

Toxic Hazardous Waste in the U.S.

Over 40 million tons of hazardous waste is produced in the United States each year. It is produced by large industrial facilities such as chemical manufacturers, electroplating companies, petroleum refineries, and by more common businesses, such as dry cleaners, auto repair shops, hospitals, exterminators and photo processing centers. The EPA has produced a list of more than 500 hazardous wastes and works with businesses and state and local authorities to ensure these wastes are properly treated and disposed of. The EPA conducts risk management studies to ascertain the potential health effects of exposure to these wastes, and oversees “*Superfund*” and other programs that clean-up contaminated waste sites.



. . . **about toxic waste cases in the U.S., and the disposal of hazardous chemicals into our environment.**

Some of the products we use are too toxic (poisonous or hazardous) to be simply thrown away or recycled. They must be disposed of correctly, and if not disposed of correctly, paints, pesticides, solvents, some cleaners, and heavy metals can contaminate an entire landfill, leak into the ground water supply, or drain to other areas long distances away from the original site.

The city of Los Angeles city gets 15% of its water from [groundwater](#). Some of the groundwater is already contaminated. Since ***only 1% of the earth's water is fresh water in the first place***, preserving the remaining water supply is important. Once contaminated, the ground water may be expensive, if not impossible, to detoxify.

- [The Story of a Neighborhood Toxic Waste Site.](#)
- [The Top 20 Hazardous Substances](#)
- [Alternatives for Household Toxic Products](#)

Over 1,200 industrial sites have been identified by 1990 as Super Fund sites by the Environmental Protection Agency (EPA). By 1993 about 50 sites had been cleaned up. Los Angeles County operates a household toxic waste dropoff program for used motor oil, radiator fluid, batteries, paints, solvents, etc. Some gas stations collect used motor oil. However, only 5% of the toxic waste is probably collected.

Many of these chemicals are illegally poured into storm drains, and become the single largest source of pollution in the Santa Monica and San Pedro bays. This problem is called [nonpoint source pollution](#), since it does not come from any single source such as a factory or power plant. There are several [suggestions](#) you can follow to keep trash, and garden and automotive chemicals out of storm drains.

Used motor oil alone accounts for a massive waste disposal problem. For example, Americans use about one billion gallons of motor oil each year, and 350 million gallons of that end up in the environment. That amount of used oil illegally poured into backyards and storm drains each year is equal to ten times the amount of oil that was spilled in the Exxon Valdez tanker accident in late 1980s. It only takes one quart of motor oil disposed of improperly to eventually contaminate 250,000 gallons of ground water. Recycle used motor oil at selected gas stations or toxic waste round-ups (see phone numbers below for more

information). The City of Lakewood offers [free oil recycling kits](#) to its residents. The City of Los Angeles publishes an on-line [household hazardous waste collection schedule](#), and a list of [used oil collection centers](#).

Historically the United States has not done a very good job at recycling or detoxifying hazardous waste. Fifteen years ago about two thirds of our hazardous waste was dumped on the land, surface ponds, pits, and landfills. About 22 percent was disposed of into sewers, streams, and rivers. Only about 11 percent was recycled or detoxified.

If you see a possible illegal hazardous waste spill in Los Angeles, call (800) 988-6942 and report the incident. You may be eligible for a reward of up to \$5,000.

For more information on disposing of toxic waste, contact:

- [L.A City Hazardous Waste Collection](#).....(800) 98-TOXIC or 988-6942
- [Sanitation Districts of L.A. County](#)(800) 238-0173 or (888) CLEAN-LA
- [L.A. County Dept. of Public Works](#)(800) 552-5218
- [Santa Monica](#).....(310) 456-8227
- [Orange County](#).....(714) 834-6752
- [South Bay Cities](#) hazardous waste information.

