

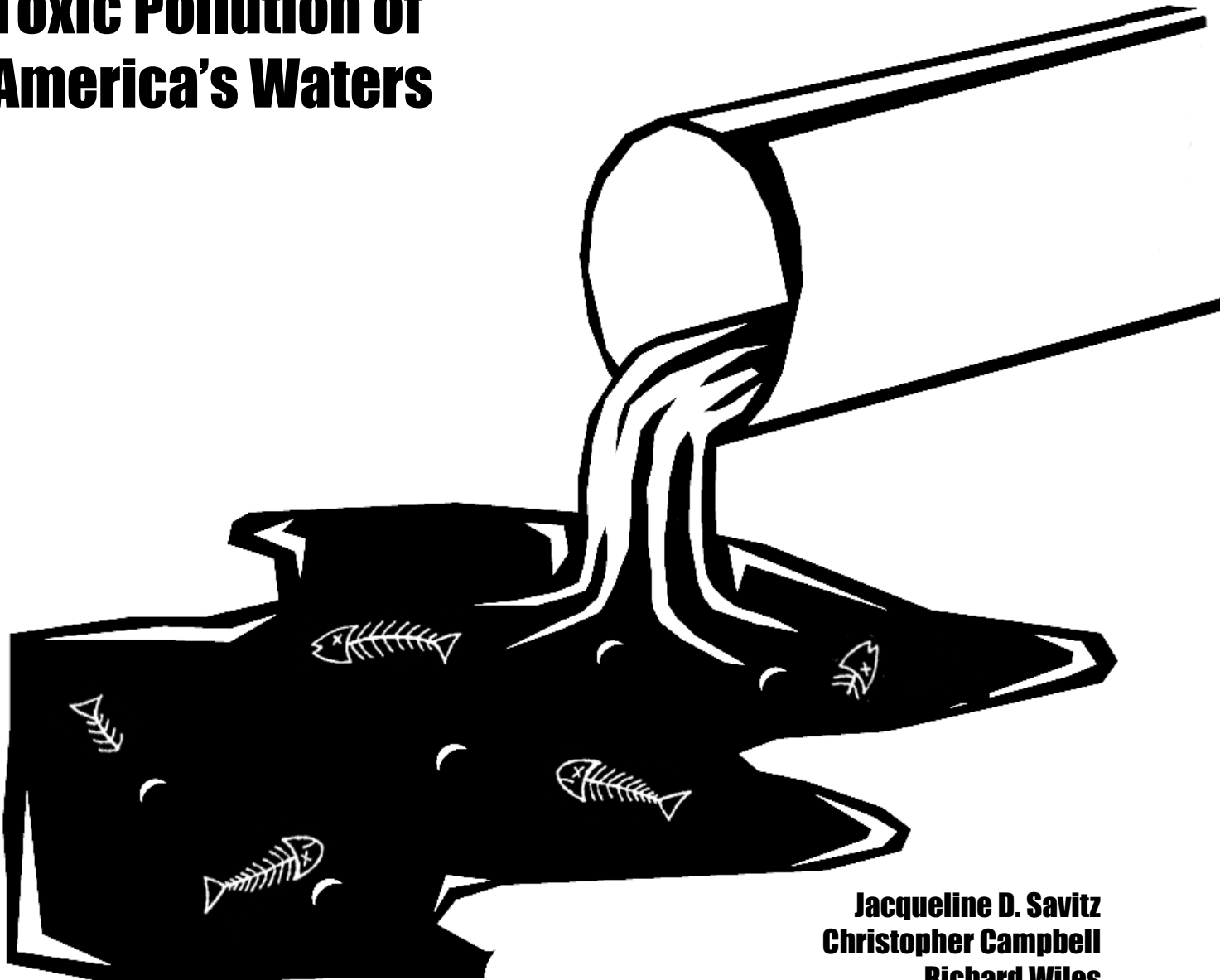


The State PIRGs



Dishonorable Discharge

Toxic Pollution of America's Waters



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Foreword

So what's the big deal? It's been *years* since an American river burst into flames.

In a nutshell, the deal is this: Chemical plants, pulp mills, steel factories and all manner of other manufacturing concerns dumped more than a billion pounds of toxic chemicals into America's rivers, lakes, streams, bays and coastal waters between 1990 and 1994. Another huge load of toxic substances—we estimate about 450 million pounds worth—ended up in U.S. waters during that 5 years after having been flushed by factories through sewage treatment plants. The vast majority of this pollution was, and is, legal. The effects of the various pollutants, and the chemical soups they form in most rivers, have scarcely been studied, much less understood. The toxic emissions we report in this study, massive though they are, are but a fraction of the total pollutant load entering the nation's waterways—maybe 5 percent. Many polluting facilities are not required to report all of what they dump into rivers or sewers. Many chemicals are not on the government checklist for those facilities that *are* required to report. And most Americans have no idea who's dumping how much of what pollutants into their favorite river, lake or bay.

As a result of this continuing pollution, thousands of water bodies nationwide are damaged, as are the economies that depend on them, from tourism to fisheries. And the toxic load only adds more stress to the nation's aging and overworked drinking water infrastructure.

Dishonorable Discharge: Toxic Pollution of America's Waters, presents a national overview of toxic emissions that enter the nation's rivers, lakes and bays, based on the Federal government's most recent Toxic Release Inventory (TRI). State-level versions of the report provide further detail, including pollution loadings for every TRI-reporting facility in the country. *Dishonorable Discharge* builds on previous studies of TRI pollutants in water that were prepared by U.S. PIRG and the State PIRGs, and Carolyn Hartmann, environmental program director with U.S. PIRG, is an author of this study. Thanks to Richard Wiles, EWG vice president for research, and EWG analysts Jackie Savitz and Christopher Campbell, this report represents the first attempt that we know of to use publicly available data in order to depict TRI water emissions to specific water bodies nationwide. *Dishonorable Discharge* also presents the first, rough estimate of toxic loadings to water bodies that result when factories—as the EPA puts it—"transfer" toxic materials to taxpayer-owned sewer systems.

This is one in a planned series of reports that make the case for full public disclosure about any use, transport or release of any toxic substance that might pose a risk to public health or the environment. The idea is simple enough: if Americans are exposed to toxic substances, they have a right to know about it. Our rivers may not catch fire these days, but this idea will.

Kenneth A. Cook
President, EWG

Most Americans have no idea who's dumping how much of what pollutants into their favorite river, lake or bay.

Executive Summary

Under existing federal pollution control laws, the American people are kept in the dark about the vast majority of toxic pollution spewed into the environment by U.S. industry. Even the most comprehensive toxic pollution reporting system in the nation, the Toxics Release Inventory (TRI), accounts for only about 5 percent of all toxic pollution of the environment each year (GAO 1991, EPA 1996c).

Most pollution of America's waters is unregulated and unmonitored — allowing polluters to pollute with little fear of regulation or disclosure. A 1994 study by the General Accounting Office, a research and auditing arm of the Congress, found that the majority of toxic pollutants discharged from 200 of 236 pesticide, pharmaceutical, and paper plants it examined, were so-called “uncontrolled” pollutants that are exempt from regulation under the pollution permitting process of the Clean Water Act (GAO 1994). The Environmental Working Group estimates that the total load of toxic pollution in most rivers, streams, lakes, and bays over the past five years may be 20 times greater than the amounts reported in *Dishonorable Discharge*.

More than one billion pounds of toxic chemicals were discharged directly to America's waters between 1990 and 1994, according to TRI records analyzed in *Dishonorable Discharge*. An additional 450 million pounds were discharged to the nation's waters by polluting facilities, via sewage treatment plants built and operated at the expense of American taxpayers.

The Most Polluted Waters

More than 700 million pounds of toxic chemicals were reported dumped into the Mississippi River between 1990 and 1994, more than twice the amount of toxic chemicals dumped into all other U.S. waters combined. Ninety percent of this pollution came from three fertilizer plants in Louisiana, which dumped 643 million pounds of toxic substances in the Mississippi during this five year period. The next most polluted waters, in terms of toxic chemical discharges, were the Pacific Ocean, the Ohio and Tennessee Rivers, the Houston Ship Channel, Ward Cove in Alaska, the Savannah River between Georgia and South Carolina, and the Delaware River, between New Jersey and Pennsylvania. More than 1 million pounds of toxic chemicals were dumped directly into each of 63 different rivers, harbors, and bays between 1990 and 1994.

For 80 percent of rivers and waters receiving toxic pollution, one polluter accounted for all reported toxic discharges during the five year period analyzed; for 92.7 percent of all waters, three or fewer polluters accounted for all reported toxic discharges during this time. Bearing in mind the significant shortcomings with TRI data, these figures nonetheless suggest that significant water quality improvements in some watersheds might be achieved through efforts that target a few major polluters.

Many rivers receive huge amounts of toxic effluent via “publicly owned treatment works” (POTWs), commonly

Most pollution of America's waters is unregulated and unmonitored.

More than one billion pounds of toxic chemicals were discharged directly to America's waters between 1990 and 1994.

An additional 450 million pounds were discharged to waters via sewage treatment plants.

More than 1 million pounds of toxic chemicals were dumped directly into each of 63 different rivers, harbors, and bays between 1990 and 1994.

In many cases rivers that receive relatively little direct toxic pollution are the targets of enormous amounts of toxics via sewage treatment plant outflow.

30 million pounds of carcinogens, reproductive toxins, or persistent toxic metals were discharged directly to waters during this five year period.

known as sewer systems. Huge amounts of toxic material are “transferred” to sewage treatment plants by polluters, in part because regulations governing disposal of toxics in this fashion are even weaker than the discharge permits required under the federal Clean Water Act. The EPA does not count these transfers as releases to the environment in the TRI, although the agency estimates that 25 percent of the toxic chemicals sent to sewage treatment plants flow through these facilities to receiving waters (EPA 1996b).

Dishonorable Discharge presents the first estimates of the portion of these so-called toxic “transfers” to POTWs, a large share of which is discharged to specific rivers and bodies of water. In many cases rivers that receive relatively little direct toxic pollution are the targets of enormous amounts of toxics via sewage treatment plant outflow. For example, less than 1 million pound of toxics were directly dumped into the Illinois River between 1990 and 1994, compared to an estimated 13 million pounds discharged to the river basin via sewage treatment plants during that same period of time. Gravelly Run in Virginia received 6.3 million pounds of direct discharges, between 1990 and 1994, in contrast to an estimated 20 million pounds of toxics that may have been dumped into it via the sewage treatment plant during that same five year period. By EWG estimates, the Kalamazoo River in Michigan, the Sacramento River in California, and Onondaga Lake in Syracuse, New York, may have received more than 95 times the amount of toxic chemicals via sewage treatment plants than were directly discharged into these waters. EWG estimates that the Raritan River in New Jersey received 50,000 times more toxic pollution from POTWs (12.6 million pounds) than the TRI reported as being directly discharged into that river between 1990 and 1994.

Chemical Discharges

More phosphoric acid, ammonia, and sulfuric acid were discharged to Americas’ waters between 1990 and 1994 than any other chemicals in the TRI, at 544 million, 188 million, and 122 million pounds respectively. Phosphoric acid and ammonia present serious threats to the aquatic environment when discharged in large quantities such as those reported here, because they can be converted to the nutrients phosphate and nitrogen in water. Phosphate and nitrogen are primarily responsible for the low-oxygen conditions that threaten whole ecosystems such as the Chesapeake Bay and portions of the Gulf of Mexico.

Sulfuric acid discharges to water are no longer reported to the TRI. The compound, however, continues to be dumped to waters in substantial amounts and contributes substantially to disruptions of local ecosystems. Temporary but significant increases in acidity of waterbodies are likely to occur near major sulfuric acid discharge points, which can in turn create toxic conditions for aquatic life by liberating toxic metals that are chemically bound to sediment under normal conditions.

Highly Toxic Discharges

The vast majority of toxic chemicals have not been fully studied for their health and environmental effects. At a minimum, however, all of the chemicals reported here have triggered one of the EPA criteria for TRI listing. (See sidebar, *How Toxic is Toxic?*).

Based on official determinations by federal and state health and environmental officials, TRI records indicate that nearly 30 million pounds of carcinogens, reproductive toxins, or persistent toxic metals were discharged directly to waters during this five year period. Fifteen (15) million pounds were persistent toxic metals like ar-

senic, lead, chromium, and zinc, which last in the environment virtually forever. Another 11.5 million pounds of material released into water were carcinogenic industrial chemicals like formaldehyde, chloroform, vinyl chloride and benzene, and nearly 5 million pounds of the pollutants were reproductive toxins such as toluene, lead, and nickel.

Carcinogens. Eastman Kodak Company dumped more cancer causing chemicals into the nation's waters than any other company, 879,000 pounds between 1990 and 1994, according to the TRI. All of these discharges went into the Genesee River in New York. Kodak was followed by Cytec Industries in Wallingford, Connecticut, Weyerhaeuser and Longview Fibre Companies, both of Longview Washington, and Pfizer Inc. of Groton, Connecticut.

The Columbia River received the most cancer causing toxic chemical discharges between 1990 and 1994, at 1.39 million pounds, followed by the Quinnipiac River in Connecticut, the Genesee River in New York, the Mississippi River, and the Thames River in Connecticut.

The waters of Washington state received the most cancer causing substances, 1.76 million pounds, followed by the waters of Connecticut, New York, and Louisiana.

Reproductive Toxins. The Tennessee Eastman Division of Eastman Chemical, in Kingsport, Tennessee dumped more reproductive toxins into the nation's waters than any other facility, 286,000 pounds, according to TRI records for 1990 through 1994. All of these discharges went into the Holston River. DuPont company in Old Hickory, Tennessee, Pfizer Inc. in Groton, Connecticut, S.D. Warren Company in Skowagen, Maine, and James River Paper Company in Clatskanie, Oregon round out the top five dischargers of reproductive toxins

to America's waters during the five year period analyzed.

More reproductive toxins were dumped in the Holston River in Tennessee, 286,000 pounds between 1990 and 1994, than any other body of water in the United States, according to the TRI. Next in rank are the Kennebec River in Maine, the Cumberland River in Tennessee, the Thames River in Connecticut, and the Columbia River in the Washington and Oregon.

The waters of Tennessee received more reproductive toxins than any other state, with 742,000 pounds discharged during the five year period analyzed. Tennessee is followed by Maine, Connecticut, and Texas.

Persistent Toxic Metals.

Bethlehem Steel in Sparrows Point, Maryland, dumped more persistent toxic metals to the nation's waters than any other facility in the nation, 851,000 pounds between 1990 and 1994, according to the TRI. Most of these metals were dumped into Old Road Bay, at the mouth of the Patapsco River, on the Chesapeake Bay. The next largest dischargers of persistent toxic metals were Amoco Chemical in Decatur, Alabama, with 729,000 pounds, Weirton Steel in Weirton, West Virginia, with 617,000 pounds, Elkem metals in Marietta, Ohio, with 540,000 pounds, and Eastman Kodak in Rochester New York, with 507,000 pounds.

