

Superfund sites

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It started with outcry about Love Canal, a 15-acre chemical landfill in Niagara Falls, N.Y., that came to public attention in 1978, and the Valley of the Drums in Brooks, Ky., where the Environmental Protection Agency in 1979 began investigating the contamination of 23 acres by the dumping of 1,500 drums of chemical waste that had begun to leak.

In 1980, spurred by public concern about hazardous waste pollution after those sites and others came to attention, Congress passed the Comprehensive Environmental Response, Compensation and Liability Act, directing the Environmental Protection Agency to identify such sites, clean them first and collect fines later.

The EPA was given a list of 120 "National Priority Sites," an allocation of \$1.6 billion and five years to do the work.

It wasn't nearly enough.

After the legislation expired in September 1985, Congress replaced it with the Superfund Amendments and Reauthorization Act of 1986 and provided \$9 billion more.

Today there are more than 1,200 sites on the National Priorities List - Lincoln Park in Canon City and Maywood in Bergen County, N.J., among them.

The EPA uses several sources to discover possible Superfund sites. Reports from citizens can trigger an investigation, as can an explosion or fire. Routine investigations and reports also can lead to an inquiry.

A Hazard Ranking System looks at how likely it is the site has or could release hazardous waste, the amount of toxicity of the waste, nearby people or environments that could be affected, and how the pollutant could be carried from the site in groundwater, surface water, soil or air.

If a site's scores warrant, the EPA can propose placing it on the National Priorities List.

Nearly 40,000 sites have been proposed for Superfund consideration. Among them, 37,357 have had a preliminary assessment, 18,129 a site inspection and as of Aug. 7 there were 1,220 on the National Priorities List with another 49 sites proposed for listing.

After a site has been listed, the EPA investigates the extent of the site contamination, studies possible cleanup remedies, decides which remedy to use (referred to as a Record of Decision), then plans and carries out the remedy.

A worker loads tainted soil into railroad cars at the Maywood Superfund site in New Jersey. The soil was headed to Utah. Daily Record/Don Smith

Funds for cleanup of Superfund sites can come from the parties responsible for the contamination or from the Superfund Trust Fund, a fund set up to collect money, primarily from taxes on chemical and petroleum companies for cleanup.

Final cleanup can be a long process. When no further action is needed at a site on the National Priorities List, it can be removed from the list.

As of Aug. 7, just 259 sites had been delisted.

Lincoln Park Superfund site

There are 16 active sites in Colorado on the Superfund National Priorities List.

The Lincoln Park site in Canon City - the area adjacent to Cotter Corp.'s uranium processing mill, was added to the National Priorities List on Sept. 21, 1984. Areas of concern included uranium and its decay products, molybdenum, selenium and other metals. According to the EPA, both groundwater and soils in the area were found to have more uranium and molybdenum than expected.

Cotter began operating the uranium mill in 1958, and between 1958 and 1978 discharged liquid and solid wastes into 11 unlined ponds. The ponds were replaced in 1982 with two lined ponds.

Cotter Corp. and the state of Colorado reached a settlement in 1988 that made Cotter responsible for cleanup of the site.

According to the Colorado Department of Public Health and Environment, the company has paid to hook up residences in Lincoln Park to the Canon City water supply. The company also installed an interceptor system to contain contaminated groundwater on site and a system below the Sand Creek dam to treat any contaminated water there. It also cleaned up several railroad loading areas around Canon City to remove uranium ore and other spilled materials, the CDPHE reported.

The EPA issued a Record of Decision in January 2002 that said all necessary work to deal with contaminated soils in the Superfund site had been done. The EPA has not yet issued a final decision on whether enough work has been done to address groundwater concerns.

The groundwater concerns need to be resolved before the site can be removed from the National Priorities List.

Maywood Superfund site

New Jersey has more active Superfund sites (111) than any state in the United States.

The site known as Maywood Chemical Co. in Bergen County was listed Sept. 1, 1983, a year before the Lincoln Park site at Canon City.

