



Iron King Mine / Humboldt Smelter

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EPA Completes Soil Cleanup in Residential Yards

The United States Environmental Protection Agency (EPA) has cleaned up surface soils in 31 residential yards in Dewey-Humboldt. These yards had soils contaminated with lead and/or arsenic from the Iron King Mine/Humboldt Smelter (IKHS) Superfund site. On April 5, 2017, EPA held an open house community meeting to discuss the soil removal plans. EPA continues to regularly update the Town Council on our ongoing work.

Why Did EPA Cleanup Residential Yards?

Over many years, lead emissions from the smelter stack, wind-blown tailings from the mine and the smelter, spills from rail loading areas, and use of mine tailings resulted in lead and/or arsenic contaminating a small number of residential yards in Dewey-Humboldt. At the end of a thorough investigation of about 600 residential yards, EPA found about 30 properties with lead (or arsenic) in surface yard soils at high enough levels to pose an unacceptable health risk. EPA worked with the property owners to obtain permission to clean up the surface yard soils. This work happened between April 17 and July 3, 2017.

It is important to note that both lead and arsenic occur naturally in soils throughout Dewey-Humboldt; yard soils can also have some level of lead from man-made sources other than the IKHS site. For Superfund cleanups, this is called “background.” EPA is focused on areas where levels of the lead and arsenic are higher than background levels.

EPA prioritizes the cleanup of residential yards because people may come into direct contact with soils. In addition, we want to promptly resolve contamination issues on residential properties. EPA had previously done two other cleanups because of high levels of arsenic and lead from IKHS. The first was in 2006-2007, which addressed six properties. The second was in 2011-2012, which addressed 13 properties. In all cleanup actions, EPA removed (or dug up) contaminated surface soils and placed clean soil over these areas.

How Did EPA Cleanup Residential Yards?

EPA previously sampled the surface yard soils to determine the specific locations of contaminated soils to clean up. During the cleanup, we removed (or dug up) contaminated surface yard soils to a depth of at least 12 inches (one foot). Then, we tested the deeper soil for lead and arsenic. If we found lead or arsenic at high levels, we placed an orange warning marker on the ground over these specific areas (see next page for more information). Next, we placed clean soil over these areas. Finally, we restored the yard to pre-cleanup conditions, to the extent possible.

Tailings



A powdery waste that remains after crushing and concentrating mine ore.

Additional Information

In March 2017, EPA issued a fact sheet about the residential cleanup, and EPA's ongoing study of different ways to clean up non-residential portions of the IKHS site (the Feasibility Study). The March fact sheet is available at: <https://go.usa.gov/xRPbB>

In September 2016, EPA issued a fact sheet which explained the nature and extent of contamination on all areas around the IKHS site (the Remedial Investigation). That fact sheet is available at: <https://go.usa.gov/xRPbk>

Additional information about the IKHS site is available at: <https://go.usa.gov/xX495>. Copies of site-related documents, including the *Remedial Investigation Report*, are available at the Dewey-Humboldt Town Library, located at 2735 N. Corral Street in Dewey-Humboldt.

Where did the removed soil go?

EPA placed the removed yard soils on the mine tailing pile at the rear of the former Iron King Mine property. This was done with the consent of the current property owner. Because the yard soils EPA removed are far less contaminated than the mine tailings pile, they serve as a good temporary cover material to keep the more contaminated tailings pile in place.

What is next?

EPA will provide letters to impacted homeowners. These letters will include information about the levels of lead and arsenic in the yard before the cleanup, information about the cleanup done in the yard, and results from additional sampling efforts, where appropriate. These letters also note EPA has removed health risks in residential yards that may have existed due to the IKHS site. We will also issue a final report that will summarize this 2017 cleanup in Dewey-Humboldt.



EPA removing soil from a residential property

What Does This Mean to Future Property Owners in Dewey-Humboldt?

EPA's completion of all cleanup activities of the residential areas should reduce uncertainty about the site contamination and make normal use of residential properties possible. For properties that did not require cleanup and properties where cleanup activities did not result in placement of warning markers, there are no restrictions on future property use. For properties with warning markers, the property can be used normally if deep soils below the warning marker remain in place. If property owners must dig out the soil below the warning marker, EPA has given owners instructions to safely remove this soil and protect residents. We are providing town managers the locations of these yards and the instructions for safe removal of soils below the warning marker.

There are two exceptions to normal use of residential properties:

1. Residential properties that lie on the floor of the Chaparral Gulch. EPA plans to address this area at the same time we clean up the non-residential areas at the IKHS Site.
2. Two residential properties where owners declined to give EPA access to sample and/or to do cleanup activities. EPA is informing Town managers of these locations.

What exactly is the warning marker or "snow fence"?

On some properties, EPA found high levels of lead or arsenic in deeper soils after removing the surface soils (at least 12 inches), and we left an orange warning marker (sometimes called a "snow fence") under the clean backfilled soil. The purpose is to alert workers, tenants, and property owners that high levels of lead and/or arsenic may remain in the soils below the warning marker. EPA does not consider these deeper soils a health threat if the overlying layer of clean soil remains in place. We recommend not to dig up any soil below the warning marker, because this may expose you and others to unsafe levels of contamination.