More persistent toxic metals were dumped into the Ohio River than any other body of water in the United States, 1.1 million pounds between 1990 and 1994, according to TRI estimates. The Tennessee River ranks next with 774,000 pounds, followed by Old Road Bay in Maryland on the Chesapeake Bay, with 759,000 pounds, the Savannah River between Georgia and South Carolina, with 525,000 pounds, and the Genesee River in New York with 507,000 pounds.

Alabama waters received more persistent metals between 1990 and 1994 than

Eastman Kodak Company dumped more cancer causing chemicals into the nation's waters than any other company between 1990 and 1994.

The Columbia River received the most cancer causing toxic chemical discharges between 1990 and 1994.

Bethlehem Steel in Sparrows Point, Maryland, dumped more persistent toxic metals to the nation's waters than any other facility in the nation.

More persistent toxic metals were dumped into the Ohio River than any other body of water in the United States.

any other state, 1.67 million pounds, according to the TRI. Maryland ranked second, followed by the waters of Texas, Ohio and Georgia.

Recommendations

Americans should have a right to know about any use, transport, or release of any toxic substance in their communities that might pose a risk to human health or the environment. Required reporting under the TRI provides only a small portion of this information.

Comprehensive community right-to-know laws are a low cost, market-based step toward environmental and health protection. As a part of a comprehensive right-to-know based pollution prevention strategy, full accounting of toxic material use can reveal many cost-effective opportunities for pollution prevention. In New Jersey, where companies are required to account for toxic chemical use, state officials estimate that every dollar spent on materials accounting generates five to eight dollars in in-

creased efficiency (GAO 1994). Without materials accounting industry will miss many opportunities for substantial low cost reductions in pollution, and the public and policy makers will be unable formulate strategies that most effectively reduce exposure to toxic substances in the environment and consumer products.

We recommend:

- Timely implementation of the EPA's proposed expansion of industries and facilities required to report toxic releases under the TRI.
- Further expansion of the TRI to include any facility that uses or releases a toxic substance that may pose a risk to human health or the environment.
- Modification of TRI reporting requirements to include full materials accounting for all facilities.

How Toxic is Toxic?

Chemicals reported to the TRI present serious health and environmental risks. According to the EPA,

"For a chemical or chemical category to remain on or be added to the TRI list, it must be known to cause or be reasonably anticipated to cause one of the following:

- Significant adverse acute health effects at concentration levels that are reasonably likely to exist beyond facility boundaries as a result of continuous, or frequently recurring releases;
- In humans — cancer; teratogenic effects; or serious irreversible reproductive dysfunction, neurologic disorders, heritable genetic mutations, or other chronic health effects;
- * A significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its toxicity and tendency to bioaccumulate in the environment of sufficient seriousness to warrant reporting under EPCRA section 313" (EPA 1996).

Toxic Pollution of America's Waters

Forty (40) percent of America's rivers, lakes, and coastal waters remain unsafe for fishing, swimming or basic recreation (EPA 1996b). The pollution that fouls these waterways deprives the U.S. economy of tens of millions of dollars from tourism, fishing, and development that would otherwise occur on or near these waters if they were not so polluted. According to state water quality officials, toxic pollutants degrade the quality of at least 40,000 miles of the nation's rivers (EPA 1995b), and toxic pollutants caused more than half (55 percent) of the fish kills attributed to human activities during the latest reporting period (EPA 1996b). In spite of the poor quality of much of America's waters, Americans make 1.8 billion recreational trips to beaches, rivers and lakes, contributing mightily to annual sales in the tourism industry of \$380 billion (EPA 1996b).

It is no wonder that America's waters are a polluted mess — hundreds of millions of pounds of toxic chemicals are flushed into them each year. Most of this pollution is unregulated and unmonitored. As recently as 1994, a study by the General Accounting Office (GAO), a research and auditing arm of the Congress, found that 77 percent of the toxic water pollutants it analyzed were not specifically regulated by the Clean Water Act (GAO 1994). The GAO examined toxic discharges to waters from 236 pesticide, pharmaceutical, and pulp and paper manufacturing plants. *The majority* of toxic pollutants discharged at 200 of these 236 facilities (85 percent) were so-called "uncontrolled"

pollutants that were exempt from regulation under the pollution permit process of the Clean Water Act (GAO 1994).

The public should have the right to know about toxic pollution that may pose a risk to human health or the environment. Yet today, 24 years after the enactment of the Clean Water Act, thousands of factories flush millions of pounds of toxic substances into rivers and streams with impunity, without any obligation to inform the communities downstream about the vast majority of toxic chemical use or discharges.

Pollution estimates in the Toxics Release Inventory (TRI), which provided the basis for the analyses presented in *Dishonorable Discharge*, account for only about 5 percent of the total toxic chemical load borne by these waters during the five year reporting period (GAO, 1991; EPA 1996c). What we do know from the current, but very limited public disclosure law, is that America's waters serve as a repository for a considerable amount of toxic pollution. *Dishonorable Discharge* presents a partial accounting of the dangerous manmade chemicals polluting America's rivers, streams, and bays, and argues for a comprehensive public disclosure law as a logical first step toward addressing this problem.

***Dishonorable Discharge* Underestimates Toxic Water Pollution**

The pollution of waterways described in *Dishonorable Discharge* is

Forty (40) percent of America's rivers, lakes, and coastal waters remain unsafe for fishing, swimming or basic recreation.

The General Accounting Office (GAO) found that 77 percent of the toxic water pollutants it analyzed were not specifically regulated by the Clean Water Act.

An accurate estimate of the total load of toxic pollution in many rivers, streams, lakes and bays over the past five years might be 20 times greater than the amounts reported here.

based on an analysis of toxic chemical releases reported by industrial facilities to the Toxics Release Inventory (TRI) and so-called “transfers” of toxics to publicly owned treatment works (POTWs) — the term of art that industry and the EPA use when a polluter, in most cases legally, flushes toxic chemicals down the drain to the local sewage treatment plant. Releases reported to the TRI, in turn, are based entirely on *estimates* of toxic pollution resulting from specific production practices and engineering systems. No monitoring of actual toxic pollution levels at reporting facilities is required to determine if TRI estimates are accurate.

About 90 percent¹ of all toxic discharges coming out of pipes into water (so-called point source discharges) are not reported to the TRI because the TRI exempts many polluters (especially sewage treatment plants, utilities, certain industries and those with fewer than ten employees) from reporting requirements (EPA 1996).

Further, about half of all toxics that pollute rivers, lakes, streams, and bays, comes from surface runoff or atmospheric deposition, as opposed to pipes. Yet comprehensive monitoring and reporting of this so-called “non-point” source pollution is not required by any federal law.

As large as they are, the figures reported in *Dishonorable Discharge* dramatically underestimate the total amount of toxic compounds that have been discharged, dumped, or made their way into America’s water over the past five years. Taking all of the limitations of the existing information into account, Environmental Working Group believes that an accurate estimate of the total load of toxic pollution in many rivers streams, lakes and bays over the past five years might be 20 times greater than the amounts reported here.

Cumulative Emissions vs. Trends

Declining total water discharge esti-

mates in the TRI are often taken as proof that releases of toxic chemicals to waters have decreased since reporting under the TRI began in 1987. Indeed, it is true that reporting and publicizing pollution levels has achieved some actual reductions in discharges. However, the majority of reported decreases in toxic discharges to waters are due to changes in estimation methods (TRI data are based on estimates as opposed to monitoring), or one-time site-specific reductions in high volume chemicals that may or may not represent real long term national trends in pollution reduction.

For example, in 1994, nearly all of the reductions cited were attributable to two fertilizer facilities in Louisiana. Absent those facilities, however, reported toxic discharges to waters nationwide barely changed. Wastes released by incinerators and sewage treatment plants that often receive millions of pounds of toxic chemical “transfers” from polluters, are still not reported as pollution in the TRI. Other “reductions” may actually reflect a switch to the release of a more toxic chemical, or incorporating more toxics into products.

In order to present the most comprehensive possible accounting of pollution from the TRI, the analyses and rankings in *Dishonorable Discharge* are based on cumulative emissions of toxic chemicals to rivers and other water bodies over 5 years, 1990 through 1994. These total pollution estimates provide a more meaningful long term perspective on water quality than a one year snapshot of toxic discharges. We focus on rivers and specific water bodies because the analysis provides extremely useful information for the public and policy makers.

It is important to note that at many individual facilities toxic emissions to water varied considerably over this period. Some facilities appear to have made progress in reducing pollution, while at other facilities pollution has

The majority of reported decreases in toxic discharges to waters are due to changes in estimation methods or one-time site-specific reductions in high volume chemicals.

increased. And in some cases, what appear to be pollution control trends are nothing more than artifacts of TRI reporting changes.

For example, two Louisiana fertilizer plants top the list of the largest TRI water polluters by cumulative amount for 1990 through 1994, but both of them reported very sharp reductions in water emissions for 1994. Based on the TRI, then, such facilities have made progress in controlling emissions of specific pollutants over this period. The opposite is true at other facilities, where all or most of the cumulative emissions to water began or occurred during the latter part of the period examined. Detailed trend and cumulative information about emissions, by chemical and facility, are presented in the state-level versions of *Dishonorable Discharge*.

For some TRI chemicals, emissions trends are hard to decipher because EPA has delisted the chemical, modified the listing, or added the chemical to the TRI at some point during the 5-year period. Acetone, for example, was a TRI chemical between 1990 and 1993, but was delisted for 1994, so the most recent inventory contains incomplete information about acetone emissions for that year. We simply do not know if acetone emissions remained the same or even increased. In fact, by EPA convention, once a chemical is delisted, historical releases of it into the environment, as reported in previous TRIs, are dropped altogether in subsequent reporting. When chemicals are added to the TRI—as several dozen were in 1994—the inventory obviously provides no insight into emissions in prior years. Listing changes affecting the years 1990 through 1994 are presented in Appendix B of the report. Unless otherwise indicated, the toxic pollutants tabulated in *Dishonorable Discharge* include all releases reported between 1990 and 1994, regardless of when compounds were listed or delisted.

Hiding Toxics in the Sewer

The EPA does not include so-called “transfers” of toxic chemicals to sewer systems as an official “release” of a toxic chemical into the environment (EPA 1996). At the same time, the EPA estimates that 25 percent of all toxic chemicals transferred to sewers from industrial facilities pass through treatment and into the waterways that receive wastewater (EPA 1995).

According to TRI estimates, transfers of toxic chemicals to publicly owned treatment works (POTWs) — otherwise known as sewage treatment plants — were four times greater in 1994 than the total amount of toxic chemicals that were directly discharged to water. To better estimate the total amount of toxic substances dumped into waterways, we used EPA’s assumption that 25 percent of the total toxic chemicals transferred to POTWs pass-through untreated. In reality some chemicals flow through POTWs untouched, while others are removed and held in the sludge, broken down in treatment, or allowed to evaporate into the ambient air as toxic pollutants.

Toxic discharges from POTWs could not be accurately estimated for every river and body of water in the United States because POTWs are not required to report toxic discharges or receiving waters to the TRI.

How Toxic is Toxic?

For the years analyzed in *Dishonorable Discharge* the TRI required reporting of more than 300 chemicals discharged by industry into the air or water, or disposed of on land. These substances run the gamut from toxic metals like lead and mercury that can cause birth defects, decreased fertility, and learning deficits, to known carcinogens like benzene, vinyl chloride, and arsenic, to chemicals that can damage a developing fetus, like toluene and styrene, and chemicals that can alter normal sexual development

The EPA does not include so-called “transfers” of toxic chemicals to sewer systems as an official “release” of a toxic chemical into the environment.

Some chemicals flow through POTWs untouched, while others are removed and held in the sludge, broken down in treatment, or allowed to evaporate into the ambient air as toxic pollutants.

For most of the TRI chemicals, federal regulators and scientists have an incomplete understanding of the long term toxic effects on the environment or human health.

Most, if not all of the pollution reported in *Dishonorable Discharge* is legal.

and reproductive function like some phthalates.

Requirements for the reporting of 29 chemicals, including some discharged in substantial quantities, has been either discontinued or modified since the TRI began in 1987, based on industry arguments that these toxic chemicals pose an “acceptable” level of risk to human health or the environment. These include ammonia, sulfuric acid, ammonium nitrate, and acetone, which ranked first, third, sixth and tenth, respectively, in total water discharges in 1990. Acetone and ammonium nitrate were completely delisted, while certain forms of ammonia and sulfuric acid must still be reported. Delisting does not mean that industry is dumping less of these hazardous substances in the nation’s waters, nor does mean that the compound is any safer than when it was reported in the first place; it simply means that the public has been denied its right to know about these discharges. This report includes discharges of all chemicals that were reported in any given year, even if they were subsequently delisted.

According to the EPA,

“For a chemical or chemical category to remain on or be added to the TRI list, it must be known to cause or be reasonably anticipated to cause one of the following:

- * Significant adverse acute health effects at concentration levels that are reasonably likely to exist beyond facility boundaries as a result of continuous, or frequently recurring releases;
- * In humans — cancer; teratogenic effects; or serious irreversible reproductive dysfunction, disorders, heritable genetic mutations, or other chronic health effects;
- * A significant adverse effect on the environment because of its toxicity, its toxicity and persistence in the environment, or its

toxicity and tendency to bioaccumulate in the environment of sufficient seriousness to warrant reporting under EPCRA section 313” (EPA 1996).

For most of the TRI chemicals, federal regulators and scientists have an incomplete understanding of the long term toxic effects on the environment or human health. The vast majority of compounds reported in the TRI have not been fully studied, but nonetheless have triggered one of the above criteria based on what little we know.

Toxic discharges and runoff to water are a serious and largely unaddressed environmental and human health problem. Most, if not all of the pollution reported in *Dishonorable Discharge* is legal. Current pollution control laws like the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), and the Toxic Substances Control Act (TSCA) do little to move the nation towards reducing the toxic pollution cited in this report. In effect, these laws issue pollution licenses or exemptions from regulations, making legal most of the pollution reported in *Dishonorable Discharge*.

The most glaring loophole may be the so-called “domestic sewage exclusion” under RCRA, whereby toxic contaminants sent to sewage treatment plants escape otherwise applicable RCRA hazardous waste regulations. This accounts for the huge amount of toxic chemicals dumped down the drain by American industry. Another major source of toxic pollution of waters is agricultural pesticides. Pesticide runoff to waterways following normal application is not prohibited or monitored any federal law and is not included in this report. About 1.1 billion pounds² of pesticides were used in the United States in 1993 alone (Aspelin, 1994).

Recommendations

Americans should have a right to know about any use, transport, or release of any toxic substance in their communities that might pose a risk to human health or the environment. Required reporting under the TRI provides only a small portion of this information. Americans also have a right to know about toxic chemicals in the products they buy that may pose a risk to them and their children.

Comprehensive community right-to-know laws are a low cost market-based approach to environmental and health protection. As a part of a comprehensive right-to-know based pollution prevention strategy, full accounting of toxic material use can reveal many low cost opportunities for pollution prevention. In New Jersey, where companies are required to account for toxic chemical use, state officials estimate that every dollar spent on materials accounting generates five to eight dollars in increased efficiency (GAO 1994). Without materials accounting industry will miss many opportunities for substantial low cost reductions in pollution, and the public and policy makers will be unable to formulate strategies that most effectively reduce exposure to toxic substances in the environment and consumer products.