A Fateful Meeting

April 1, 2002

by [Tom Kruzen](#)

My eyes raced through Duff Wilson's "**Fateful Harvest**", spotting characters I know from an issue with which I have been acquainted for some time. Quincy, Washington's Patty Martin could be Herculaneum, Missouri's, Leslie Warden. Both women are bravely fighting a lonely battle to stop stupid men from poisoning innocent people. Patty, snarling out the truth about hazardous waste being turned into fertilizer, as doggedly as Hercule Poirot, unknowingly crosses paths with a toxic issue in Missouri. Leslie Warden, stubborn like Patty, is trying to save the people in her town, where the **Doe Run** – a lead smelter – is contaminating the homes and may be contributing to the early deaths of the people in Herculaneum.

When I read in "**Fateful Harvest**" that "*baghouse dust*" was being used to make fertilizer, my heart sank to below my feet. A "*baghouse*" is a filter for a smelter to trap fugitive dust particles of lead, cadmium, arsenic, zinc and other heavy metals. The smelter has other "waste products" like black acid, a witches brew of sulfuric acid and heavy metals. **Doe Run** just about gives this away to **Frit Industries** in Walnut Ridge, Arkansas. Bingo! This company that Leslie and others are fighting, because it's poisoning their town, is suddenly in the middle of Patty Martin's fight. She is trying to convince the American people that **Doe Run** and a myriad of other dirty businesses are solving their toxic waste disposal problems by feeding it to all of us. If that is not the most stupid idea, a more hideously stupid one is that the EPA and Congress are allowing this to go on. It is totally LEGAL!!!

Unfortunately, the ***Doe Run*** and ***Frit*** connection is only one of many! Read Duff Wilson's excellent expose to find out if a company near you is causing harm to your community. Then, talk to the farmers and neighbors in your community to alert them of the danger to our food supply. This book may save our lives and our civilization!



WASTE LANDS: THE THREAT OF TOXIC FERTILIZER

Report by
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May 3, 2001

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The recycling of hazardous industrial wastes into fertilizers introduces several dozen toxic metals and chemicals into the nation's farm, lawn and garden soils, including such well-known toxic substances as lead and mercury. Many crops and plants extract these toxic metals from the soil, increasing the chance of impacts on human health as crops and plants enter the food supply chain. This report documents the highly toxic substances found by testing fertilizers, as well as the strict regulations needed to protect humans and the environment from these toxic hazards.

Between 1990 and 1995, 600 companies from 44 different states sent 270 million pounds of toxic waste to farms and fertilizer companies across the country.¹ The steel industry provided 30% of this waste. Used for its high levels of zinc, which is an essential nutrient for plant growth, steel industry wastes can include lead, arsenic, cadmium, chromium, nickel and dioxin, among other toxic substances. Although the industrial facilities that generate these toxic wastes report the amount of chemicals they transfer off-site to the U.S. Environmental Protection Agency's (U.S. EPA) Toxics Release Inventory every year, they only report the total amount of a given chemical contained in wastes transferred over the course of a year, making it difficult to determine the chemical make-up of a given waste shipment. With little monitoring of the toxics contained in fertilizers and fertilizer labels that do not list toxic substances, our food supply and our health are at risk.

TESTED FERTILIZERS CONTAIN HARMFUL TOXIC METALS

California Public Interest Research Group (CALPIRG) Charitable Trust and Washington's Safe Food and Fertilizer tested 29 fertilizers from 12 states² for 22 toxic metals. This report documents the results of these fertilizer samples, demonstrates that the problem of toxic fertilizers is widespread, and details concerns with proposed regulations for the practice. **Twenty-nine tested fertilizers contained twenty-two toxic heavy metals.** These metals are linked to either ecological or human health hazards. Most noticeable is the wide array of toxic metals that exist in fertilizers.

