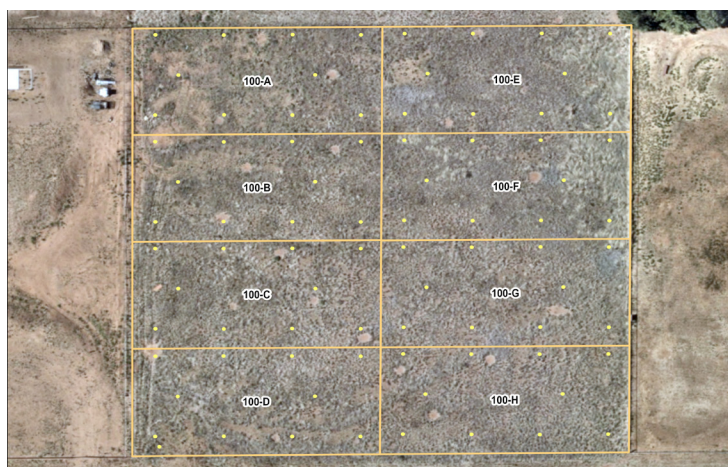


Figure 2. Example of property divided into quarter-acre exposure units. The EPA makes a decision about cleanup for each exposure unit.

Residential Sampling Results

The EPA collected samples in 2024 to add to samples we collected previously in 2013. We divided each property into quarter-acre areas called **exposure units (EUs)** and collected sufficient samples to ensure there are roughly 10 samples for each EU. We may need to collect additional samples at some properties to ensure a reliable cleanup decision. The EPA will only clean up EUs that meet the cleanup criteria.

The EPA uses all the sample results together for each EU to calculate a number called the **exposure point concentration, or EPC**. It is higher than a regular average to be extra protective of health. We compare the EPC to the cleanup levels to help decide whether a cleanup is needed. A table of results is being provided to each property owner showing the cleanup levels and the EPC for each EU and for each contaminant.

Next Steps


Where the EPA determines that a cleanup is necessary on a property, we will put together a property-specific plan for the owner to review with us. The plan, called a Technical Excavation and Restoration Plan (TERP), will include a map of the property and sampling results, where excavation is likely to be needed, and how yard features, including landscaping, would be restored after cleanup work is performed. After coordination with the landowner and the finalization of the TERP, cleanup will be planned and proceed with the landowner's approval.

The figure to the right shows the steps in the cleanup process.


	Arsenic	Lead	Antimony	Cobalt	Thalium
Cleanup Level	79 East of River 48 West of River	200	31	44	2.8
Exposure Unit					
100-A	39.6	17.5	1	24.2	0.2
100-B	41.3	19.1	0.8	23.6	0.2
100-C	26.5	25.8	1.1	29.4	0.2
100-D	43.4	23.1	0.9	28.6	0.2
100-E	10.8	20	1.1	22.2	0.2
100-F	36.3	25.2	1.5	26.1	0.2
100-G	41.6	21.6	1	25.9	0.2
100-H	25.5	21.7	1.1	25.5	0.1

Table 1. Example of EPC results provided to residents. The concentrations above are measured in milligrams per kilogram.


Residential Soil Cleanup Steps




EPA develops a yard-specific plan with property owner.




Contaminated soils are excavated and disposed.



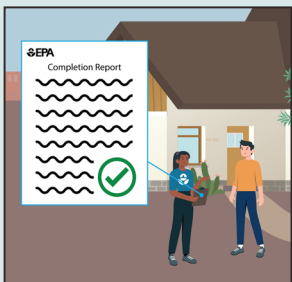
Soil samples are collected to confirm cleanup is complete.



The excavation is backfilled with clean soil.



The yard is restored based on the restoration plan.



EPA provides property owner with a completion report.

Questions

Can I still get my property sampled?

Yes, but you must provide a signed consent for access form. Please go to experience.arcgis.com/experience/c37b8129bf304fa0ad034d3ebf2a4626 or contact Anne Lawrence at lawrence.anne@epa.gov.

Will I be charged if a cleanup is done at my property?

No. EPA's Superfund program pays for the cleanup and restoration.

Can I remain on my property during cleanup?

Yes, residents can remain on the property during cleanup. The EPA will ensure the safety measures are in place to protect residents during cleanup.

What if I don't consent to sampling at my property?

Without sampling, the EPA will not be able to evaluate whether a cleanup is necessary and no cleanup will be performed. Contaminants above cleanup levels may remain in soils on the property. The EPA will have to inform those who may inquire about cleanup in the area that the property owner did not grant access for sampling.

United States Environmental Protection Agency, Region 9
75 Hawthorne Street (SFD-8-1)
San Francisco, CA 94105
Attn: Georgia Thompson (IKHS 4/25)

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Come to Our Open House

Community members are invited to attend one of EPA's open house sessions to learn more about our residential soil sampling and cleanup. The next open house will be held at The Barn at Mortimer Farms on Wednesday, May 14. There will be two sessions, 12 PM – 3 PM and 5 PM – 8 PM.

For More Information, contact:

Georgia Thompson

EPA - Community Involvement Coordinator
(415) 972-3048
thompson.georgia@epa.gov

Anne Lawrence

EPA - Remedial Project Manager
(415) 972-3108
lawrence.anne@epa.gov

Katelyn Kane-Devries

Arizona Department of Environmental Quality -
Project Manager
(602) 771-0167
kane-devries.katelyn@azdeq.gov



Also, please visit EPA's website:
epa.gov/superfund/ironkingmine