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Pb

Lead

207.2

United States Environmental Protection Agency

# EPA Reduces Lead Exposures Through Cleanup Enforcement 2019

## EPA's cleanup enforcement programs help get the lead out of American communities

The EPA enforces the national hazardous substances and hazardous waste cleanup programs under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) and corrective action under the Resource Conservation and Recovery Act (RCRA). The EPA's Superfund and RCRA corrective action enforcement groups identify parties responsible for releases or threatened releases of hazardous substances and wastes and compel them to take the actions necessary to address the contamination.

Superfund directs the EPA to clean up contaminated sites where hazardous substances, such as lead, have been released or there is a threat of release into the environment. Lead is one of the most common contaminants found at Superfund sites; there are presently almost 900 Superfund sites on the National Priorities List (NPL), proposed to the NPL or using the Superfund Alternative Approach, with lead as a contaminant of concern. Where there are financially viable parties that are responsible for the contamination, Superfund authority is used to compel those parties to either perform or pay for the cleanup.

RCRA cleanup authority may be used at permitted facilities that treat, store or dispose of hazardous waste, or anywhere that a release of solid or hazardous wastes (lead is a RCRA characteristic hazardous waste due to its toxicity) may cause an imminent and substantial endangerment to human health or the environment.

***Cleanup enforcement programs help to reduce lead exposure***

The Superfund program cleans up hazardous substances such as lead to protect human health and the environment. A recent study of two decades of children's blood lead levels (BLLs) in six states indicated that Superfund cleanups lowered the risk of elevated BLL for children living within 2 km (1.24 miles) of lead-contaminated sites by 8 to 18 percent.

Lead is a neurotoxin; exposure can permanently damage the brain. It can also injure other soft tissues and organs, cause permanent nerve damage, interfere with blood formation, and high levels of lead exposure can lead to seizures, coma, and death. More information on lead and human health is available here.

Lead is still found in numerous products including paints, batteries, computer components, aviation fuel and ammunition. Metal smelters and refineries discharge lead to the air and leave waste piles that contaminate soil and groundwater. Despite efforts to phase lead out of many products, its extensive historical use has left a legacy of persistent contamination in communities throughout the country.

Lead is found in yards, playgrounds, homes, soils, sediments, surface and ground-waters. Lead-based paint is often found in homes built before the 1978 ban on household use of lead paint. Some communities still have lead-based or lead-soldered water pipes which may pose a hazard to drinking water.

The Superfund and RCRA corrective action enforcement programs make many cleanups possible by identifying the parties responsible for the contamination and using enforcement authorities to compel them to clean it up. Superfund enforcement actions save taxpayers from having to pay the costs of cleanup and get some cleanups started sooner than they would if they had to wait for federal funds to become available. Facility owners and operators operating under a RCRA permit or RCRA interim status are obligated to take "corrective action" (cleanup action) when necessary; failure to do so prompts enforcement action.

Enforcement actions include administrative orders on consent (AOCs), unilateral administrative orders (UAOs) and consent decrees (CDs). Orders and CDs can compel investigation and cleanup, access to contaminated property, the repayment of money spent by EPA (under Superfund), institutional controls, and other measures.

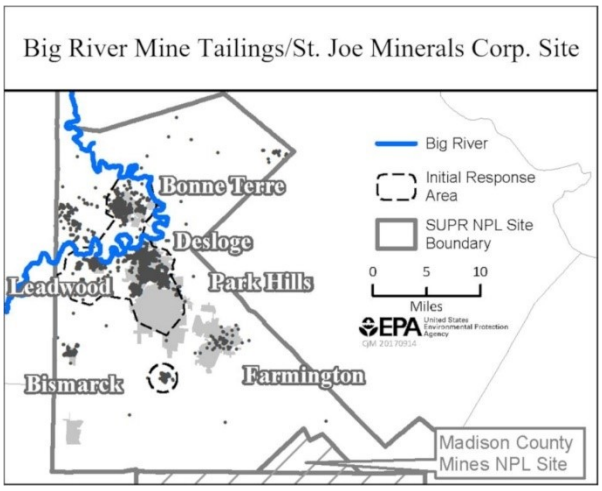
**Blood Lead Level (BLL)**

As understanding of the impact of lead on human health has increased, what is considered "acceptable" levels of lead in blood have steadily dropped.

In 2012 the CDC, recognizing there is no safe BLL in children, recommended clinicians monitor children with a BLL greater than 5 µg/dL.

Some examples of lead-related cleanup enforcement actions in FY19 are highlighted here.