We recommend:

- * Timely implementation of the EPA's proposed expansion of industries and facilities required to report toxic releases under the TRI.
- * Expansion of the TRI to include any facility that uses or releases a toxic substance that may pose a risk to human health or the environment.
- * Expansion of TRI reporting requirements to include full materials accounting for all facilities.

Methodology

Dishonorable Discharge is based on data collected by the U.S. Environmental Protection Agency's Toxics Release Inventory (TRI) for the reporting years 1990 through 1994, which includes the most recent data available.

The reporting requirements of the TRI apply only to manufacturing industries and, for the first time in 1994, federal facilities. This narrow focus excludes a large universe of water polluters, including sewage treatment plants, oil drilling and gas extraction facilities, mining industries, incinerators and other waste disposal facilities, farms, and stormwater systems. The EPA has proposed the addition of a few facility types including some types of mining and electrical utilities. But even after this expansion, many of the most significant dischargers of toxic chemicals will not be required to report toxic releases to the environment.

In addition, during this five year period, companies were required to report the releases of only about 340 chemicals when roughly 73,000 chemicals are used in commerce on a regular basis. A recent expansion to about 650 chemicals went into effect in the 1995 reporting year, and will make data available in 1997. Recent challenges to TRI expansion and attempts to exempt some chemicals from reporting requirements threaten these improvements in the inventory.

It is generally agreed that the TRI represents about 5 percent of all toxics flowing to our nations environment each year (GAO 1991, EPA 1996c). To make this limited year-to-year data more useful, we have summed, for each river or body of water, all the water discharges reported since 1990 (when reporting had become more consistent.) While limited, these total pollution estimates provide a more meaningful long term perspective on what is happening to our waters than a one year snapshot of toxic discharges.

Comprehensive community right-to-know laws are a low cost market-based approach to environmental and health protection.

Enormous quantities of toxic chemicals are discharged to waterways via sewer systems.

EWG estimated total toxic chemical pollution from POTWs and direct dischargers to about 50 of America's rivers, streams, lakes or bays.

Analyzing Discharges by Body of Water

Discharges from TRI facilities were assigned to a given waterway based on the "receiving stream" reported to the EPA. Most waterways reported as "tributary" streams were included with their respective rivers in this report when it was possible to link them. Rivers themselves, however, were not considered part of larger watersheds. For example, a "Tributary to the Mississippi River" was counted as Mississippi River, while the Missouri River was not, even though it eventually runs into the Mississippi. Small streams receiving large quantities of discharges such as Gravelly Run in Virginia and Clear Creek in Colorado are reported individually, as reported to the TRI. Streams with the same name in different states were not assumed to be contiguous without verification. Discharges from all facilities reporting discharges to a given body of water were added over the 5-year period between 1990 and 1994.

River by river totals were calculated for persistent toxic metals, carcinogens and chemicals known to cause reproductive effects based on information characterizing the toxic properties of these substances previously published by the EPA, the State of California, the State of New Jersey and other toxicological literature (Environmental Protection Agency, 1996; California Code of Regulations; New Jersey Department of Health; and Dixon, 1986). Lists of chemicals included are found in the Appendix.

Reporting Toxics Dumped Down the Drain

Enormous quantities of toxic chemicals are discharged to waterways via sewer systems. These so-called "transfers" of toxic chemicals to publicly owned treatment works (POTWs) totaled more than 250 million pounds in

1994, compared to 66 million pounds of direct discharges to waters reported in that same year. While the EPA does not count these transfers as environmental releases, they estimate that 25 percent of these transfers flow through sewer systems untreated (EPA 1995).

To better illustrate the amount of toxic chemicals that actually make it into the nation's waters each year, we assumed that 25 percent of the toxic chemicals transferred to POTWs (a.k.a. sewers) ultimately flow into the water receiving the POTW discharges. To identify the waters to which sewage treatment plants discharge effluent, EWG conducted a survey of the wastewater treatment plants that received 75% of the industrial discharges reported to TRI. These plants release treated wastewater to about 50 different water bodies.

Based on this survey, EWG estimated total toxic chemical pollution from POTWs and direct dischargers to about 50 of America's rivers, streams, lakes or bays. Twenty five (25) percent of POTW transfers reported to the TRI were unaccounted for in this analysis. Additional industrial discharges to POTWs that are not reported to TRI also are not accounted for. No pass through was estimated for POTWs that reported releases to more than one waterbody, or use treated wastewater for irrigation, cooling, or some other purpose.

State level estimates of POTW and total discharges are included in the state reports. Toxic chemical releases through POTWs were not attributed to specific rivers in the state level analyses due to the difficulty of verifying the receiving waters. Analyses of facility discharges and top chemicals listed in the state reports *do not include POTW release estimates* and reflect direct discharges only.

Notes

¹ Estimate based on an EPA report (National Sediment Contaminant Point Source Inventory: Analysis of Release Data for 1992. Final Draft. EPA, 1995) where data from TRI were compared to the Permit Compliance System (PCS) Database and found to represent only about 9% of discharges reported in PCS.

²This estimate accounts for active ingredients. The total volume of pesticide products, including so-called inert ingredients is far higher.

Findings

More than one billion pounds of toxic chemicals were directly discharged to America's waters between 1990 and 1994, according to Toxics Release Inventory (TRI) records (Table 1). At a minimum, an additional 450 million pounds of toxic substances that were dumped into publicly owned sewer systems, made their way to rivers and other waters during those same five years.

Many of these compounds present serious hazards to human health and the environment. About 30 million pounds of persistent toxic metals, carcinogens, and reproductive toxins were directly dumped into America's waters between 1990 and 1994 (Table 2). Fifteen (15) million pounds were persistent toxic metals like arsenic, lead, chromium, and zinc, which last in the environment virtually forever, 11.5 million pounds were carcinogens like vinyl chloride and benzene, and nearly 5 million pounds were reproductive toxins such as toluene, lead, and nickel.

The Most Polluted Waters

More than 700 million pounds of toxic chemicals were reported dumped into the Mississippi River between 1990 and 1994, more than twice the amount of toxic chemicals dumped into all other U.S. waters combined (Table 3). Ninety percent of this pollution was from three fertilizer plants in Louisiana, which dumped 643 million pounds of toxic substances in the

Table 1. Toxic discharges to water reported to the TRI totalled 1.5 billion pounds between 1990 and 1994.

Direct Discharges	1,060,319,939	Pounds
Estimated Sewer Discharges*	450,581,136	Pounds
Total	1,510,901,075	Pounds

* Total discharges of toxic chemicals to sewage treatment plant in the U.S. equalled 1,802,324,543 pounds in 1990-1994. EPA estimates that 25% of all toxic discharges to sewers pass through sewage treatment plants untreated (EPA 1995).

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 2. Total carcinogens, persistent toxic metals, and reproductive toxins discharged to U.S. waters (1990-1994).

Carcinogens*	11,528,406	Pounds
Persistent Toxic Metals	15,364,538	Pounds
Reproductive Toxins*	4,801,191	Pounds
Total**	29,712,494	Pounds

* Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. Includes known, probable, and possible carcinogens.

** The sum of carcinogens, persistent toxic metals, and reproductive toxins may be larger than the total because a chemical may be in one or more categories, i.e. a chemical may be both a carcinogen and a reproductive toxin. Chemicals were counted only once in the total.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 3. The most polluted waters: U.S. waters receiving the greatest amounts of toxic pollution (1990-1994).

Rank	River/Waterbody	States with toxic discharges contributing to water pollution	Total pounds of direct toxic discharges to water (1990-1994)
1	Mississippi River	TN, AR, LA, MO, IL, MN, WI, IA, KY, MS	702,496,748
2	Pacific Ocean	OR, HI, CA	35,195,908
3	Ohio River	IL, IN, OH, KY, WV, PA	22,072,491
4	Tennessee River	KY, TN, AL	22,031,743
5	Houston Ship Channel	TX	18,235,338
6	Ward Cove	AK	14,261,169
7	Savannah River	GA, SC	13,968,965
8	Delaware River	DE, PA, NJ	13,329,248
9	Thames River	CT	13,312,639
10	Grays Harbor	WA	10,840,795
11	Rock River	IL, WI	8,165,469
12	Straits Of Juan De Fuca	WA	7,899,229
13	Amelia River	FL	7,461,070
14	Gravelly Run	VA	6,330,209
15	Calcasieu River	LA	5,427,508
16	Ouachita River	AR, LA	4,925,933
17	Mobile River	AL	4,572,055
18	Columbia River	WA, OR	4,368,387
19	Holston River	TN	4,098,240
20	Genesee River	NY	3,672,733
21	Kansas River	KS	3,420,965
22	Martins Creek	MS	3,339,065
23	Indiana Harbor Ship Canal	IN	2,578,038
24	Brazos River	TX	2,442,430
25	Cuyahoga River	OH	2,427,663
26	Patapsco River	MD	2,329,123
27	Kanawha River	WV	2,320,910
28	Susquehanna River	PA, NY	2,144,339
29	Quinnipiac River	CT	2,105,384
30	Fenholloway River	FL	1,896,369
31	Cedar River	IA	1,881,803
32	Everett Harbor	WA	1,749,650
33	Hudson River	NJ, NY	1,729,084
34	Missouri River	NE, KS, MO, ND, IA	1,727,759
35	Neches River	TX	1,645,307
36	Alabama River	AL	1,613,809
37	Escambia Bay	FL	1,568,522
38	Wisconsin River	WI	1,553,152
39	Wabash River	IL, IN, OH	1,532,308
40	Blackwater River	VA	1,488,346
41	Detroit River	MI	1,449,750
42	Little Attapulugus Creek	GA	1,431,183
43	Androscoggin River	ME, NH	1,388,133
44	Escatawpa River	MS	1,358,148
45	Pigeon River	NC	1,325,423
46	Cook Inlet	AK	1,322,140
47	Cape Fear River	NC	1,319,953
48	Des Moines River	IA	1,270,304
49	Tombigbee River	MS, AL	1,210,471
50	Willamette River	OR	1,202,737

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Mississippi during this five year period. The next most polluted waters, in terms of toxic chemical discharges, were the Pacific Ocean, the Ohio and Tennessee Rivers, the Houston Ship Channel, Ward Cove in Alaska, the Savannah River which forms the border between South Carolina and Georgia, and the Delaware River, which forms the border between New Jersey and Pennsylvania (Table 3). More than 1 million pounds of toxic chemicals were directly dumped into each of 63 different rivers, harbors, and bays between 1990 and 1994.

The facilities directly dumping the most toxic chemicals to U.S. waters during this five year period were three fertilizer plants in Louisiana — the IMC-Agrico fertilizer plants in St. James, and in the town of Uncle Sam, and the Arcadian Fertilizer facility in Geismar. Both of the IMC-Agrico facilities reported substantial reductions in emissions to water in the 1994 TRI, ostensibly through pollution prevention efforts. Next in rank were the Louisiana Pacific mill in Samoa, California, which dumped 21 million pounds of toxic chemicals into the Pacific Ocean; Mobil Mining and Minerals in Pasadena, Texas, which dumped 15 million pounds of toxic discharges into the Houston Ship Channel; 3M in Cordova, Illinois which flushed 14.8 million pounds of toxic chemicals into the Mississippi River; and Ketchikan Pulp Co. in Ketchikan, Alaska which dumped 14.2 million pounds to toxic chemicals into Ward Cove between 1990 and 1994 (Table 4). It should be noted that the vast majority of reported water emissions from Mobil Mining and Minerals were for a single year, 1992.

For 80 percent of waters receiving toxic pollution, one polluter accounted for all reported toxic discharges during the five year period; for 92.7 percent of all polluted waters, three or fewer polluters accounted for all reported toxic discharges during this time. Bearing in mind the significant short-

comings with TRI data, these figures nonetheless suggest that substantial improvements in local watersheds might be possible through efforts that target a few major polluters.

The parent corporations responsible for the most toxic chemical pollution of America's waters from 1990 through 1994 were IMC Global and Arcadian Partners LP companies, followed by Louisiana Pacific, DuPont, Mobil, 3M, and ITT corporations. IMC Global and Arcadian, which operate major fertilizer plants in Louisiana, reported significant reductions in toxic discharges in 1994 as a result of pollution prevention measures that were implemented (Table 5).

Dumping Toxics Down the Drain

Many polluters dump huge amounts of toxic chemicals down the drain, to sewage treatment plants. These so-called "transfers" of toxics to publicly owned treatment works (POTWs) are not counted as releases of toxic chemicals to the environment by the TRI, even though the EPA estimates that, nationwide, 25 percent of these toxic substances flow through sewage treatment to the waters that receive the effluent (EPA 1995).

Well over 1.8 billion pounds of toxic chemicals were sent to sewage treatment plants in the United States between 1990 and 1994, almost twice the amount of toxics directly released to waterways during that same time period. In many cases polluters send their toxic discharges to public sewer systems because regulations governing toxic discharges to sewers are less strict than those governing direct discharges to water. This circumstance may be more likely to occur when the stream near the polluting facility is relatively small, and direct discharge permits are denied by state or federal authorities.

Existing, publicly available data make it difficult to determine the precise composition of the toxic waste stream at a given factory or the treatment technol-

Table 4. Top polluters reporting toxic discharges to the TRI (1990-1994).

