

Dangerous Waste Soil Contamination

Lead

In contrast to natural background levels, the concentration of "lead in street dust and surface soil ranged from 1600 to 2400 milligrams per kilogram" in a 1972 NAS study of 77 Midwestern cities. The same study reported the "natural background level of lead in soil ranges from 2 to 200 milligrams per kilogram". Soil "near a lead mine in Idaho reached 20,000 milligrams (of lead) per kilogram". Grass samples near high traffic roads ranged from "250 milligrams per kilogram at the roadside to about 100 milligrams per kilogram at a distance of 25 meters from the road". *NAS (1972) Airborne Lead in Perspective, National Research Council, National Academy of Sciences, Washington D.C. quoted by Tsuchiya, K. in Handbook on the Toxicology of Metals, Volume II, p 309. Friberg, L., Nordberg, G., Vouk, V. (Editors.) Elsevier, New York 1986.*

Total Materials Consumption, An Estimation Methodology and Example Using Lead -- A Materials Flow Analysis is available from the US Geological Survey website at

<http://greenwood.cr.usgs.gov/pub/circulars/c1183/> [Exit Ecology](#)

Mercury

Mercury is normally present in the soil in low amounts from natural sources such as volcanic eruptions. An estimated 1000 metric tons a year in the United States comes from natural sources. Natural sources are estimated to provide a large volume of mercury but very small amounts in any given area. Mercury from human activities are thought to add smaller total volumes, but that are more heavily deposited in local areas. *The Materials Flow of Mercury in the United States, US Department of the Interior, Bureau of Mines Information Circular IC 9412, 1994*, estimates 1990 U.S. environmental mercury releases from the leading human activities:

- Mining and metal processing - 100 mt/yr (metric tons per year)
- Fossil fuel combustion (coal and oil burning) - 175 mt/yr

- The manufacture of chlorine and caustic soda - all reused within the industry
- The manufacture, use and disposal of consumer products (electric lamps, batteries, switches and paint) - 938 mt/yr

The Materials Flow of Mercury in the United States is available from the US Geological Survey website at

<http://greenwood.cr.usgs.gov/pub/min-info-pubs/usbm-ic/ic-9412/> [Exit](#)
Ecology

Large volumes of waste with lead, mercury and other dangerous wastes from consumer goods are deposited in municipal solid waste landfills every year:

Sources of Lead in Municipal Solid Waste (in tons)			
PRODUCT	1970	1986	2000
Lead-acid batteries	83,525	138,043	181,546
Consumer electronics	12,233	58,536	85,032
Glass & ceramics	3,365	7,956	8,910
Plastics	1,613	3,577	3,228
Soldered cans	24,117	2,052	787
Pigments	27,020	1,131	682
All others	12,567	2,537	1,701
TOTAL	164,840	213,652	281,887

Source: EPA Sources of Pb & Cd Report, Franklin Assoc.

Sources of Mercury in Municipal Solid Waste (in tons)			
PRODUCT	1970	1986	2000
Household batteries	310.8	621.2	98.5
Electric lighting	19.1	26.7	40.9
Paint residues	30.2	18.2	0.5
Fever thermometers	12.2	16.3	16.8
Misc. electronics	7.8	11.6	12.2
Pigments	32.3	10.0	1.5
All others	9.4	5.0	2.3
TOTAL	421.8	709.0	172.7

Source: EPA Sources of Pb & Cd Report, Franklin Assoc.

Sources of Cadmium in Municipal Solid Waste (in tons)			
PRODUCT	1970	1986	2000
Household batteries	53	930	2,035
Plastics	342	502	380
Consumer electronics	571	161	67
Appliances	107	88	57
Pigments	79	70	93
Glass & ceramics	32	29	37
All others	12	8	11
TOTAL	1,196	1,788	2,684

Source: EPA Sources of Pb & Cd Report, Franklin Assoc.

<http://www.ecy.wa.gov/programs/hwtr/demodebris/pages2/dwinsoil.html>