Metal Tested	Number of Fertilizers Containing the Metal
Aluminum (Al)	29
Antimony (Sb)	29
Arsenic (As)	29
Barium (Ba)	29
Beryllium (Be)	29
Boron (B)	29
Cadmium (Cd)	29
Chromium (Cr)	29
Cobalt (Co)	29
Copper (Cu)	29
Iron (Fe)	29
Lead (Pb)	29
Manganese (Mn)	29
Mercury (Hg)	29
Molybdenum (Mo)	29
Nickel (Ni)	29
Selenium (Se)	29
Silver (Ag)	29
Thallium (Tl)	29
Vanadium (V)	29
Uranium (U)	29
Zinc (Zn)	29

All commercial fertilizers made from recycled materials such as hazardous wastes, and produced for the general public's use are subject to the federal Land Disposal Restrictions (LDRs).³ Land disposal restriction standards, which are levels of concern that are limits for keeping hazardous wastes from leaching from a lined landfill, exist for thirteen of the twenty-two metals for which we tested.⁴ Land disposal standards do not protect human health and the environment. While exceeding these levels of concern is not an indication that a fertilizer has violated the law, such exceedences indicate that some tested fertilizers have the potential to violate federal regulations.

Twenty fertilizers tested higher than levels of concern. One fertilizer – The Anderson 0-0-0, 36% Zinc (from Michigan) – exceeded six levels of concern. It also contained the highest levels of antimony, cadmium, chromium, nickel, silver and lead of any fertilizer we tested and the second highest levels of beryllium, selenium and mercury. In all, the twenty fertilizers exceed levels of concern for nine toxic heavy metals. The most frequently exceeded levels of concern were for cadmium, chromium and vanadium.

These results indicate that fertilizers often contain high levels of harmful toxic metals that exceed levels of concern and could violate federal law.

Labeling is inadequate. Because fertilizer labeling laws only require beneficial nutrients, like zinc or phosphate, to be listed, fertilizers are sold directly to the public and farmers without warnings or information that informs consumers about the presence and quantity of toxic metals. Also, there is no indication on fertilizer labels as to whether or not the fertilizers we tested have been further treated to meet federal land disposal standards. Inadequate labeling requirements mean consumers do not have the necessary information to make informed decisions about products at the time that they are purchased to best protect the health of their families.

Each of these metals is suspected or known to be toxic to humans and the environment by the U.S. EPA. Nine metals, such as arsenic and lead, are known, or suspected, to cause cancer, and ten metals, such as mercury, are linked to developmental effects. Three of the tested metals – lead, cadmium and mercury – are also persistent bio-accumulative toxins (PBTs). PBTs persist for long periods of time in the environment, some indefinitely, and they can accumulate in the tissues of humans and wildlife, increasing the long-term health risks at even low levels of exposure. These three metals cause cancer, birth defects, or reproductive problems.⁵

TOXIC FERTILIZERS THREATEN HUMAN HEALTH

The toxic substances found in the tested fertilizers have been linked to adverse human health impacts. The metals found in these fertilizers are known or suspected carcinogens, reproductive and developmental, liver, and blood toxicants. For example, beryllium is a suspected carcinogen, chromium and arsenic are known to cause cancer and barium can cause kidney and lung damage.

Children are most susceptible to the toxic effects of most metals, especially lead, which has been the subject of intense government efforts to reduce lead exposure to children. Products like fertilizer are of great concern as children spend more time on or near the ground and are often exposed to ground level substances through hand-to-mouth behavior.

TOXIC FERTILIZERS THREATEN AGRICULTURAL SOILS, FOOD SAFETY AND WATERWAYS

As demonstrated in this report, the tested fertilizers contain toxic substances at high levels. These substances can accumulate in agricultural soils, become available for plant uptake, and run off into waterways.

AGRICULTURAL SOIL QUALITY

Farming, especially single-crop farming, requires consistent and dependable soil conditions. The introduction to farm soils of toxic substances like lead and cadmium can adversely affect growing conditions and result in increased toxic accumulation as these metals are highly persistent in soils. This can negatively affect critical growing requirements, such as soil acidity or the solubility of beneficial metals like zinc in the soils.

PLANT UPTAKE

Some crops are more likely than others to absorb non-nutrient toxic substances from soils. For example, fruits and grains can absorb lead, and lettuce, corn and wheat can absorb cadmium from soils. ⁶ This means that our food supply is at risk of contamination by toxic substances that could threaten human health.