**Big River Mine Tailings**, Missouri



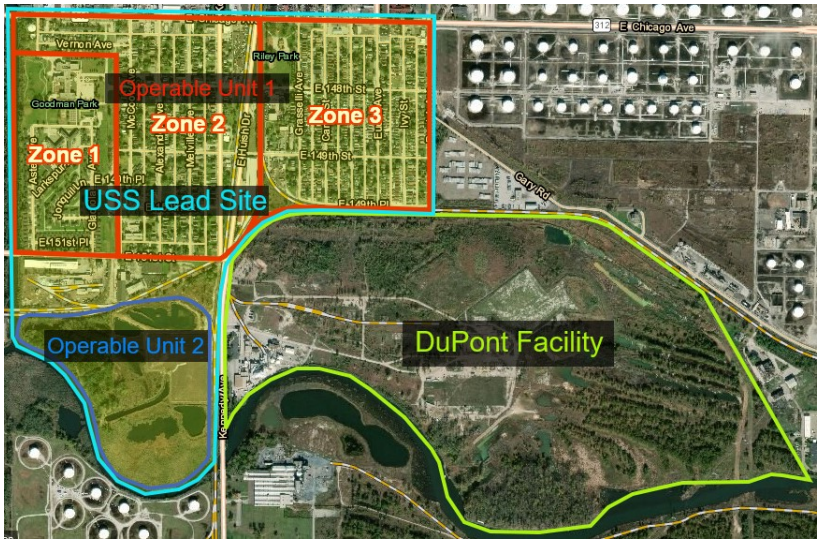

The Big River Mine Tailings/St. Joe Minerals Corp. Superfund Site is in eastern Missouri, where lead mining starting in the nineteenth century resulted in about 250 million tons of mine waste tailings and chat, which was used extensively as fill for public roads, residential properties, and more. Via these uses and transport by wind and water erosion, mine wastes contaminated site soils, sediments, and water with lead.

In November 2018, the EPA entered a CD with NL Industries, Inc. (NL). Under the CD, NL paid EPA $13 million to cover past and future costs incurred by the Agency in Operable Unit 1 (OU1), which addresses remediation of contaminated residential yards, schools and parks within 2 miles of the tailings piles. In March 2019, the EPA entered a CD with the Missouri Department of Natural Resources (MDNR) where MDNR paid $40,000 in past costs and $25,000 in future oversight costs, and is performing remedial work on 98 residential properties at the Site.

Both of these CDs are the latest in a long history of enforcement and cleanup at the Site, including a CD between the EPA and Doe Run finalized in May 2018, under which Doe Run will remediate around 4,000 yards – work that has an estimated value of $100 million. Doe Run is the current owner of the some of the mine waste areas and through its predecessor company has owned or operated in all of the major mine waste areas at the Site during the time that disposal occurred. To date, over 5,000 residential properties have been sampled and over 1,300 residential yards, schools, daycares and parks have been remediated in OU1 alone.

**USS Lead Site & DuPont Facility**, Indiana

The cleanups at the USS Lead Superfund Site and the adjacent DuPont facility, are an example of an area-wide problem being addressed by multiple enforcement authorities; in this case, CERCLA and RCRA. Located in East Chicago in northwestern Indiana, the extensive lead contamination has required years of enforcement work to address. Residential areas were prioritized for the earliest actions and are close to completion.




### USS Lead Superfund Site

This Site encompasses both the USS Lead facility and adjacent residential communities (outlined in light blue and highlighted yellow on the map) and demonstrates the ongoing nature and commitment of enforcement work at complex lead sites. The USS Lead facility was an active lead smelter from 1906 until 1985. Wastes from the smelting operations and on-site surface soils were heavily contaminated with lead and other metals.

In March 2019, the EPA issued the latest in a series of enforcement actions and action memorandum amendments dating back to 2008. That series has directed Atlantic Richfield Co. (ARC), the Chemours Company FC, LLC (Chemours), E. I. du Pont de Nemours and Co. (DuPont), and other PRPs to perform cleanup work at the USS Lead Superfund Site.

Work has included testing, excavating and replacing lead-contaminated soil on residential properties and at the former Carrie Gosch Elementary School, and testing and cleanup of interior dust in many of those homes. To date, 765 of the 791 exteriors identified as needing cleanup, including all of the residential properties in Zone 3 (see map), have been completed. That's 765 residential yards where lead exposures to children, pregnant women, the elderly and other residents have been eliminated or greatly reduced. In addition, indoor dust sampling at properties requiring exterior remediation showed 259 properties required interior cleaning, 215 of which have now been cleaned. Work at the remaining residential properties is scheduled for completion in FY 2020.