Rank	Company Name	City	State	Toxic chemical release to water 1990-1994 (pounds)
1	IMC-Agrico Co.	Saint James	LA	335,952,405
2	IMC-Agrico Co.	Uncle Sam	LA	205,451,043
3	Arcadian Fertilizer L.P.	Geismar	LA	103,872,585
4	Louisiana-Pacific Corp.	Samoa	CA	21,484,105
5	Mobil Mining & Minerals Co.	Pasadena	TX	15,415,200
6	3M	Cordova	IL	14,802,439
7	Ketchikan Pulp Co.	Ketchikan	AK	14,261,169
8	Elkem Metals Co.	Marietta	OH	13,845,443
9	Simpson Paper Co.*	Eureka	CA	13,317,670
10	Pfizer Inc.	Groton	CT	13,308,986
11	Du Pont	Deepwater	NJ	11,478,906
12	Weyerhaeuser Co.	Cosmopolis	WA	8,707,255
13	IBP Inc.	Joslin	IL	8,144,910
14	Inland Container Corp.	New Johnsonville	TN	7,963,258
15	Rayonier Inc.	Port Angeles	WA	7,894,420
16	Rayonier Inc.	Fernandina Beach	FL	7,428,844
17	Allied-Signal Inc.	Hopewell	VA	6,400,592
18	Monsanto Co.	Decatur	AL	6,012,620
19	Arcadian Corp.	Port Wentworth	GA	4,669,369
20	Laroche Chemicals Inc.*	Baton Rouge	LA	4,600,200
21	Arcadian Fertilizer L. P.	Augusta	GA	4,346,080
22	Tennessee Eastman Div.	Kingsport	TN	3,944,895
23	Le Chem Inc.*	Baton Rouge	LA	3,897,392
24	Champion Intl. Corp.	Courtland	AL	3,887,851
25	CF Ind. Inc.	Donaldsonville	LA	3,852,015
26	U.S. Vanadium Corp.	Hot Springs	AR	3,709,500
27	Farmland Ind. Inc.	Lawrence	KS	3,403,150
28	Dyno Nobel Inc. Lomo Plant	Louisiana	MO	3,384,200
29	Mississippi Chemical Corp.	Yazoo City	MS	3,339,065
30	Scott Paper Co.	Mobile	AL	3,262,340
31	Eastman Kodak Co.	Rochester	NY	2,764,467
32	IBP Inc.	Columbus Junction	IA	2,569,812
33	Inland Steel Co.	East Chicago	IN	2,556,356
34	Melamine Chemicals Inc.	Donaldsonville	LA	2,542,686
35	LTV Steel Co. Inc.	Cleveland	OH	2,365,660
36	Dow Chemical Co.	Plaquemine	LA	2,145,939
37	ITT Rayonier Inc.*	Hoquiam	WA	2,125,940
38	PPG Ind. Inc.	Lake Charles	LA	1,953,140
39	IMC-Agrico Co.	Hahnville	LA	1,950,755
40	Buckeye Florida L.P.	Perry	FL	1,896,369
41	Dow Chemical Co.	Freeport	TX	1,881,606
42	Scott Paper Co.	Everett	WA	1,749,650
43	Weirton Steel Corp.	Weirton	WV	1,743,607
44	Union Camp Corp.	Savannah	GA	1,718,904
45	Air Prods. & Chemicals Inc.	Pace	FL	1,609,109
46	Triad Chemical	Donaldsonville	LA	1,580,773
47	Osram Sylvania Inc.	Towanda	PA	1,576,204
48	Exxon Baytown Refinery	Baytown	TX	1,496,653
49	Union Camp Corp.	Franklin	VA	1,488,346
50	Cytec Ind.	Wallingford	CT	1,483,956

* This facility reported no discharges to water in 1994, and may also have reported zero discharges for other years.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 5. Top corporate toxic water polluters in TRI between 1990 and 1994.

Rank	Parent Company	Total toxic discharges reported by facilities (1990-1994)
1	IMC Global Inc.	543,368,440
2	Arcadian Partners LP	115,447,188
3	Louisiana-Pacific Corporation	35,745,289
4	Du Pont E I De Nemours And Co.	17,088,978
5	Mobil Corporation	16,252,393
6	Minnesota Mining & Mfg Co.	16,045,444
7	ITT Corporation	15,467,258
8	Elkem Metals Company	14,037,918
9	Pfizer Inc.	13,492,444
10	IBP Inc.	11,031,663
11	Weyerhaeuser Company	10,682,510
12	Monsanto Company	8,296,228
13	Temple-Inland Inc.	8,172,990
14	Allied-Signal Inc.	6,983,942
15	International Paper Company	6,751,577
16	Laroche Ind. Inc.	6,626,700
17	Champion International Corp.	6,330,089
18	Scott Paper Company	5,217,671
19	Eastman Chemical Company	4,409,436
20	Dyno Nobel Inc.	4,318,384
21	The Dow Chemical Company	4,167,593
22	Farmland Ind. Inc.	4,125,852
23	Georgia-Pacific Corporation	3,879,693
24	CF Industries Inc.	3,852,066
25	Strategic Minerals Corporation	3,709,520
26	Union Camp Corporation	3,413,553
27	Mississippi Chemical Corp.	3,372,044
28	Cytec Industries Inc.	3,287,605
29	James River Corp. Virginia	3,102,648
30	Exxon Corporation	3,062,792
31	Eastman Kodak Company	3,062,772
32	LTV Corporation	3,019,114
33	Engelhard Corporation	2,694,160
34	Inland Steel Industries Inc.	2,556,356
35	Melamine Chemicals Inc.	2,542,686
36	Bethlehem Steel Corporation	2,368,421
37	Chevron Corporation	2,344,916
38	Terra Nitrogen Co. LP	2,242,553
39	Amoco Corporation	2,210,157
40	PPG Industries Inc.	2,174,215
41	Air Products And Chemicals	1,976,608
42	Buckeye Florida Corporation	1,896,369
43	Osram Sylvania Inc.	1,877,074
44	W R Grace & Co. Inc.	1,859,069
45	Weirton Steel Corporation	1,743,607
46	First Mississippi Corporation	1,733,289
47	Bayer Corporation	1,726,787
48	Star Enterprise	1,691,368
49	WHX Corporation	1,684,921
50	Tenneco Inc.	1,644,977

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994, and additional information on parent companies provided by EPA.

ogy used at a specific POTW. As a consequence, it is impossible to calculate how much of the discharge from a specific polluter makes it through sewage treatment to the water receiving the effluent. We do know, however, that Monsanto Co. in Sauget, Illinois sent the most toxics to a POTW between 1990 and 1994, 124 million pounds, followed by Columbian Chemicals Co. in St. Louis, Missouri with 74.7 million pounds, Simpson Pasadena Paper Co. in Pasadena, Texas, which transferred 46 million pounds, and Stone Container Corporation in Panama City, Florida, which sent 43 million pounds of toxic chemicals to publicly financed sewage treatment facilities (Table 6).

For rivers that are the dumping destination for a large amount of toxic chemicals, a reasonable first approximation of the total amount of toxic chemicals discharged to these waters via sewage treatment plants can be estimated by applying EPA's assumption that 25 percent of all toxic chemical transfers to POTWs flow through treatment to receiving waters. The results of this analysis provide significant insight into the condition of numerous waterways that receive relatively low amounts of *direct* toxic discharges but large amounts of toxic chemicals from sewage treatment plants.

For example, according to the TRI Gravelly Run in Virginia received 6.3 million pounds of direct discharges, between 1990 and 1994, in contrast to an estimated 20 million pounds of toxics dumped into it from a treatment plant during that same five year period (Table 7). Less than 1 million pound of toxics were directly dumped into the Illinois River between 1990 and 1994, compared to 13 million pounds discharged to the river basin via POTWs during that same period of time. The Kalamazoo River in Michigan, the Sacramento River in California, and Onondaga Lake in Syracuse New York, all received more than 95 times the amount of toxic chemicals via sewage treatment plants than were directly

discharged into these waters. The Raritan River in New Jersey received 50,000 times more toxic from POTWs (12.6 million pounds) than were directly discharged into it between 1990 and 1994.

Chemical Discharges

More phosphoric acid, ammonia, and sulfuric acid were discharged to Americas' waters between 1990 and 1994 than any other chemicals in the TRI (Table 8). (Some of the chemicals in table 8 are no longer reported to the TRI. They are included here to show the magnitude of chemicals that are released even if they are no longer reported.)

Phosphoric acid and ammonia present serious threats to the aquatic environment when discharged in large quantities such as those reported here, because they are converted to the nutrients phosphate and nitrate in water. Through the process of eutrophication phosphate can ultimately deprive the fresh water ecosystems of the oxygen needed to sustain life. Phosphate pollution has been responsible for numerous fish kills in the past. Nitrogen can contribute to this same process in salt water and presents a serious threat to the health and economic viability of many of the nation's bays and estuaries. Phosphate and nitrogen are primarily responsible for the low-oxygen conditions that threaten whole ecosystems such as the Chesapeake Bay and portions of the Gulf of Mexico.

Sulfuric acid discharges are no longer reported to the TRI. The compound, however, continues to be dumped to waters in substantial amounts and can contribute to disruptions of local ecosystems. Temporary but significant increases in water acidity are likely to occur near major sulfuric acid discharge points, which can in turn create toxic conditions for aquatic life and mobilize toxic metals that are chemically bound to sediment in normal conditions.

Table 6. Polluters sending the greatest amounts of toxic chemicals to sewage treatment facilities (1990-1994).

Rank	Company Name	City	State	Toxic chemical release to sewers 1990-1994 (pounds)
1	Monsanto Co.	Sauget	IL	124,307,379
2	Columbian Chemicals Co.	Saint Louis	MO	74,735,900
3	Simpson Pasadena Paper Co.	Pasadena	TX	46,208,739
4	Stone Container Corp.	Panama City	FL	43,279,970
5	Air Prods. Inc.	Pasadena	TX	36,114,290
6	Filtrol Corp.	Los Angeles	CA	33,886,486
7	Mgf Ind. Corp.	Rockford	IL	32,064,255
8	Hercules	Hopewell	VA	31,940,718
9	Kraft Food Ingredients Corp.	Memphis	TN	29,395,835
10	Procter & Gamble Mfg. Co.	Sacramento	CA	28,810,260
11	Boise Cascade Corp.	Saint Helens	OR	26,028,877
12	Stone Container Corp.	Hopewell	VA	25,167,400
13	Allied-Signal Inc.	Hopewell	VA	22,774,991
14	Corn Prods. & Best Foods	Bedford Park	IL	22,174,500
15	Mallinckrodt Chemical Inc.	Saint Louis	MO	21,292,566
16	Penford Prods. Co.	Cedar Rapids	IA	20,927,880
17	International Paper Co.	Erie	PA	20,627,100
18	Old Bridge Chemicals Inc.	Old Bridge	NJ	19,573,393
19	Rohm & Haas DVI	Philadelphia	PA	18,936,272
20	Sun Chemical Corp.	Newark	NJ	18,900,000
21	Merck & Co. Inc.	Rahway	NJ	17,693,994
22	Cincinnati Specialties Inc.	Cincinnati	OH	17,319,964
23	Harcros Pigments Inc.	East Saint Louis	IL	17,280,795
24	Monsanto Co.	Springfield	MA	16,771,100
25	Upjohn Co.	Portage	MI	16,248,691
26	Potlatch Corp.	Cloquet	MN	15,510,961
27	Phthalchem Inc.	Cincinnati	OH	15,437,800
28	Westvaco Corp.	Luke	MD	13,770,930
29	Hilton Davis Co.	Cincinnati	OH	13,691,688
30	Hoffmann-La Roche Inc.	Nutley	NJ	13,211,684
31	Arco Chemical Co.	Pasadena	TX	12,940,710
32	Hercules Inc.	Parlin	NJ	12,487,456
33	Monsanto Co.	Saint Louis	MO	11,538,735
34	Ciba-Geigy	Newport	DE	11,073,061
35	115th Street Corp.	Chicago	IL	10,866,725
36	Amoco	Wood River	IL	10,738,010
37	Givaudan-Roure Corp.	Clifton	NJ	10,498,001
38	Witco Corp.	Memphis	TN	10,413,648
39	S. D. Warren Co.	Muskegon	MI	10,342,635
40	QO Chemicals Inc.	Memphis	TN	9,708,153
41	St. Joe Forest Prods. Co.	Port Saint Joe	FL	9,701,010
42	Kalama Chemical Inc.	Garfield	NJ	9,634,532
43	Hunt-Wesson Inc.	Memphis	TN	9,536,931
44	Zeneca Inc.	Bayonne	NJ	9,513,827
45	Miles Inc.	Haledon	NJ	9,142,381
46	Cookson Pigments Inc.	Newark	NJ	8,839,501
47	Lederle Labs.	Pearl River	NY	8,430,793
48	Bristol-Myers Squibb Co.	East Syracuse	NY	8,295,500
49	Ethyl Petroleum Additives Inc.	Sauget	IL	8,277,829
50	Allied-Signal Inc.	Philadelphia	PA	8,229,615

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 7. The most polluted waters, direct discharges and estimated sewer discharges of toxic chemicals (1990-1994).

Rank	River/Waterbody	States contributing toxic pollution	Discharges to water (1990-1994)		
			Direct discharges to water	Estimated discharges from sewers*	Total discharges to water
1	Mississippi River	TN, AR, LA, MO, IL, MN, WI, IA, KY, MS	702,496,748	79,631,507	782,128,255
2	Houston Ship Channel	TX	18,235,338	31,382,021	49,617,359
3	Pacific Ocean	OR, HI, CA	35,195,908	13,407,047	48,602,955
4	Ohio River	IL, IN, OH, KY, WV, PA	22,072,491	15,432,691	37,505,182
5	Gravelly Run	VA	6,330,209	20,186,098	26,516,307
6	Delaware River	DE, PA, NJ	13,329,248	11,601,921	24,931,169
7	Tennessee River	KY, TN, AL	22,031,743	?	22,031,743
8	Rock River	IL, WI	8,165,469	9,867,877	18,033,346
9	Savannah River	GA, SC	13,968,965	1,127,874	15,096,839
10	Illinois River	IL	976,507	13,290,944	14,267,451
11	Ward Cove	AK	14,261,169	?	14,261,169
12	Thames River	CT	13,312,639	?	13,312,639
13	Gulf of Mexico	FL	‡	13,259,746	13,259,746
14	Raritan River	NJ	250	12,646,337	12,646,587
15	Columbia River	WA, OR	4,368,387	6,508,169	10,876,556
16	Grays Harbor	WA	10,840,795	?	10,840,795
17	Cedar River	IA	1,881,803	6,612,560	8,494,363
18	Lake Erie	PA, OH	238,419	8,171,188	8,409,607
19	Straits Of Juan De Fuca	WA	7,899,229	?	7,899,229
20	Amelia River	FL	7,461,070	?	7,461,070
21	Sacramento River	CA	59,465	7,213,065	7,272,530
22	Hudson River	NY	1,729,079	4,614,478	6,343,557
23	Lake Michigan	IN, MI, OH	1,067,711	4,682,318	5,750,029
24	Kalamazoo River	MI	56,436	5,427,636	5,484,072
25	Arthur Kill	NJ	288,088	5,158,072	5,446,160
26	Calcasieu River	LA	5,427,508	?	5,427,508
27	Ouachita River	AR, LA	4,925,933	?	4,925,933
28	Mobile River	AL	4,572,055	?	4,572,055
29	Connecticut River	CT, MA, NH, VT	70,059	4,297,987	4,368,046
30	Holston River	TN	4,098,240	?	4,098,240
31	Lake Superior	MI	1,270	3,878,042	3,879,312
32	Detroit River	MI	1,449,750	2,264,299	3,714,049
33	Genesee River	NY	3,672,733	?	3,672,733
34	Potomac River	DC, MD, VA, WV	211,020	3,442,733	3,653,753
35	Kansas River	KS	3,420,965	?	3,420,965
36	Martins Creek	MS	3,339,065	?	3,339,065
37	Cooper River	SC	1,008,168	1,754,189	2,762,357
38	Missouri River	NE, KS, MO, ND, IA	1,727,759	930,003	2,657,762
39	Onondaga Lake	NY	11,177	2,589,386	2,600,563
40	Indiana Harbor Ship Canal	IN	2,578,038	?	2,578,038
41	Brazos River	TX	2,442,430	?	2,442,430
42	Cuyahoga River	OH	2,427,663	?	2,427,663
43	Patapsco River	MD	2,329,123	?	2,329,123
44	Kanawha River	WV	2,320,910	?	2,320,910
45	Susquehanna River	PA,NY	2,144,339	?	2,144,339
46	Quinnipiac River	CT	2,105,384	?	2,105,384
47	Pigeon River	NC	1,325,423	775,956	2,101,379
48	Fenholloway River	FL	1,896,369	?	1,896,369
49	Hackensack River	NJ	‡	1,873,828	1,873,828
50	Little Calumet River	IL, IN	831,265	970,568	1,801,833

* EPA estimates that 25% of toxic discharges to sewage treatment plants pass through untreated. This estimate represents 25% of the discharges to a POTW on the waterbody indicated. POTWs were located on waterbodies through an EWG survey. This estimate does not necessarily include all POTWs on a given waterbody.