WATER QUALITY

The overall health of the nation's waterways has declined dramatically over the last 25 years. Forty percent of our rivers, lakes, and estuaries are still too polluted for safe fishing or swimming ⁷. Agricultural runoff is a common cause of waterway pollution. A 1998 U.S. EPA report found that metals are the second most common pollutants found in lakes, ponds, reservoirs, and estuaries. In fact, agriculture is the industry most responsible for lake pollution. ⁸ The introduction of toxic substances from fertilizers to agricultural environments will only add to their concentrations in waterways that state and federal agencies are working to make safe for fishing and swimming.

MISGUIDED POLICIES AND TOXIC LOOPHOLES

Labeling is inadequate. Fertilizer labeling laws do not require listing toxic metals like lead, cadmium and chromium that are not essential to plant and crop growth. Without listing all the ingredients present in fertilizers, consumers cannot make decisions that will protect their soils, crops and plants, or their health.

Existing standards for toxic metals in fertilizers are inadequate for protecting our soils, crops, plants, water, air and health. All commercial fertilizers made from recycled materials, such as hazardous wastes, and produced for the general public's use are subject to the federal Land Disposal Restrictions. ^{9 10} The U.S. EPA's federal Land Disposal Restrictions, which are applied to zinc fertilizers ¹¹ that contain toxic waste, are intended to ensure that toxic substances are properly treated before the waste is disposed of in heavily regulated, lined landfills. Land Disposal Restriction standards are technology-based standards, which means that they are designed to predict the ability of a hazardous waste to leach from these landfills.

These standards are not risk- or health-based standards. Using these standards for fertilizers can result in unacceptable health risks because of unanticipated uptake by plants, migration of toxic substances to

groundwater more easily than would occur from a lined landfill, generation of airborne dusts, or exposure to humans, including children and farm workers. Land Disposal Restrictions are inadequate for regulating the application of hazardous wastes, via fertilizers, to farms, lawns and gardens or for use as animal feed.

As hazardous wastes continue to burden regulatory agencies, municipalities, and the industries that generate them, regulators are under increasing pressure to find ways to treat, handle, and dispose of wastes. U.S. EPA encourages the reuse and recycling of industrial wastes, including hazardous wastes, as a way of handling increasing waste quantities, when such wastes can be used as substitutes for virgin, raw materials. ¹²

Unfortunately, the recycling of hazardous wastes into fertilizer products does not always include the process of treatment or cleaning of hazardous waste, but rather dilution of the waste. Dilution involves adding substances to a waste to reduce the concentration of toxic substances that are present in the waste. Dilution does not reduce the toxicity of the hazardous constituents. ¹³ Federal law specifically prohibits dilution as a form of treatment. ¹⁴

RECOMMENDATIONS

No uniform law for regulating the toxicity or labeling of the nation's fertilizers exists. Rather, myriad hazardous waste laws and regulatory bodies are responsible for various aspects of the practice of recycling industrial waste into fertilizers, often with little enforcement or oversight. As a result, the fertilizers we use on our farms and gardens contain high levels of toxic metals that are also not listed on the label. We encourage state and federal agencies to:

- 1) Ban the use of hazardous wastes for manufacturing fertilizers. The presence and quantity of toxic substances in fertilizers vary widely but occur at high levels. These substances are not essential to crop and plant growth and can negatively affect soil and food quality and human health. Current regulatory strategies have been inadequate for protecting farmers and growers, home-use consumers and specialty users from the accumulation of toxic substances from fertilizers in our farms, lawns and gardens.
- 2) Adopt expanded right-to-know provisions for all hazardous wastes going into fertilizer. Consumers should be made aware of the presence and quantity of all ingredients in fertilizers at the point-of-purchase on the product label. Such information is necessary to allow consumers to make informed choices about protecting soil, crop and plant quality and their own health.
- 3) Stop exempting hazardous wastes being made into fertilizers from important treatment, storage and disposal tracking requirements. The generation, treatment, storage, transport, disposal and receipt of hazardous wastes is tracked, or manifested by authorized state agencies. As soon as the waste becomes a recycled product, like a fertilizer, the tracking requirements end. The tracking of industrial wastes from "cradle to grave" and maintaining stringent handling requirements are significant components to ensuring protection of public and environmental health. Any exemptions in these areas put the public at risk.