### DuPont Facility

Southeast of the USS Lead Site, the nearly 450 acres of the former DuPont facility (outlined in green on the map) encompass former chemical manufacturing areas and a 172-acre natural area covered by an Indiana Department of Natural Resources conservation easement. Contamination at the facility is being addressed under RCRA authority.

At one time, the former DuPont East Chicago facility was the largest U.S. producer of lead arsenate. Lead and arsenic contaminated the facility's soils and groundwater, and the contamination was released offsite toward the neighborhood north of DuPont and into the Grand Calumet River to the south.

In November 2018, the EPA and the current and previous owners (DuPont, Chemours, and East Chicago Gateway Partners) of the former DuPont chemical manufacturing plant agreed to a $26.6 million cleanup of the facility under a RCRA order.

The current cleanup agreement requires soil excavation and off-site disposal, groundwater treatment and monitoring, closing of a solid waste landfill, maintenance of barriers to prevent contact with contaminated soils,

implementation of EPA-approved soil management plans and health safety practices, and establishment of other protections for facility workers and the community. Earlier agreements required investigation of the nature and scope of facility contaminants, which identified lead as a primary contaminant of concern (COC) in soil and arsenic as the primary COC in groundwater.

Although the DuPont facility is not part of the USS Lead Superfund Site, lead from the DuPont facility contributed to the contamination at the USS Lead Site, and therefore DuPont is one of the parties participating in that cleanup as well.

**Lower Darby Creek**, Pennsylvania

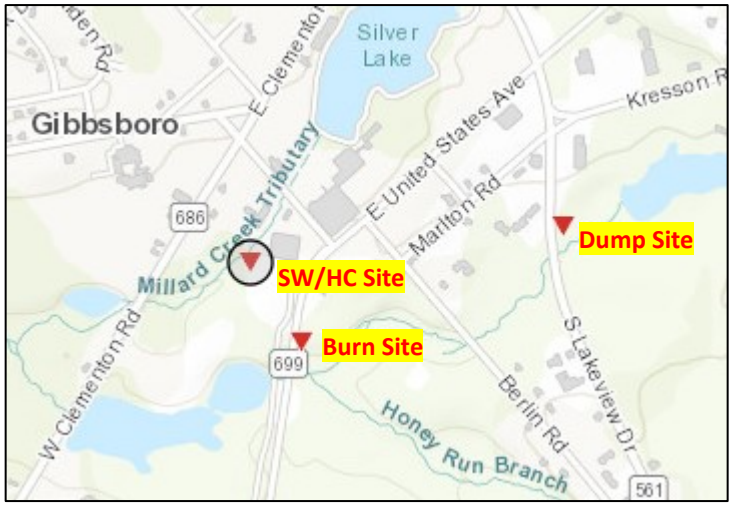
In June 2019, the Department of Justice (DOJ) entered a CD with the City of Philadelphia and its Redevelopment Authority to recoup $8.4 million of the remediation costs for the Lower Darby Creek Area Superfund Site. The settlement includes past costs (for the remedial investigation and feasibility study, design work, cleanup actions to address contaminated residential properties and PCB contamination at the landfill) and future costs (for capping the landfill, reinforcing the streambanks, and leachate collection and treatment).


Excavation of soil in front yards as part of residential yard cleanup.

The Site consists of two landfills near the City of Philadelphia. Waste disposal practices at the dumps contaminated soil, groundwater and fish tissue with hazardous chemicals and heavy metals such as lead. The EPA tested surface soil of residential properties for contaminants. In total, 40 of the residential parcels tested required remediation. All 40 properties have been remediated, with the final 3 completed in FY19. In addition to the residential properties, the EPA has been restoring public spaces at the Site. In 2019 so far, the EPA has excavated approximately 5,500 tons of contaminated soil from the Eastwick Regional City Park, backfilling it with clean soil and restoring the surface. The remaining 60 percent of the contaminated part of the park will be restored in 2020, along with additional wooded City property.

**Sherwin-Williams Sites**, New Jersey

From the mid-1800s until 1977, John Lucas & Company and eventually the Sherwin-Williams Company operated a paint manufacturing facility in Gibbsboro, New Jersey. Historic features previously located on Sherwin-Williams property included several of the manufacturing facility's wastewater and paint sludge settling lagoons, several tank farms, and open drum storage areas. Decades of direct discharge of materials to Hilliards Creek from lagoons, improper storage and handling and leaking tanks led to widespread soil, sediment, surface water and groundwater contamination. Hilliards Creek, which originates within the former manufacturing facility, is contaminated with lead and arsenic. Waste



disposal activities associated with the Sherwin-Williams manufacturing facility resulted in dumping of wastes at two additional locations separate from the manufacturing facility.