? POTWs on this waterbody were not contacted by EWG, therefore no accurate estimate of POTW discharge could be made.

‡ No direct discharge reported to this waterway.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The carcinogens discharged in the largest amounts were chloroform, formaldehyde, and 1,4 dioxane at 3.2 million, 2.6 million, and 2 million pounds respectively (Table 8). The reproductive toxins discharged in the highest amounts between 1990 and 1994 were glycol ethers at 1.9 million pounds, toluene at 560,000 pounds, and lead and lead compounds at 488,000 pounds (Table 8).

The top persistent toxic metals dumped into America's waters during the five year period were zinc, chromium and chromium compounds, and manganese, at 6 million, 1.5 million, and 850,000 pounds respectively. Persistent toxic metals are of particular concern because they do not degrade in the environment, and because many of them are carcinogens and reproductive toxins. Some, including arsenic, lead, and cadmium, which cause cancer, birth defects, and learning deficits in children, bioaccumulate in the food chain and are eventually consumed by humans in fish and other foods (Table 8).

Carcinogens

Eastman Kodak Company dumped more cancer causing chemicals into the nation's waters than any other company — 879,000 pounds between 1990 and 1994 — according to the TRI. All of these discharges went into the Genesee River in New York. Second ranked Cytec Industries in Wallingford, Connecticut, continues to discharge a large amount of formaldehyde, though lower levels of that carcinogen were reported by the facility in 1994. Weyerhaeuser and Longview Fibre Companies, both of Longview Washington, and Pfizer Inc. of Groton, Connecticut round out the top five dischargers of cancer causing compounds for these five years (Table 9). In the case of both Longview and Pfizer, despite the large cumulative loadings over the period, substantial reductions in carcinogen emissions were reported in 1994 compared to previous years.

Table 8. Toxic chemicals discharged to U.S. waters in the greatest amounts (1990-1994).

Rank	Toxic chemical	Reason for Concern	Total pounds of chemical discharged (1990-1994)
1	Phosphoric acid	1	544,473,756
2	Ammonia	1	183,890,601
3	Sulfuric acid	1	122,240,492
4	Methanol	1	76,584,556
5	Ammonium nitrate (solution)	1	36,664,113
6	Ammonium sulfate (solution)	1	31,457,509
7	Ethylene glycol	1	8,387,703
8	Hydrochloric acid	1	7,587,979
9	Zinc & Zinc compounds	1,4	6,248,467
10	Acetone	1	4,376,402
11	Chlorine	1	4,167,703
12	Manganese compounds	1,4	3,454,888
13	Chloroform	1,2	3,238,560
14	Formaldehyde	1,2	2,639,932
15	1,4-Dioxane	1,2	2,027,122
16	Glycol ethers	1,3	1,954,230
17	Diethanolamine	1	1,703,233
18	Chromium & Chromium compounds	1,4	1,553,891
19	tert-Butyl alcohol	1	903,784
20	Phenol	1	858,715
21	Manganese	1,4	850,212
22	Catechol	1	778,908
23	Copper & Copper compounds	1,4	745,183
24	n-butyl alcohol	1	722,693
25	2-Methoxyethanol	1	688,652
26	Methyl ethyl ketone	1	685,636
27	Dichloromethane	1,2	642,718
28	Nitric acid	1	641,815
29	Nickel & Nickel compounds	1,2,3,4	593,966
30	Acetaldehyde	1,2	569,685
31	Toluene	1,3	560,915
32	Cyanide compounds	1	522,275
33	Barium & Barium compounds	1,4	504,563
34	Cobalt & Cobalt compounds	1,4	502,364
35	Methyl isobutyl ketone	1	489,823
36	Lead & Lead compounds	1,2,3,4	488,336
37	Chloromethane	1	437,475
38	Molybdenum trioxide	1	364,180
39	Methyl tert-butyl ether	1	358,985
40	Antimony & Antimony compounds	1,4	319,812
41	Aluminum (fume or dust)	1,3	256,741
42	Carbon disulfide	1,3	241,012
43	Xylene (mixed isomers)	1,3	236,473
44	Styrene	1,2,3	190,773
45	Propylene	1	186,245
46	Naphthalene	1	156,448
47	1,3-Butadiene	1,2	132,365
48	Cyclohexane	1	125,531
49	Acetonitrile	1	115,365
50	Benzene	1,2,3	109,456

1: Meets EPA's TRI toxicity criteria; 2: Known, possible, or probable carcinogen; 3: Reproductive toxin; 4: Persistent toxic metal

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 9. Top polluters releasing cancer-causing chemicals to U.S. waters (1990-1994).

Rank	Company	City	State	River/waterbody receiving carcinogenic chemicals	Total pounds of carcinogens discharged to water (1990-1994)
1	Eastman Kodak Co.	Rochester	NY	Genesee River	879,222
2	Cytec Ind.	Wallingford	CT	Quinnipiac River	809,889
3	Weyerhaeuser Co.	Longview	WA	Columbia River	684,815
4	Longview Fibre Co.	Longview	WA	Columbia River	630,270
5	Pfizer Inc.	Groton	CT	Thames River	529,150
6	AC Molding Compounds	Wallingford	CT	Quinnipiac River	339,858
7	Tennessee Eastman Div.	Kingsport	TN	Holston River	291,168
8	Union Carbide Corp.	Taft	LA	Mississippi River	254,045
9	Ketchikan Pulp Co.	Ketchikan	AK	Ward Cove	239,741
10	Louisiana-Pacific Corp.	Samoa	CA	Pacific Ocean	222,000
11	Scott Paper Co.	Mobile	AL	Mobile River	178,000
12	Du Pont	Deepwater	NJ	Delaware River	158,180
13	Schenectady Intl. Inc.	Rotterdam Junction	NY	Mohawk River	149,605
14	Huntsman Corp.	Port Neches	TX	Neches River	149,040
15	Simpson Paper Co.*	Eureka	CA	Pacific Ocean	132,800
16	Wellman Inc.	Darlington	SC	Black Creek	128,470
17	Hoechst Celanese Corp.	Salisbury	NC	North Second Creek	126,250
18	Georgia-Pacific West Inc.	Bellingham	WA	Bellingham Bay	112,929
19	PPG Ind. Inc.	Lake Charles	LA	Calcasieu River	109,740
20	Monsanto Co.	Addyston	OH	Ohio River	105,601
21	Champion Intl. Corp.	Canton	NC	Pigeon River	103,180
22	Dow Chemical Co.	Plaquemine	LA	Mississippi River	100,635
23	Hoechst Celanese Corp.	Spartanburg	SC	Pacolet River	99,655
24	Ameripol Synpol Corp.	Port Neches	TX	Neches River	98,395
25	Boise Cascade Corp.	International Falls	MN	Rainy River	97,100
26	ISP Chemicals Inc.	Calvert City	KY	Tennessee River	96,125
27	Alaska Pulp Corp.*	Sitka	AK	Silver Bay	93,000
28	Du Pont	Kinston	NC	Neuse River	81,889
29	Du Pont	Florence	SC	Great Pee Dee River	81,466
30	Bethlehem Steel Corp.	Sparrows Point	MD	Old Road Bay, Bear Creek, Patapsco River	79,876
31	Carolina Eastman Div.	Eastman Columbia	SC	Congaree River	78,892
32	Merck & Co. Inc.	Albany	GA	Flint River	73,280
33	International Paper	Natchez	MS	Mississippi River	72,497
34	BASF Corp.*	Wyandotte	MI	Detroit River	66,750
35	Hoechst Celanese Corp.	Greer	SC	White Plains Branch	64,699
36	Weyerhaeuser Co.*	Everett	WA	Snohomish River, Steamboat Slough	62,100
37	Simpson Tacoma Kraft Co.	Tacoma	WA	Puget Sound	62,053
38	Angus Chemical Co.	Sterlington	LA	Sterlington Ditch, Ouachita River	59,940
39	Gilman Paper Co.	Saint Marys	GA	North River	55,900
40	Scott Paper Co.	Everett	WA	Everett Harbor	50,200
41	AK Steel Corp.	Middletown	OH	Great Miami River, Dick's Creek	49,887
42	Albemarle Corp.	Orangeburg	SC	Edisto River	49,465
43	Georgia-Pacific Corp.	Palatka	FL	Rice Creek	49,460
44	Ciba-Geigy	Mc Intosh	AL	Tombigbee River	47,725
45	Dow Chemical Co.	Freeport	TX	Brazos River	46,196
46	Firestone Synthetic Rubber	Sulphur	LA	Calcasieu River	45,422
47	International Paper	Selma	AL	Alabama River	45,000
48	Bowater Inc.	Calhoun	TN	Hiwassee River	44,395
49	Gulf States Steel Inc.	Gadsden	AL	Black Creek	41,606
50	Weirton Steel Corp.	Weirton	WV	Ohio River, Harmon Creek	40,836

* This facility reported no discharges of carcinogens to water in 1994, and may also have reported zero discharges for other years.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994. Includes known, probable, or possible carcinogens as defined by EPA's Public Data Release and the State of California's Proposition 65 list.

Table 10. Waterbodies receiving the most cancer-causing chemicals (1990-1994).

Rank	River/Waterbody	States discharging carcinogenic chemicals to waterbody	Total pounds of carcinogens discharged (1990-1994)
1	Columbia River	WA, OR	1,393,628
2	Quinnipiac River	CT	1,156,656
3	Genesee River	NY	879,256
4	Mississippi River	AR, IL, IA, KY, LA, MN, MS, MO, TN, WI	663,277
5	Thames River	CT	530,426
6	Pacific Ocean	OR, HI, CA	369,320
7	Holston River	TN	301,938
8	Ohio River	IN, OH, KY, WV, PA	275,949
9	Neches River	TX	273,205
10	Ward Cove	AK	239,741
11	Mobile River	AL	190,254
12	Calcasieu River	LA	186,063
13	Delaware River	DE, PA, NJ	174,259
14	Mohawk River	NY	149,745
15	Tennessee River	KY, TN, AL	143,838
16	Tombigbee River	MS, AL	136,245
17	Black Creek	SC	128,847
18	North Second Creek	NC	126,250
19	Bellingham Bay	WA	112,929
20	Pigeon River	NC	103,180
21	Pacolet River	SC	99,655
22	Rainy River	MN	97,100
23	Great Pee Dee River	SC	94,816
24	Silver Bay	AK	93,000
25	Detroit River	MI	90,285
26	Neuse River	NC	88,619
27	Congaree River	SC	79,392
28	Flint River	GA	73,710
29	Wisconsin River	WI	72,005
30	White Plains Branch	SC	64,699
31	Grays Harbor	WA	64,100
32	Puget Sound	WA	62,818
33	Alabama River	AL	59,747
34	Old Road Bay	MD	57,300
35	North River	GA	55,900
36	Steamboat Slough	WA	54,300
37	Androscoggin River	ME, NH	50,554
38	Savannah River	GA, SC	50,468
39	Everett Harbor	WA	50,200
40	Edisto River	SC	49,801
41	Rice Creek	FL	49,460
42	Brazos River	TX	47,616
43	Ouachita River	AR, LA	47,232
44	Dick's Creek	OH	47,052
45	Houston Ship Channel	TX	46,423
46	Kanawha River	WV	45,978
47	Hiwassee River	TN	44,395
48	Black Creek	AL	41,606
49	Willamette River	OR	35,837
50	Battenkill River	NY	35,200

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994. Includes known, probable, or possible carcinogens as defined by EPA's Public Data Release and the State of California's Proposition 65 list.

Table 11. States with waters receiving the most cancer-causing chemicals (1990-1994).

Rank	State	Total pounds of carcinogens discharged (1990-1994)
1	Washington	1,763,207
2	Connecticut	1,705,759
3	New York	1,144,510
4	Louisiana	870,381
5	South Carolina	639,181
6	Texas	606,485
7	Alabama	530,381
8	California	391,096
9	North Carolina	385,802
10	Tennessee	369,163
11	Alaska	333,330
12	Ohio	321,098
13	Georgia	238,023
14	Pennsylvania	226,195
15	New Jersey	204,530
16	Michigan	175,020
17	Kentucky	171,720
18	West Virginia	146,209
19	Maine	127,914
20	Minnesota	115,795
21	Wisconsin	104,835
22	Mississippi	104,370
23	Indiana	98,584
24	Illinois	90,616
25	Maryland	90,010
26	Oregon	84,019
27	Arkansas	83,722
28	Virginia	82,282
29	Florida	74,119
30	New Hampshire	61,035
31	Missouri	37,354
32	Nebraska	37,102
33	Idaho	34,067
34	Massachusetts	17,372
35	Iowa	15,219
36	Oklahoma	10,032
37	Colorado	9,202
38	Kansas	6,769
39	Montana	4,881
40	Utah	4,775
41	Delaware	4,115
42	Rhode Island	2,029
43	Vermont	1,000
44	Wyoming	786
45	North Dakota	623
46	Arizona	53
47	New Mexico	19
48	South Dakota	15
49	Hawaii	10
50	Nevada	-

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, *Toxics Release Inventory 1990-1994*.

The Columbia River received the most cancer causing toxic chemical discharges between 1990 and 1994, at 1.39 million pounds, followed by the Quinnipiac River in Connecticut, the Genesee River in New York, the Mississippi River, and the Thames River in Connecticut (Table 10).

The waters of Washington State received the most cancer causing substances, 1.76 million pounds, followed by the waters of Connecticut, New York, and Louisiana (Table 11).

Reproductive Toxins

The Tennessee Eastman Company in Kingsport, Tennessee dumped more reproductive toxins into the nation's waters than any other facility, 286,000 pounds, according to TRI records for 1990 through 1994. All of these discharges went into the Holston River. TRI records indicate a sharp 1994 reduction in the main reproductive toxin released by Tennessee Eastman (2-methoxyethanol), and an apparent elimination of another reproductive toxin that was released in large quantity in 1990. Next in rank is a DuPont Company facility in Old Hickory, Tennessee, though virtually all of its discharges of reproductive toxins occurred in 1991 and 1992. Pfizer Inc. in Groton, Connecticut ranks third, followed by S.D. Warren Company* in Skowhegan, Maine, and James River Paper Company in Clatskanie, Oregon which rounds out the top five dischargers of reproductive toxins to America's waters during the five year period analyzed (Table 12). Pfizer Inc., in Groton, Connecticut reported especially high emissions of one reproductive toxin (toluene) in 1990, and S.D. Warren Company reported no emissions of one major category (glycol ethers) after high levels in 1990-1993.