¹ "Factory Farming: Toxic Waste and Fertilizer in the United States, 1990-1995," Environmental Working Group, 1998.

² In addition to California, Georgia, Idaho, Indiana, Michigan, Minnesota, Montana, North Carolina, Pennsylvania, Texas, Virginia, and Washington states, the tested fertilizers (See Appendix B) are available in many other states. This is especially true for home and garden fertilizers like Scotts.

³ 40 CFR 266.20, 40 CFR 268.40 (i)

⁴ Zinc fertilizers are subject to less stringent Phase III Land Disposal Restrictions, which do not include beryllium and vanadium. Zinc fertilizers made from electric arc furnace dust (K061) are not subject to standards. 40 CFR Part 268, [FRL-6153-2], RIN 2050-AE05, EPA, 1998.

⁵ **"Visualizing Zero: Eliminating Persistent Pollution in Washington State."** Washington Toxics Coalition, 2000.

⁶ Wilson, D., **"Fear in the Fields,"** The Seattle Times, July 3, 1997, citing Agency for Toxic Substances Disease Registry, EPA.

⁷ **Error! Hyperlink reference not valid.**

⁸ National Water Quality Inventory: 1998 Report to Congress (EPA841-R-00-001)

⁹ 40 CFR 266.20 and 40 CFR 268.40 (i)

¹⁰ The exception is K061 (the waste code for electric arc furnace dust produced by steel mills) which are not subject to regulation.

¹¹ Non-zinc fertilizers are subject to Universal Treatment Standards, 40 CFR 268.48

¹² <http://www.epa.gov/epaoswer/hazwaste/recycle/fertiliz/index.htm>

¹³ Environmental Protection Agency, EPA530-F-99-043, December 1999.

¹⁴ 40 CCR 268.3,: *"Dilution prohibited as a substitute for treatment."* In addition, 40 CFR 268.2 (k) states, *"Any deliberate mixing of prohibited hazardous waste with soil that changes its treatment classification (i.e., from waste to contaminated soil) is not allowed under the dilution prohibition in section 268.3"*.

1. Toxic Waste: Clean-Up, or, Cover-Up?

by Malcolm E. Weiss - [Science](#) - 1984 - 83 pages Examines the increasing problem of hazardous waste disposal in our society.

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2. Toxic Waste

by Susan Dudley Gold - [Juvenile Nonfiction](#) - 1990 - 47 pages

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3. Toxic Waste

by Tony Hare - [Science](#) - 1991 - 32 pages

Examines the origins of toxic waste, both in industry and the home, and explains what we can do to avoid some of its dangers.

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4. Toxic Waste

by Margaret Spence - [Science](#) - 1992

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5. Toxic Waste

by George H. Jenkins - [Juvenile Nonfiction](#) - 1991

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6. [Poisoning for Profit: The Mafia and Toxic Waste in America](#)

by Alan A. Block, Frank R. Scarpitti - [True Crime](#) - 1985

... regard to toxic waste disposal and recounts the stories of the few investigators who have tried to expose he multimillion-dollar black-market service.

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[Toxic Waste Minimization in the Printed Circuit Board Industry](#)

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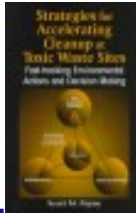
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[Whose Backyard, Whose Risk: Fear and Fairness in Toxic and Nuclear Waste Siting](#)

by Michael B. Gerrard - [Technology & Engineering](#) - 1996 - 347 pages

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[Strategies for Accelerating Cleanup at Toxic Waste Sites: Fast-tracking ...](#)

by Scott M. Payne - [Technology & Engineering](#) - 1998 - 432 pages

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[Toxic Waste: Chemical Spills in Our World](#)

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