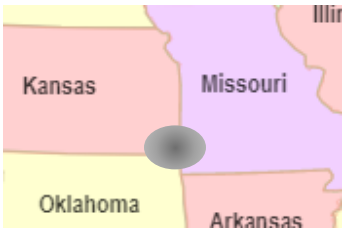
In January 2019, the DOJ lodged a CD for the Sherwin-Williams/Hilliard's Creek Superfund Site ("SW/HC Site"), the Route 561 Dump Site ("Dump Site"), and the United States Avenue Burn Superfund Site ("Burn Site") in New Jersey. The SW/HC Site is the location of a former manufacturing facility that produced oil-based paints, varnishes and lacquers. The Dump Site and the Burn Site were used to dispose of wastes from the former facility. The primary contaminants of concern at the Sites include lead, arsenic, and polycyclic aromatic hydrocarbons (PAHs).

The CD requires the Sherwin-Williams Company to:

1) Perform the remedial design and remedial action (RD/RA) for Operable Unit 2 of the Burn Site at an estimated cost of $21 million;
2) Perform the RD/RA for all remedies the EPA selects in the future for the Sites, subject to an innovative opt-out provision;
3) Pay the EPA $1.4 million of the approximately $2 million in outstanding past response costs; and
4) Pay the EPA's future response costs in overseeing the work to be performed pursuant to the CD.

If Sherwin-Williams elects to opt out of performing any of the future remedies as provided in CD, the U.S. may use other enforcement options to secure those remedies.

**Tri-State Mining District**




The following Sites are part of a large regional mining area known as the Tri-State Mining District located in southwest Missouri, southeast Kansas and northeast Oklahoma. The district produced lead and zinc for over 100 years. The Tri-State District includes several mining-related Superfund Sites, including the Tar Creek Superfund Site in Oklahoma and the Caney Residential Yards and Cherokee County Sites in Kansas. These Sites are divided into "operable units," discrete actions to incrementally address Site contamination. These Sites provide another demonstration of the ongoing nature and commitment of enforcement work at complex lead Sites. Many cleanups have been completed or are currently underway. Several earlier CDs with responsible parties have resulted in responsible party funding for investigations and cleanups at the Sites. Bankruptcy settlements have also yielded money for the cleanup of these Sites.

In October 2018, the EPA, the Department of the Interior, the Department of Agriculture, six states and seven tribes entered a CD with Blue Tee Corp., Brown Strauss, Inc., and three officers of Blue Tee to recover costs incurred and to be incurred, and damages resulting from the release of hazardous substances at twenty Superfund sites across the country. This settlement is valued at approximately $75.7 million. More details on three of the Sites that will receive a portion of the settlement follow.

**Caney Residential Yards & Cherokee County Sites**, Kansas

For Region 7, costs will be recovered by the EPA, Kansas and Missouri, the natural resource damage trustees, and tribes, with regard to the Caney Residential Yards and Cherokee County Sites in Kansas, and the Jasper County site in Missouri.

At Caney Residential Yards, approximately 990 properties were tested and 318 properties had at least one soil sample that exceeded the action level for lead. Cleanup has been completed on 309 of the 318 identified lead-contaminated properties. In total, 49,435 tons of contaminated soil have been removed from residential yards in Caney.

Mine tailing piles at the Cherokee County Site covered more than 4,000 acres of the 115 square miles Site. The mine tailings contaminated soils, surface water, sediments and groundwater with lead, cadmium, and zinc. To date, nearly three million cubic yards of mining wastes have been remediated on nearly 2,000 acres of the Cherokee County Site; over 700 residential yards have been remediated; and over 500 homes have been supplied with a clean, permanent source of drinking water.

**Tar Creek**, Oklahoma

In Region 6, $15 million was recovered under the Blue Tee CD related to the Tar Creek Superfund Site, within the Tri-State Mining District. The EPA, Oklahoma Department of Environmental Quality, and the Seven Downstream Tribes each receive part of the $15 million under the settlement. The money recovered under the Blue Tee CD will help support ongoing efforts by the Quapaw Nation in remediating the Superfund site on tribal land. In December 2018, the Bureau of Indian Affairs (BIA) recorded the first of four conservation easements restricting land use on a remediated Indian-owned property. This easement was the first time the BIA, in partnership with the EPA and a tribal nation, recorded land use restrictions on tribal restricted property at a Superfund site. To date, the four communities most impacted by mining waste participated in voluntary relocation efforts; cleanups at nearly 3,000 residential and high-access area properties with sensitive populations, such as daycare facilities and schoolyards, have been completed; over 4 million tons of mining waste and affected soils have been remediated; and over 800 acres have been reclaimed for reuse.