*This facility reported no discharges in 1994, and may also have reported zero discharges of reproductive toxins for other years.

Table 12. Top polluters releasing reproductive toxins to U.S. waters (1990-1994).

Rank	Company	City	State	River/waterbody receiving reproductive toxins	Total pounds of reproductive toxins discharged to water (1990-1994)
1	Tennessee Eastman Div.	Kingsport	TN	Holston River	286,884
2	Du Pont	Old Hickory	TN	Cumberland River	262,181
3	Pfizer Inc.	Groton	CT	Thames River	261,220
4	S. D. Warren Co.*	Skowhegan	ME	Kennebec River	248,000
5	James River Paper Co. Inc.	Clatskanie	OR	Columbia River	207,460
6	Eastman Kodak Co.	Rochester	NY	Genesee River	171,812
7	International Paper	Jay	ME	Androscoggin River	135,044
8	Spontex Inc.	Columbia	TN	Duck River	134,323
9	OSI Specialties Inc.	Sistersville	WV	Sugar Camp Run, Ohio River	128,971
10	Carolina Eastman Div.	Eastman Columbia	SC	Congaree River	116,043
11	Albemarle Corp.	Orangeburg	SC	Edisto River	109,700
12	Ameripol Synpol Corp.	Port Neches	TX	Neches River	98,395
13	King Finishing Co.	Dover	GA	Ogeechee River	96,000
14	Ford Motor Co.*	Wixom	MI	Congdon Drain	76,800
15	Circuit-Wise Inc.	North Haven	CT	Quinnipiac River	74,774
16	AK Steel Corp. - West Works*	Ashland	KY	White Oak Creek, Ohio River, Hood Creek	70,905
17	Granite City Steel	Granite City	IL	Horseshoe Lake	66,280
18	Scott Paper Co.*	Mobile	AL	Mobile River	64,000
19	Courtaulds Fibers Inc.	Axis	AL	Mobile River	59,700
20	Merck & Co. Inc.	Elkton	VA	Shenandoah River	58,180
21	Champion Intl. Corp.	Bucksport	ME	Penobscot River	53,207
22	Kodak	Windsor	CO	Cache La Poudre River	49,578
23	Monsanto Co.	Nitro	WV	Kanawha River	47,129
24	Bayway Refining Co.	Linden	NJ	Arthur Kill	45,922
25	Firestone Synthetic Rubber	Sulphur	LA	Calcasieu River	45,422
26	Armco Inc. Dover Operations*	Dover	OH	Tuscarawas River	44,673
27	Smurfit Newsprint Corp.*	Newberg	OR	Willamette River	44,164
28	Southeast Paper Mfg. Co.*	Dublin	GA	Oconee River	43,628
29	North American Rayon Corp.	Elizabethton	TN	Watauga River	37,000
30	Goody Prods. Inc.*	Kearny	NJ	Dead Horse Creek	36,857
31	Galey & Lord Society Hill	Society Hill	SC	Pee Dee River	34,900
32	Du Pont	Deepwater	NJ	Delaware River	32,815
33	General Electric Co.	Mount Vernon	IN	Ohio River	32,698
34	Delphi Harrison Thermal Sys.	Lockport	NY	Gulf	30,762
35	Akzo Nobel Chemicals Inc.	Gallipolis Ferry	WV	Ohio River	28,859
36	Petrowax PA Inc.	Smethport	PA	Potato Creek	28,838
37	CDC Coatings	Houston	TX	Carpenter's Bayou	27,923
38	Champion Intl. Corp.	Deferiet	NY	Black River	27,902
39	Rohm & Haas Delaware Valley	Bristol	PA	Hog Run Creek	27,347
40	Scott Paper Co.*	Winslow	ME	Kennebec River	26,330
41	Gulf States Steel Inc.	Gadsden	AL	Black Creek	26,232
42	National Spinning Co. Inc.	Washington	NC	Tar River	24,452
43	AMP-Akzo Co.	Aquebogue	NY	Long Island Sound	24,362
44	Star Enterprise	Union	LA	Mississippi River	23,061
45	Ferro Corp.	Zachary	LA	Mississippi River	22,520
46	Hess Oil Virgin Islands Corp.	Kingshill	VI	Caribbean Sea	17,784
47	Angus Chemical Co.	Sterlington	LA	Sterlington Ditch, Ouachita River	17,750
48	Sharon Steel Corp.*	Farrell	PA	Shenango River	17,450
49	Metallroy Hudson Foundry	Hudson	MI	Bean Creek	16,842
50	Lyondell Petrochemical Co.*	Channelview	TX	San Jacinto River/Bay	16,094

* This facility reported no discharges of reproductive toxins to water in 1994, and may also have reported zero discharges for other years.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 13. Waterways receiving the most reproductive toxins (1990-1994).

Rank	River/Waterbody	States discharging reproductive toxins to waterbody	Total pounds of reproductive toxins discharged (1990-1994)
1	Holston River	TN	286,884
2	Kennebec River	ME	274,350
3	Cumberland River	TN	262,906
4	Thames River	CT	261,476
5	Columbia River	WA, OR	211,864
6	Ohio River	IN, OH, KY, WV, PA	197,397
7	Genesee River	NY	171,813
8	Duck River	TN	135,423
9	Androscoggin River	ME, NH	135,044
10	Mobile River	AL	126,098
11	Neches River	TX	117,029
12	Congaree River	SC	116,298
13	Edisto River	SC	109,700
14	Mississippi River	AR, IL, IA, KY, LA, MN, MS, MO, TN, WI	108,195
15	Ogeechee River	GA	96,000
16	Sugar Camp Run	WV	82,800
17	Quinnipiac River	CT	79,375
18	Congdon Drain	MI	76,800
19	Horseshoe Lake	IL	66,275
20	Shenandoah River	VA	58,180
21	Kanawha River	WV	58,053
22	Calcasieu River	LA	57,372
23	Willamette River	OR	53,253
24	Penobscot River	ME	53,233
25	Cache La Poudre River	CO	49,578
26	Delaware River	DE, PA, NJ	49,325
27	Tuscarawas River	OH	48,836
28	Arthur Kill	NJ	45,859
29	Oconee River	TN, GA	44,942
30	White Oak Creek Watershed	KY	42,700
31	Watauga River	TN	37,000
32	Dead Horse Creek	NJ	36,857
33	Pee Dee River	SC	34,900
34	Houston Ship Channel	TX	34,466
35	Gulf	NY	30,762
36	Potato Creek	PA	28,838
37	Carpenter's Bayou	TX	27,928
38	Black River	NY	27,902
39	Hog Run Creek	PA	27,347
40	Black Creek	AL	26,232
41	Long Island Sound	NY, CT	24,959
42	Tar River	NC	24,452
43	Shenango River	PA	21,852
44	Ouachita River	AR, LA	20,348
45	Illinois River	IL	19,438
46	Allegheny River	PA	17,232
47	San Jacinto River/Bay	TX	17,061
48	Bean Creek	MI	16,842
49	Arkansas River	CO, OK, AR, KS	16,025
50	Willougeby Bay	VA	16,000

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 14. States with waters receiving the most reproductive toxins (1990-1994).

Rank	State	Total pounds of reproductive toxins discharged (1990-1994)
1	Tennessee	742,671
2	Maine	466,937
3	Connecticut	352,920
4	Texas	309,048
5	South Carolina	287,248
6	New York	285,379
7	Oregon	262,648
8	West Virginia	247,648
9	Louisiana	195,268
10	Alabama	180,996
11	Georgia	179,602
12	Pennsylvania	161,547
13	Michigan	142,181
14	New Jersey	126,888
15	Ohio	119,897
16	Illinois	111,145
17	Kentucky	107,077
18	Virginia	96,916
19	Indiana	66,619
20	North Carolina	53,776
21	Colorado	50,579
22	Wisconsin	32,921
23	California	29,473
24	Mississippi	27,047
25	Arkansas	25,340
26	Missouri	21,607
27	Kansas	21,512
28	Nebraska	14,715
29	Washington	14,365
30	Iowa	9,768
31	Delaware	8,425
32	Maryland	6,858
33	Massachusetts	5,583
34	Idaho	4,982
35	Oklahoma	3,191
36	Hawaii	3,045
37	Minnesota	2,854
38	Florida	1,764
39	Wyoming	820
40	New Hampshire	781
41	Rhode Island	519
42	Alaska	382
43	North Dakota	276
44	Montana	146
45	Utah	15
46	New Mexico	13
47	South Dakota	10
48	Arizona	5
49	Vermont	-
50	Nevada	-

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

More reproductive toxins, 286,000 pounds between 1990 and 1994, were dumped in the Holston River in Tennessee than any other body of water in the U.S., according to the TRI. Next in rank is the Kennebec River in Maine, the Cumberland River in Tennessee, the Thames River in Connecticut, and the Columbia River in the Washington and Oregon (Table 13).

The waters of Tennessee received more reproductive toxins than any other state, with 742,000 pounds discharged during the five year period analyzed (Table 14). Tennessee is followed by Maine, Connecticut, and Texas as states where the most toxic chemicals that cause reproductive damage or birth defects were discharged to waters between 1990 and 1994, according to the TRI.

Persistent Toxic Metals

Bethlehem Steel in Sparrows Point, Maryland, dumped more persistent toxic metals to the nation's waters than any other facility in the nation, 851,000 pounds between 1990 and 1994, according to the TRI (Table 15). Most of these metals were dumped into Old Road Bay, at the mouth of the Patapsco River, on the Chesapeake Bay. Despite these large cumulative totals and continued large emissions, Bethlehem Steel did report substantial reductions of nickel, copper and chromium emissions to water over the period. The next largest dischargers of persistent toxic metals were Amoco Chemical in Decatur, Alabama, with 729,000 pounds, Weirton Steel in Weirton, West Virginia, with 617,000 pounds, Elkem metals in Marietta, Ohio, with 540,000 pounds, and Eastman Kodak in Rochester New York, with 507,000 pounds. In the case of Amoco, most of the metals discharged are cobalt and manganese. Elkem Metals discharges mainly manganese.

More persistent toxic metals were dumped into the Ohio River than any other body of water in the United

Table 15. Top polluters releasing persistent toxic metals to U.S. waters (1990-1994).

Rank	Company	City	State	River/waterbody receiving persistent toxic metals	Total pounds of persistent toxic metals discharged to water (1990-1994)
1	Bethlehem Steel Corp.	Sparrows Point	MD	Old Road Bay, Bear Creek, and Patapsco River	851,347
2	Amoco Chemical Co.	Decatur	AL	Tennessee River	729,000
3	Weirton Steel Corp.	Weirton	WV	Ohio River, Harmon Creek	617,109
4	Elkem Metals Co.	Marietta	OH	Ohio River	540,300
5	Eastman Kodak Co.	Rochester	NY	Genesee River	507,984
6	Kemira Pigments Inc.	Savannah	GA	Savannah River	491,000
7	Georgia-Pacific Corp.	Brunswick	GA	Turtle River	436,000
8	Gulf Reduction Corp.	Houston	TX	Buffalo Bayou	412,691
9	Riverwood Intl. Inc.	West Monroe	LA	Ouachita River	375,248
10	National Steel Corp.	Ecorse	MI	Detroit River, Rouge River	355,875
11	Gulf States Steel Inc.	Gadsden	AL	Black Creek	343,323
12	Chemetals Inc.	Baltimore	MD	Patapsco River	328,989
13	Amoco Chemical Co.	Wando	SC	Cooper River	255,800
14	Potlatch Corp.-Idaho Pulp	Lewiston	ID	Snake River	241,900
15	Rayovac Corp.*	Covington	TN	Town Creek	201,952
16	Finch Pruyn & Co. Inc.*	Glens Falls	NY	Hudson River	188,000
17	Georgia-Pacific Corp.	Ashdown	AR	Red River	179,000
18	Courtaulds Fibers Inc.	Axis	AL	Mobile River	178,750
19	International Paper*	Jay	ME	Androscoggin River	174,611
20	NVF Co.	Yorklyn	DE	Red Clay Creek	167,462
21	Zinc Corp. Of America	Palmerton	PA	Aquashicola Creek, Lehigh River	159,781
22	Bethlehem Steel Corp.	Burns Harbor	IN	Little Calumet River, Burns Waterway Harbor	155,600
23	Sharon Steel Corp.*	Farrell	PA	Shenango River	137,872
24	AK Steel Corp.	Middletown	OH	Great Miami River, Dick's Creek	133,390
25	International Paper	Bastrop	LA	Staulkinghead Creek	118,061
26	Clinton Labs.	Clinton	IN	Wabash River	113,225
27	Kerr-McGee Chemical Corp.	Hamilton	MS	Tombigbee River, Dose Maie Creek	110,559
28	Star Enterprise	Port Arthur	TX	Taylor Bayou	107,752
29	U.S. Steel	Gary	IN	Grand Calumet River, Lake Michigan	103,300
30	SCM Chemicals	Baltimore	MD	Patapsco River	100,000
31	Macmillan Bloedel Packaging	Pine Hill	AL	Alabama River	94,000
32	Mclouth Steel	Trenton	MI	Detroit River	91,075
33	Exxon Baytown Refinery	Baytown	TX	Houston Ship Channel	87,987
34	Georgia-Pacific West Inc.	Bellingham	WA	Bellingham Bay	87,340
35	Granite City Steel	Granite City	IL	Horseshoe Lake	85,905
36	Pfizer Inc.	Groton	CT	Thames River	84,450
37	State Ind. Inc.	Ashland City	TN	Cumberland River	82,005
38	Du Pont	Leland	NC	Cape Fear River	81,737
39	USS Fairfield Works	Fairfield	AL	Opossum Creek	78,433
40	Chevron USA Prods. Co.	El Segundo	CA	Santa Monica Bay	77,479
41	Bit Mfg. Inc.	Copperhill	TN	Oconee River, Burra Burra Creek	77,250
42	AK Steel Corp. - West Works	Ashland	KY	White Oak Creek, Ohio River, Hood Creek	71,275
43	Dow Chemical Co.	Freeport	TX	Brazos River	69,014
44	Smurfit Newsprint Corp.	Newberg	OR	Willamette River	68,000
45	Ford Motor Co.	Nashville	TN	Cumberland River	67,000
46	USS/Kobe Steel Co.*	Lorain	OH	Black River	64,600
47	Tennessee Eastman Div.	Kingsport	TN	Holston River	64,237
48	Boise Cascade Corp.	Jackson	AL	Tombigbee River	61,800
49	Du Pont	Deepwater	NJ	Delaware River	61,435
50	Bethlehem Steel Corp.	Steelton	PA	Susquehanna River	61,401

* This facility reported no discharges of metals to water in 1994, and may also have reported zero discharges for other years.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 16. Waterbodies receiving the most persistent toxic metals (1990-1994).

