



## Cleanup of the Former ASARCO Smelter

### A Celebration of Success in Environmental Protection and Sustainability

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*This Fact Sheet was prepared by the U.S. Environmental Protection Agency (EPA) and the Montana Environmental Trust Group, LLC, Trustee of the Montana Environmental Custodial Trust. Established as part of the ASARCO bankruptcy settlement, the Montana Environmental Custodial Trust is responsible for remediating and facilitating the safe redevelopment of the former ASARCO Smelter in East Helena under the oversight of EPA and for the benefit of the United States and the State of Montana.*

### The Environmental Challenge

More than a century of lead smelting left extensive contamination in soil and groundwater at the former ASARCO Smelter in East Helena. Soils contaminated with lead, arsenic and other metals posed a threat to people, migratory birds and other receptors that could come into contact with the impacted soil. Precipitation either percolated through contaminated soils leaching contaminants into groundwater or transported contamination in stormwater runoff. Surface waters from Prickly Pear Creek (PPC) and two manmade lakes raised groundwater elevations under the former smelter plant, driving groundwater through impacted soils and loading contaminants to groundwater that migrated in plumes off-site.

### The Cleanup Solution

In the last five years, more than one hundred years of ASARCO contamination has been addressed. A 62-acre Evapotranspirative (ET) cover<sup>i</sup> constructed over the entire smelter area eliminates the risk of human and ecological receptors being exposed to contaminated soils and prevents rainwater from leaching contaminants into groundwater. The natural, self-sustaining ET cover also stores and sheds clean stormwater. By moving PPC away from the smelter and draining the manmade lakes, groundwater elevations under the plant have been lowered, dramatically reducing the volume of groundwater flowing through contaminated soils that were loading contaminants to groundwater. Groundwater contamination has been further reduced by removing several areas of highly contaminated soils that were a significant source of contamination into groundwater.

### The Results

Contaminant concentrations in on- and off-site groundwater have measurably dropped. Dilapidated buildings and other remnants of the former smelter have been demolished and replaced with a graded, vegetated, self-sustaining ET cover. Demolition debris, contaminated source area soils and other excavated materials have been safely stored under the ET cover. Stormwater is now stored in or runs off clean from the ET cover. PPC now flows in a natural, meandering 1.25-mile-long channel. One hundred acres of new, previously non-existent floodplain now provide riparian habitat and flood storage capacity to mitigate flooding in the downstream, flood-prone areas of East Helena. New, enhanced wetlands have replaced the manmade lakes. Smelter Dam, once used to store water in the manmade lakes, has been removed and, with it, the last impediment to fish passage between the PPC headwaters and Lake Helena.



Former ASARCO Smelter, East Helena



## East Helena Cleanup—A Model of Environmental Protection and Sustainability

Resource conservation is the cornerstone of sustainable remedial construction practices. By reusing and recycling the majority of material required for construction, the East Helena project offers a real world example and success story for sustainability in environmental protection. In a near-perfect balancing act, the material to be added or subtracted to build each component of the cleanup—PPC realignment, ET cover and source removal—came to or from one of these three construction projects. More than 1,000,000 cubic yards of material that was excavated for the PPC alignment project was sorted, screened and used to construct the layers of the ET cover, 50 acres of newly created wetlands or the new creek channel and floodplain. Topsoil for the ET cover was harvested from the former manmade lakes or the west bench area of the site. And thousands of trees, plants and cuttings were salvaged from areas near the original PPC and then replanted in riparian areas along the new creek channel.

By reusing and recycling all the material on site, the East Helena project avoided the environmental and economic costs of importing thousands of tons of material needed to build the ET cover from off-site sources and disposing of more than one million tons of excavated material from the new creek channel and floodplain. The magnitude of the East Helena recycling effort is reflected in the numbers—volume, distance and size—of this interrelated construction effort that began four years ago.

Volume of Material Excavated for the New PPC	1,055,100 yd <sup>3</sup>
Volume of Material Excavated on Site and Used to Construct the ET Cover	967,000 yd <sup>3</sup>
Length of Reconstructed PPC Channel	1.25 miles
Size of ET Cover Area	62 acres
Size of Created Wetlands Area	50 acres
Size of Newly Created Flood Plain Area	100 acres
Number of Plants, Trees and Cuttings Salvaged and Re-planted in New PPC	34,310
Number of Buildings Demolished on the Smelter	60

### What Comes Next

Today, the only visible evidence of ASARCO in East Helena and the last remaining environmental challenge is the 16-million ton slag pile. Studies are under way to determine how best to reduce contamination leaching to groundwater from the pile. Groundwater remedy performance will be monitored for many years.



**For more information about the East Helena Project, please contact:**

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Visit the Montana Environmental Custodial Trust website at: [www.mtenvironmentaltrust.org](http://www.mtenvironmentaltrust.org)

<sup>1</sup> See EPA Citizen's Guide to Evapotranspiration Covers: [https://www.epa.gov/sites/production/files/2015-04/documents/a\\_citizens\\_guide\\_to\\_evapotranspiration\\_covers.pdf](https://www.epa.gov/sites/production/files/2015-04/documents/a_citizens_guide_to_evapotranspiration_covers.pdf)