According to the Environmental Protection Agency, the Maywood company processed radioactive thorium ore from 1916 until the late 1950s. Tailings from the processing work contained low-level radioactive materials. Processing wastes were pumped into diked areas west of the plant.

Gamma radiation and radon, which come from the decay of the thorium, are considered the largest contributors to health risk for the people who work at the Maywood site, according to a plan for dealing with the soils, recently released by the U.S. Army Corps of Engineers. Currently the soil is fenced and guarded and the material is covered to reduce exposure.

Radon mitigation has also been a concern at contaminated buildings, according to the report.

According to the 2001 annual environmental monitoring report for the site, other substances detected included radium-226, radium-228, iron, manganese, arsenic and aluminium in surface water, and radium-226, radium-228, arsenic, beryllium, cadmium, chromium, lead, nickel and tetrachloroethene in on-site wells. Most were detected in amounts lower than state and federal standards allow.

According to the EPA, the soil contaminated by the chemical company operations spread beyond the company's property to contaminate residential neighborhoods in the area decades ago. A state highway was built through the disposal area in 1932, spreading the soil. Some of the waste material was excavated and used as fill dirt or mulch in the nearby communities of Maywood and Lodi. Other material went into a stream channel.

In 1959, Stepan Chemical Co. bought the Maywood company and many of its operations were discontinued, including work with thorium. Stepan began working to clean up the company site in the 1960s.

But in 1980, an area resident discovered radiological contamination on property formerly owned by Stepan, prompting testing between 1980 and 1983 by the state of New Jersey, the EPA and the Department of Energy, which found radioactive contamination in excess of state and federal guidelines at several sites.

Between 1984 and 1986, the Department of Energy removed about 35,000 cubic yards of soil and debris from the former location of the diked disposal areas and from residential properties in Maywood, Lodi and Rochelle Park. The material was stockpiled on 11.7 acres of land formerly owned by Stepan, located adjacent to the 18.2 acres the Stepan Co. currently owns. The storage area, now owned by the federal government, is known as the Maywood Interim Storage Site. The soil at the storage site, including soil yet to be excavated from the site, is what the Cotter Corp. wants to bring to Canon City.

Maywood residents have been pressing since at least 1986 to stop storage of contaminated soil at the interim storage site and to have the material removed.

The U.S. Army Corps of Engineers, through the Formerly Utilized Sites Remedial Action Program, is in charge of the cleanup effort.

According to the "Proposed Plan for Soils and Buildings at the FUSRAP Maywood Superfund Site," released in August, an estimated 281,288 cubic yards of material remains to be removed at the Maywood storage site.

Estimated cost to excavate and remove the material is \$254 million.

Allen Roos, FUSRAP project manager, said the soil to be removed from the interim site contains thorium, radium and uranium, all of which naturally occur in the monazite soils that the Maywood company formerly processed for thorium.

Though the amount of material to be removed is estimated at fewer than 300,000 cubic yards, the Army Corps of Engineers has asked to contract with Cotter Corp. to accept as much as 470,000 tons of soils from the Maywood site.

Depending on soil weight, which can vary according to the Colorado State University Soil and Crop Sciences Department, 470,000 tons would amount to between 348,148 and 447,619 cubic yards.

The actual amount of material to be removed at the Maywood storage site may be less, Roos said, but a high figure was used in case more material than expected must be removed. "A contract of that nature is not one you want to come up short."

To put the amount of material in perspective, the minimum amount of material that might be removed, 281,288 cubic yards, would cover a NFL football field and its end zones to a depth of 132 feet. At the maximum possible under the contract, 447,619 cubic yards, the field would be covered to a depth of 213 feet, or the equivalent of a 21-story building.

Roos said excavation work is currently going on at the Maywood Interim Storage Site and material previously excavated has been sent to Envirocare, a licensed disposal facility in Utah used for storage of contaminated soils, with which the Army Corps of Engineers has a contract.

Roos said the remaining material could be shipped to either Cotter or Envirocare. If the state of Colorado determines it is OK for Cotter to accept the soil, the Army Corps of Engineers will send it there, he said.

"We would ship to whatever is going to be the most effective way to manage the removal action, the cleanup we have to do."

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