Rank	River/Waterbody	States discharging persistent toxic metals to waterbody	Total pounds of persistent toxic metals discharged (1990-1994)
1	Ohio River	IN,OH,KY,WV,PA	1,148,676
2	Tennessee River	KY,TN,AL	774,194
3	Old Road Bay	MD	759,000
4	Savannah River	GA,SC	525,753
5	Genesee River	NY	507,150
6	Patapsco River	MD	500,466
7	Detroit River	MI	439,240
8	Turtle River	GA	436,000
9	Buffalo Bayou	TX	435,603
10	Ouachita River	AR,LA	401,139
11	Black Creek	AL	343,323
12	Mississippi River	AR, IL, IA, KY, LA, MN, MS, MO, TN, WI	325,119
13	Cooper River	SC	259,424
14	Snake River	ID	241,900
15	Hudson River	NJ, NY	232,977
16	Harmon Creek	WV	207,538
17	Cumberland River	TN	203,481
18	Town Creek	TN	201,949
19	Mobile River	AL	181,410
20	Red River	AR, LA	179,240
21	Androscoggin River	ME, NH	179,711
22	Little Calumet River	IL, IN	179,453
23	Red Clay Creek	DE	167,462
24	Aquashicola Creek	PA	161,655
25	Alabama River	AL	157,022
26	Shenango River	PA	153,103
27	Houston Ship Channel	TX	146,008
28	Cape Fear River	NC	127,967
29	Staulkinghead Creek	LA	118,061
30	Dick's Creek	OH	116,570
31	Wabash River	OH, IL, IN	115,908
32	Willamette River	OR	110,218
33	Taylor Bayou	TX	107,863
34	Wisconsin River	WI	106,163
35	Delaware River	DE, PA, NJ	105,315
36	Calcasieu River	LA	101,370
37	Arkansas River	CO, OK, AR, KS	96,418
38	Neches River	TX	96,068
39	Susquehanna River	PA, NY	95,326
40	Tombigbee River	MS, AL	94,498
41	Grand Calumet River	IN	90,325
42	Thames River	CT	88,083
43	Bellingham Bay	WA	87,340
44	Horseshoe Lake	IL	85,905
45	Black River	OH	82,827
46	Oconee River	TN, GA	81,112
47	Lake Michigan	IL, WI, MI, IN	80,555
48	Opossum Creek	AL	78,433
49	Santa Monica Bay	CA	77,479
50	Brazos River	TX	76,179

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

Table 17. States with waters receiving the most persistent toxic metals (1990-1994).

Rank	State	Total pounds of persistent toxic metals discharged
1	Alabama	1,675,575
2	Maryland	1,319,804
3	Texas	1,202,977
4	Ohio	1,188,110
5	Georgia	1,069,313
6	New York	1,005,670
7	Pennsylvania	818,127
8	Louisiana	789,293
9	West Virginia	671,462
10	Tennessee	660,378
11	Michigan	579,345
12	Indiana	495,581
13	Illinois	399,702
14	South Carolina	388,436
15	Arkansas	303,564
16	Washington	274,419
17	Maine	261,387
18	Idaho	241,900
19	Mississippi	220,785
20	Wisconsin	211,464
21	Delaware	208,246
22	California	178,379
23	North Carolina	170,195
24	Kentucky	154,560
25	Oregon	136,978
26	Connecticut	134,136
27	New Jersey	111,459
28	Virginia	88,893
29	Nebraska	78,898
30	Iowa	48,775
31	Missouri	46,015
32	Oklahoma	45,683
33	Minnesota	43,452
34	Florida	30,480
35	Kansas	29,594
36	Utah	28,356
37	Massachusetts	20,603
38	Colorado	14,079
39	Rhode Island	4,574
40	New Hampshire	2,441
41	Arizona	2,304
42	New Mexico	2,278
43	Vermont	2,113
44	Montana	1,076
45	Alaska	951
46	North Dakota	892
47	Nevada	750
48	Wyoming	45
49	Hawaii	27
50	South Dakota	15

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

States, 1.1 million pounds between 1990 and 1994, according to TRI estimates (Table 16). The Ohio is followed by the Tennessee River with 774,000 pounds, Old Road Bay in Maryland on the Chesapeake Bay, with 759,000 pounds, the Savannah River between Georgia and South Carolina with 525,000 pounds, and the Genesee River in New York with 507,000 pounds of persistent toxic metals reported as directly discharged into them during the five year period analyzed.

Alabama waters received more persistent metals between 1990 and 1994 than any other state, 1.67 million pounds, according to the TRI. Maryland ranked second, followed by the waters of Texas, Ohio and Georgia (Table 17).

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Appendix A

Carcinogens

1,1,2,2-Tetrachloroethane	beta-Propiolactone	Michler's ketone
1,1-Dimethylhydrazine (UDMH) (alar trans. prod.)	Bis (2-chloroethyl) ether	Mustard Gas
1,2-Dibromo-3-chloropropane (DBCP)	Bis(chloromethyl) ether	N-Nitroso-N-ethylurea
1,3-Butadiene	Bromodichloromethane	N-Nitroso-N-methylurea
1,3-Dichloropropylene	Bromoform	N-Nitrosodi-n-butylamine
1,3-Propane sultone	Cadmium	N-Nitrosodi-n-propylamine
1,4-Dioxane	Cadmium compounds	N-Nitrosodiethylamine
1-Amino-2-methylantraquinone	Captan	N-Nitrosodimethylamine
1-Naphthylamine	Carbon tetrachloride	N-Nitrosodiphenylamine
2,4,6-Trichlorophenol	Chlordane	N-Nitrosomethylvinylamine
2,4-Diaminoanisole	Chloroethane (Ethyl chloride)	N-Nitrosomorpholine
2,4-Diaminoanisole sulfate	Chloroform	N-Nitrosornicotine
2,4-Diaminotoluene	Chloromethyl methyl ether	N-Nitrosopiperidine
2,4-Dinitrotoluene	Chlorophenols	Nickel
2-Acetylaminofluorene	Chlorothalonil	Nickel compounds
2-Aminoanthraquinone	Chromium	Nitritriacetic acid
2-Methylaziridine (Propyleneimine)	Cupferron	Nitrofen
2-Naphthylamine	D&C Red No. 19	Nitrogen mustard (Mechlorethamine)
2-Nitropropane	DDVP (Dichlorvos)	ortho-Anisidine
3,3'-Dichlorobenzidine	Di -(2-ethylhexyl)phthalate	ortho-Anisidine hydrochloride
3,3'-Dimethoxybenzidine (ortho-Dianisidine)	Dichloromethane (Methylene chloride)	ortho-Toluidine
3,3'-Dimethylbenzidine	Diepoxybutane	ortho-Toluidine hydrochloride
4,4'-Diaminodiphenyl ether (4,4'-Oxydianiline)	Diethyl sulfate	p-Aminoazobenzene
4,4'-Methylene bis(2-chloroaniline)	Dimethyl sulfate	p-Cresidine
4,4'-Methylene bis(N,N-dimethyl) benzenamine	Dimethylcarbamoyl chloride	p-Dichlorobenzene
4,4'-Methylenedianiline	Direct Black 38	p-Nitrosodiphenylamine
4,4'-Thiodianiline	Direct Blue 6	Pentachlorophenol
4-Aminobiphenyl (4-aminodiphenyl)	Direct Brown 95	Polybrominated biphenyls
4-Dimethylaminoazobenzene	Epichlorohydrin	Polychlorinated biphenyls
4-Nitrobiphenyl	Ethyl acrylate	Propylene oxide
5-Nitro-o-anisidine	Ethylene dibromide	Saccharin
Acetaldehyde	Ethylene dichloride (1,2-Dichloroethane)	Safrole
Acetamide	Ethylene oxide	Styrene
Acrylamide	Ethylene thiourea (EBDC trans prod.)	Styrene oxide
Acrylonitrile	Ethyleneimine	Tetrachloroethylene (Perchloroethylene)
Allyl chloride	Formaldehyde	Thioacetamide
Aniline	Hexachlorobenzene	Thiourea
Arsenic	Hexachloroethane	Toluene-2,4-diisocyanate
Arsenic compounds	Hexamethylphosphoramide	Toluene-2,6-diisocyanate
Asbestos	Hydrazine	Toxaphene (Polychlorinated camphenes)
Auramine	Hydrazine sulfate	Trichloroethylene
Benzene	Hydrazobenzene (1,2-Diphenylhydrazine)	Tris(2,3-dibromopropyl)phosphate
Benzidine [and its salts]	Isosafrole	Urethane (Ethyl carbamate)
Benzotrithloride	Lead	Vinyl bromide
Benzyl chloride	Lead compounds	Vinyl chloride
Beryllium and beryllium compounds	Lindane	Vinyl trichloride (1,1,2-Trichloroethane)
Beryllium compounds	Methyl iodide	

Persistent Toxic Metals

Antimony & Antimony Compounds
 Arsenic & Arsenic Compounds
 Barium & Barium Compounds
 Beryllium & Beryllium Compounds
 Cadmium & Cadmium Compounds
 Chromium & Chromium Compounds
 Cobalt & Cobalt Compounds
 Copper & Copper Compounds
 Lead & Lead Compounds
 Manganese & Manganese Compounds
 Mercury & Mercury Compounds
 Nickel & Nickel Compounds
 Selenium & Selenium Compound
 Silver & Silver Compounds
 Thallium & Thallium Compounds
 Zinc & Zinc Compounds

Chemicals that Affect Reproduction

1,2-Dibromo-3-chloropropane
 Cadmium
 Carbon disulfide
 Diethylhexyl phthalate
 o-Dinitrobenzene
 m-Dinitrobenzene
 p-Dinitrobenzene
 Ethylene glycol monoethyl ether
 Ethylene glycol monomethyl ether
 Ethylene oxide
 Hexamethylphosphoramide
 Lead
 Styrene
 Toulene
 Trichloroethylene
 Xylene(mixed isomers)
 o-xylene
 m-xylene
 p-xylene
 Di-n-butyl phthalate
 Glycol ethers
 Mercury Compounds
 Mercury
 Benzene
 Aluminum
 Arsenic
 Nickel
 Lindane
 Vinyl Chloride

Source: Environmental Working Group. Compiled from California Proposition 65, EPA's TRI Public Data Release, New Jersey Department of Health, Hazardous Substances Fact Sheets, and Toxic Responses of the Reproductive System (Dixon 1986).

Appendix B

Chemicals with Changes in Reporting Requirements between 1990 and 1994.

Chemical Name	Action Taken	Effective Year
n-Dioctyl phthalate	delisted	1993
Barium sulfate	delisted	1993
Butyl benzyl phthalate	delisted	1994
Acetone	delisted	1994
Ammonium sulfate (solution)	delisted	1994
Barium compounds	modified	1993
Glycol ethers	modified	1993
Copper compounds	modified	1994
Ammonia	modified	1994
Sulfuric acid	modified	1994
CFC - 115	added	1991
Halon 1211	added	1991
Halon 1301	added	1991
Halon 2402	added	1991
CFC - 12	added	1991
CFC - 114	added	1991
CFC - 11	added	1991
1,1,1,2-tetrachloroethane	added	1994
HCFC - 123b	added	1994
HCFC - 141b	added	1994
HCFC - 123a	added	1994
1,4-dichloro-2-butene	added	1994
HCFC - 124a	added	1994
HCFC - 142b	added	1994
HCFC - 123	added	1994
HCFC - 124	added	1994
2-Methylpyridine	added	1994
5-Nitro-o-toluidine	added	1994
Acetophenone	added	1994
Amitrole	added	1994
Bis (2-chloroethoxy)methane	added	1994
HCFC - 22	added	1994
Chlorotetrafluoroethane	added	1994
Dichloro-1,1,2-trifluoroethane	added	1994
Dichlorotrifluoroethane	added	1994
Dihydrosafrole	added	1994
Ethylenebisdithiocarbamic acid	added	1994
Ethylidene dichloride	added	1994
Formic acid	added	1994
Hexachlorophene	added	1994
Malonitrile	added	1994
Methacrylonitrile	added	1994
Methyl chlorocarbonate	added	1994
Paraldehyde	added	1994
Pentachloroethane	added	1994
Pronamide	added	1994
Thiram	added	1994
Tryptan blue	added	1994
Warfarin and salts	added	1994

Source: United States Environmental Protection Agency, list included in communication from Kathy Franklin to Jacqueline Savitz, July 17, 1996.

Waterbodies Flowing Through Multiple States

Many waterbodies flow through, or are surrounded by, more than one state. The following pages summarize TRI releases to 15 such waterways. The State versions of *Dishonorable Discharge* include pages for each of the top ten waterways in a given state, and summarize releases from that state alone. This Appendix, however, contains data on releases from multiple states for waterbodies ranked among the top 50 in TRI water emissions, nationally, but which are not confined to only one state. These tabulations present information on the entire waterbody. The following waterbodies are included in Appendix C:

- Androscoggin River
- Columbia River
- Delaware River
- Hudson River
- Mississippi River
- Missouri River
- Ohio River
- Ouachita River
- Pacific Ocean
- Rock River
- Savannah River
- Susquehanna River
- Tennessee River
- Tombigbee River
- Wabash River

The Androscoggin River

Total toxic pollution reported (1990-1994): 1,388,133 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Androscoggin River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Maine	1,179,081	84.9%
New Hampshire	209,052	15.1%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Androscoggin River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
International Paper	Jay, ME	947,147
James River U.S. Holdings Inc.	Berlin, NH	209,052
Boise Cascade Corp.	Rumford, ME	207,934
Robinson Mfg. Co.	Oxford, ME	24,000

Table 3. Toxic chemicals discharged in the greatest amounts to the Androscoggin River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	682,237
Methanol	180,041
Manganese	174,611
Glycol ethers	135,044
Acetone	54,041
Chloroform	49,117
Ethylene glycol	46,456
Diethanolamine	24,000
Catechol	23,735
Chlorine	8,000

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Androscoggin River (1990-1994).**

Carcinogens	50,554 Pounds
Persistent Toxic Metals	179,711 Pounds
Reproductive Toxins	135,044 Pounds
Total‡	365,309 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Androscoggin River (1990-1994).**

Top dischargers of carcinogens to the Androscoggin River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Boise Cascade Corp.	Rumford, ME	30,973
International Paper	Jay, ME	11,236
James River U.S. Holdings	Berlin, NH	8,345

Top dischargers of persistent toxic metals to the Androscoggin River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
International Paper	Jay, ME	174,611
Boise Cascade Corp.	Rumford, ME	5,100

Top dischargers of reproductive toxins to the Androscoggin River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
International Paper	Jay, ME	135,044

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Columbia River

Total toxic pollution reported (1990-1994): 4,368,387 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Columbia River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Washington	3,366,871	77.1%
Oregon	1,001,516	22.9%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Columbia River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
James River Paper Co.	Camas, WA	1,413,974
Weyerhaeuser Co.	Longview, WA	1,082,575
James River Paper Co. Inc.	Clatskanie, OR	932,533
Longview Fibre Co.	Longview, WA	675,220
Boise Cascade	Wallula, WA	142,572
Chevron Chemical Co.	St. Helens, OR	54,100
Chevron Chemical Co.*	Kennewick, WA	16,529
Unocal Agricultural Prods.	Kennewick, WA	13,788
Northwest Aluminum Co. Inc.	The Dalles, OR	10,699
Reynolds Metals Co.	Longview, WA	9,153