EPA will provide property owners and the town managers with recommendations on how to protect residents if soil below the warning marker must be removed. These recommendations include keeping the contaminated soils below the warning marker separated from other soils, taking efforts to prevent people from unnecessary contact with the contaminated soils, and placing the contaminated soils back in the ground under the warning marker. For more information, please contact EPA.



EPA placing a warning marker (or "snow fence")

How Will this Cleanup Affect Property Values?

Property values depend on many market factors, including buyer perception. EPA does not control property values in any way, nor can we compensate for effects on property values. Many communities often worry that living near a Superfund site will cause property values to drop. Even though discovery of contamination near a property can affect its value, it is often found that effects on property values related to soil contamination are lessened or eliminated once a cleanup has been completed. EPA will provide information related to cleanup activities to local authorities or inquiring property developers or purchasers. Other unrelated real estate market trends do, of course, continue to have their usual effect after a cleanup is completed.



What is the Iron King Mine / Humboldt Smelter (IKHS) Superfund Site?

Superfund is a program that provides the authority and funding to clean up sites with contamination that pose a threat to human health or to the environment. EPA placed the IKHS site on the Superfund list (the “National Priorities List”) in 2008. The Site is shown in Figure 1. The contamination at the IKHS site was caused by historical operations of two major contributors: 1) the former Iron King Mine and 2) the former Humboldt Smelter.

Between the early 1900s and about 1970, the former Iron King Mine extracted, milled, and concentrated solid rock ores for zinc, silver, copper, lead, and gold. This process left behind a pile containing about four million cubic yards of orange mine tailings with high levels of arsenic and lead. Some of these tailings washed into the Chaparral Gulch and flowed downstream toward the Agua Fria River. Additionally, tailings blew to open lands surrounding the mine.

From the late 1800s until about 1937, the Humboldt Smelter and two earlier facilities crushed copper and lead ores and melted them in furnaces to make pure metal. During the smelter’s operation, lead and other metals were released from the smelter’s smoke stacks. Additionally, large piles of mine waste (called dross and slag) and soils contaminated with lead and other metals remained on the smelter property.

Historically, tailings from the smelter and mine mixed. These tailings are being held back from entering the Agua Fria River by a dam in the lower Chaparral Gulch.

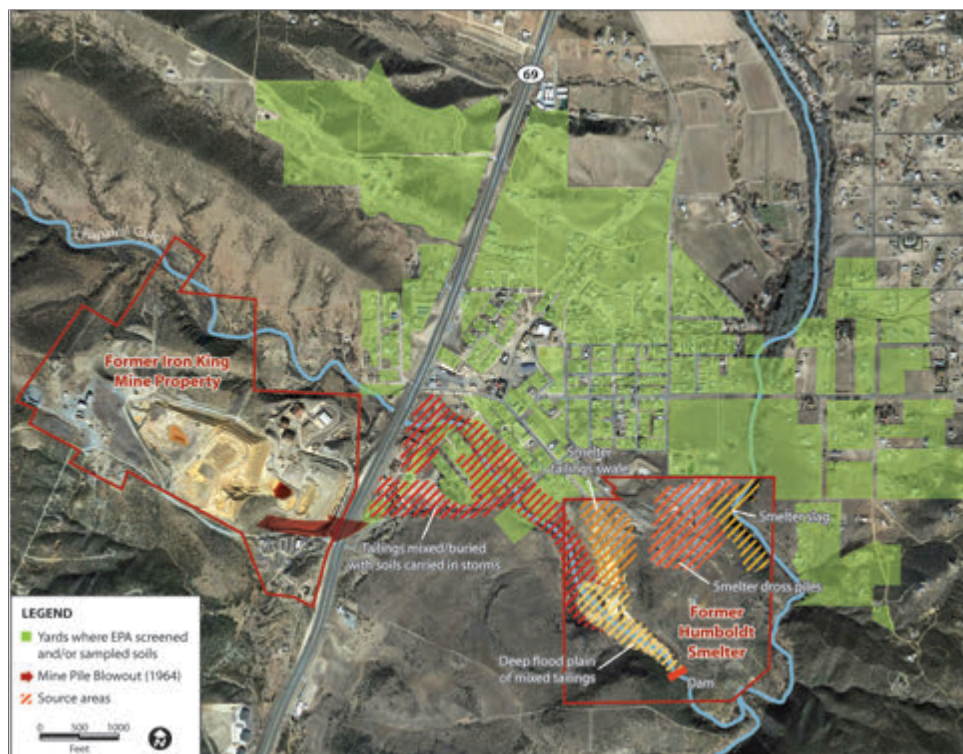


Figure 1: Map of Iron King Mine/Humboldt Smelter Superfund Site



Iron King Mine / Humboldt Smelter

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For More Information

If you have any questions or concerns, or to be added to the site mailing list, please contact:

EPA contacts

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Information Repository

EPA maintains an information repository which contains documents, reports, and letters about site cleanup activities:

Dewey-Humboldt Town Library

2735 S. Corral Street
Dewey-Humboldt, AZ

For more information, please visit EPA's website for the IKHS site at: <https://go.usa.gov/xX495>.

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