Table 3. Toxic chemicals discharged in the greatest amounts to the Columbia River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,919,109
Chloroform	838,303
Formaldehyde	531,414
Methanol	308,431
Glycol ethers	207,460
Acetone	143,300
Chlorine	133,048
Ammonium nitrate (solution)	65,222
Methyl ethyl ketone	59,906
Chromium compounds	47,800

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Columbia River (1990-1994).**

Carcinogens	1,393,628 Pounds
Persistent Toxic Metals	57,494 Pounds
Reproductive Toxins	211,864 Pounds
Total‡	1,654,807 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Columbia River (1990-1994).**

Top dischargers of carcinogens to the Columbia River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Weyerhaeuser Co.	Longview, WA	683,947
Longview Fibre Co.	Longview, WA	630,270
James River Paper Co.	Camas, WA	36,700
James River Paper Co. Inc.	Clatskanie, OR	26,400
Boise Cascade	Wallula, WA	14,600

Top dischargers of persistent toxic metals to the Columbia River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
James River Paper Co.	Camas, WA	25,100
James River Paper Co. Inc.	Clatskanie, OR	15,800
Weyerhaeuser Co.	Longview, WA	13,800
Reynolds Metals Co.	Longview, WA	1,148
Kalama Chemical Inc.	Kalama, WA	841

Top dischargers of reproductive toxins to the Columbia River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
James River Paper Co. Inc.	Clatskanie, OR	207,460
Weyerhaeuser Co.	Longview, WA	3,904
James River Paper Co.	Camas, WA	500

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Delaware River

Total toxic pollution reported (1990-1994): 13,329,248 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Delaware River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
New Jersey	12,064,013	90.5%
Delaware	939,106	7.0%
Pennsylvania	326,129	2.4%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Delaware River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Du Pont	Deepwater, NJ	11,478,906
Star Enterprises	Delaware City, DE	658,350
BP Exploration & Oil Inc.	Trainer, PA	289,590
General Chemical Corp.	Claymont, DE	241,600
Coastal Eagle Point Oil Co.	Westville, NJ	181,616
Monsanto Co.	Bridgeport, NJ	177,959
J. T. Baker Inc.	Phillipsburg, NJ	90,948
Occidental Chemical Corp.	Burlington, NJ	48,582
Roche Vitamins & Fine	Belvidere, NJ	36,052
Mobil Oil Paulsboro Refy.	Paulsboro, NJ	28,132

Table 3. Toxic chemicals discharged in the greatest amounts to the Delaware River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	9,059,652
Ammonium sulfate (solution)	2,956,054
Diethanolamine	462,570
Ammonium nitrate (solution)	202,285
Chlorine	97,159
Chloromethane	76,138
Chloroethane	51,772
Lead compounds	42,585
Sulfuric acid	38,265
1,2-Dichloroethane	31,472

* This pollutant did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Delaware River (1990-1994).**

Carcinogens	174,259 Pounds
Persistent Toxic Metals	105,315 Pounds
Reproductive Toxins	49,325 Pounds
Total‡	265,461 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Delaware River (1990-1994).**

Top dischargers of carcinogens to the Delaware River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Du Pont	Deepwater, NJ	158,180
Franklin Smelting & Refining	Philadelphia, PA	5,000
Roche Vitamins & Fine	Belvidere, NJ	3,505
Star Enterprises	Delaware City, DE	2,670
Hoeganaes Corp.	Riverton, NJ	2,000

Top dischargers of persistent toxic metals to the Delaware River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Du Pont	Deepwater, NJ	61,435
USS Fairless Works	Fairless Hills, PA	17,139
J. T. Baker Inc.	Phillipsburg, NJ	9,593
Franklin Smelting & Refining	Philadelphia, PA	7,500
Hoeganaes Corp.	Riverton, NJ	5,280

Top dischargers of reproductive toxins to the Delaware River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Du Pont	Deepwater, NJ	32,815
Star Enterprises	Delaware City, DE	7,900
Franklin Smelting & Refining	Philadelphia, PA	3,750
National Chemical Labs.	Philadelphia, PA	1,115
Coastal Eagle Point Oil Co.	Westville, NJ	1,015

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Hudson River

Total toxic pollution reported (1990-1994): 1,729,084 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Hudson River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
New York	1,729,079	100.0%
New Jersey	5	0.0%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Hudson River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Finch Pruyn & Co. Inc.	Glens Falls, NY	1,104,505
General Electric Co.	Waterford, NY	557,353
International Paper Co.	Corinth, NY	31,323
Encore Paper Co.	South Glens Falls, NY	20,650
General Electric Co.	Selkirk, NY	7,418
Scott Worldwide*	Fort Edward, NY	2,800
Allied-Signal Inc.	Troy, NY	2,257
Cibro Petroleum Prods. Inc.*	Albany, NY	1,070
Bicc Utility Cable Co.	Yonkers, NY	750
Passonno Paints Inc.	Watervliet, NY	750

Table 3. Toxic chemicals discharged in the greatest amounts to the Hudson River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	846,548
Methanol	483,742
Manganese compounds	188,020
Acetone	122,000
Copper compounds	32,120
Chlorine	16,891
Zinc compounds	10,251
Toluene	5,955
Chloromethane	4,500
Chloroform	4,450

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Hudson River (1990-1994).**

Carcinogens	7,347 Pounds
Persistent Toxic Metals	232,977 Pounds
Reproductive Toxins	8,461 Pounds
Total‡	245,821 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Hudson River (1990-1994).**

Top dischargers of carcinogens to the Hudson River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Encore Paper Co.	South Glens Falls, NY	4,450
Allied-Signal Inc.	Troy, NY	991
General Electric Co.	Selkirk, NY	829
Bicc Utility Cable Co.	Yonkers, NY	750
Cibro Petroleum Prods. Inc.*	Albany, NY	265

Top dischargers of persistent toxic metals to the Hudson River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Finch Pruyn & Co. Inc.	Glens Falls, NY	188,000
General Electric Co.	Waterford, NY	37,970
General Electric Co.	Selkirk, NY	5,309
Allied-Signal Inc.	Troy, NY	764
Bicc Utility Cable Co.	Yonkers, NY	750

Top dischargers of reproductive toxins to the Hudson River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
General Electric Co.	Waterford, NY	6,370
Cibro Petroleum Prods. Inc.*	Albany, NY	795
Bicc Utility Cable Co.	Yonkers, NY	750
Passonno Paints Inc.	Watervliet, NY	250
Allied-Signal Inc.	Troy, NY	174

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Mississippi River

Total toxic pollution reported (1990-1994): 702,496,748 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Mississippi River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Louisiana	672,221,661	95.7%
Illinois	15,995,834	2.3%
Missouri	4,975,622	0.7%
Arkansas	2,956,994	0.4%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Mississippi River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
IMC-Agrico Co.	Saint James, LA	335,947,505
IMC-Agrico Co.	Uncle Sam, LA	205,451,043
Arcadian Fertilizer L.P.	Geismar, LA	103,844,175
3M	Cordova, IL	14,802,439
Laroche Chemicals Inc.*	Baton Rouge, LA	4,600,200
Le Chem Inc.*	Baton Rouge, LA	3,897,392
CF Ind. Inc.	Donaldsonville, LA	3,851,995
Dyno Nobel Inc. Lomo Plant	Louisiana, MO	3,382,760
Melamine Chemicals Inc.	Donaldsonville, LA	2,542,686
Dow Chemical Co.	Plaquemine, LA	2,145,934

Table 3. Toxic chemicals discharged in the greatest amounts to the Mississippi River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Phosphoric acid	530,782,803
Sulfuric acid	109,940,190
Ammonia	35,407,918
Ammonium nitrate (solution)	9,953,129
Ammonium sulfate (solution)	7,616,779
Methanol	5,389,840
Ethylene glycol	610,541
Chlorine	608,228
1,4-Dioxane	271,939
Acetone	216,972

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Mississippi River (1990-1994).**

Carcinogens	663,277 Pounds
Persistent Toxic Metals	325,119 Pounds
Reproductive Toxins	108,195 Pounds
Total‡	1,016,676 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Mississippi River (1990-1994).**

Top dischargers of carcinogens to the Mississippi River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Union Carbide Corp.	Taft, LA	254,045
Dow Chemical Co.	Plaquemine, LA	100,630
International Paper	Natchez, MS	72,497
Monsanto Co.	Luling, LA	39,830
BASF Corp.	Geismar, LA	30,569

Top dischargers of persistent toxic metals to the Mississippi River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Arcadian Fertilizer L.P.	Geismar, LA	28,000
Shell Oil Co.	Roxana, IL	25,480
Exxon Co. USA - Refinery	Baton Rouge, LA	22,100
3M	Cottage Grove, MN	20,620
Potlatch Corp.	Mc Gehee, AR	19,730

Top dischargers of reproductive toxins to the Mississippi River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Star Enterprise	Union, LA	23,061
Ferro Corp.	Zachary, LA	22,520
Geon Co.*	Plaquemine, LA	10,750
Exxon Chemical Plant	Baton Rouge, LA	5,947
Dow Chemical Co.	Plaquemine, LA	5,143

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Missouri River

Total toxic pollution reported (1990-1994): 1,727,759 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Missouri River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Iowa	1,358,772	78.6%
Missouri	226,163	13.1%
Nebraska	114,865	6.6%
North Dakota	16,399	0.9%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Missouri River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Terra Intl. Inc.	Sergeant Bluff, IA	1,213,545
Bayer Corp.	Kansas City, MO	223,226
Kind & Knox Gelatin	Sergeant Bluff, IA	131,060
Arcadian Fertilizer L.P.	Laplatte, NE	58,510
Asarco Inc.	Omaha, NE	56,340
Amoco Oil Co.*	Mandan, ND	16,399
Ag Processing Inc.	Sergeant Bluff, IA	14,167
Owens-Corning Fiberglas	Kansas City, KS	11,000
Cook Composites & Polymers	North Kansas City,	2,565
General Motors Corp.	Kansas City, KS	500

Table 3. Toxic chemicals discharged in the greatest amounts to the Missouri River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,124,007
Ammonium nitrate (solution)	493,950
Lead compounds	24,468
Methanol	21,403
Chlorine	14,267
Antimony compounds	12,770
Zinc compounds	12,520
Phosphoric acid	11,000
Arsenic compounds	6,550
Styrene	1,065

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Missouri River (1990-1994).**

Carcinogens	34,026 Pounds
Persistent Toxic Metals	57,077 Pounds
Reproductive Toxins	2,221 Pounds
Total‡	61,105 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Missouri River (1990-1994).**

Top dischargers of carcinogens to the Missouri River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Asarco Inc.	Omaha, NE	30,910
Bayer Corp.	Kansas City, MO	1,517
Cook Composites & Johnson Controls	North Kansas City, Saint Joseph, MO	1,315
		100

Top dischargers of persistent toxic metals to the Missouri River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Asarco Inc.	Omaha, NE	56,340
General Motors Corp.	Kansas City, KS	500
Johnson Controls	Saint Joseph, MO	100

Top dischargers of reproductive toxins to the Missouri River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Cook Composites & Bayer Corp.	North Kansas City, Kansas City, MO	1,565
		584

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Ohio River

Total toxic pollution reported (1990-1994): 22,072,491 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Ohio River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Ohio	16,030,122	72.6%
West Virginia	4,743,247	21.5%
Pennsylvania	514,408	2.3%
Illinois	355,017	1.6%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Ohio River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Elkem Metals Co.	Marietta, OH	13,845,443
Weirton Steel Corp.	Weirton, WV	1,334,595
Monsanto Co.	Addyston, OH	1,219,557
Wheeling-Pittsburgh Steel Corp	Follansbee, WV	1,197,600
Cytec Ind.	Belmont, WV	856,876
Shenango Inc.	Pittsburgh, PA	450,094
Bayer Corp.	New Martinsville, WV	428,462
Allied Signal Inc.	Metropolis, IL	355,017
Wheeling-Pittsburgh Steel	Mingo Junction, OH	341,841
Du Pont	Washington, WV	317,097

Table 3. Toxic chemicals discharged in the greatest amounts to the Ohio River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	18,510,728
Methanol	670,893
Manganese compounds	656,555
Ammonium sulfate (solution)	310,110
Chlorine	242,146
Ethylene glycol	233,498
Zinc compounds	141,038
Chromium compounds	138,776
Formaldehyde	133,197
Ammonium nitrate (solution)	126,400

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Ohio River (1990-1994).**

Carcinogens	275,949 Pounds
Persistent Toxic Metals	1,148,676 Pounds
Reproductive Toxins	197,397 Pounds
Total‡	1,533,205 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Ohio River (1990-1994).**

Top dischargers of carcinogens to the Ohio River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Monsanto Co.	Addyston, OH	105,601
Willamette Ind. Inc.	Hawesville, KY	33,250
Weirton Steel Corp.	Weirton, WV	29,422
General Electric Co.	Mount Vernon, IN	23,184
Bayer Corp.	New Martinsville, WV	16,260

Top dischargers of persistent toxic metals to the Ohio River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Elkem Metals Co.	Marietta, OH	540,300
Weirton Steel Corp.	Weirton, WV	409,571
Wheeling-Pittsburgh Steel	Mingo Junction, OH	51,941
AK Steel Corp. - West Works	Ashland, KY	22,450
Bayer Corp.	New Martinsville, WV	22,394

Top dischargers of reproductive toxins to the Ohio River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
OSI Specialties Inc.	Sistersville, WV	46,171
General Electric Co.	Mount Vernon, IN	32,698
Akzo Nobel Chemicals Inc.	Gallipolis Ferry, WV	28,859
AK Steel Corp. - West Works	Ashland, KY	22,105
Weirton Steel Corp.	Weirton, WV	12,230

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Ouachita River

Total toxic pollution reported (1990-1994): 4,925,933 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Ouachita River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Arkansas	4,041,624	82.0%
Louisiana	884,309	18.0%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Ouachita River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
U.S. Vanadium Corp.	Hot Springs, AR	3,709,500
Riverwood Intl. Inc.	West Monroe, LA	427,082
Georgia-Pacific Corp.	Crossett, AR	324,048
Koch Nitrogen Co.	Sterlington, LA	315,862
Angus Chemical Co.	Sterlington, LA	128,606
Riverwood Intl. USA Inc.*	West Monroe, LA	12,759
International Paper	Camden, AR	7,301
Celotex Corp.	Camden, AR	760

Table 3. Toxic chemicals discharged in the greatest amounts to the Ouachita River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	4,103,593
Zinc compounds	380,046
Methanol	275,084
Acetone	60,227
Acetaldehyde	16,970
Catechol	13,391
Toluene	12,679
Methyl ethyl ketone	11,735
Chloroform	11,215
Zinc (fume or dust)	8,770

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Ouachita River (1990-1994).**

Carcinogens	47,232 Pounds
Persistent Toxic Metals	401,139 Pounds
Reproductive Toxins	20,348 Pounds
Total‡	452,124 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Ouachita River (1990-1994).**

Top dischargers of carcinogens to the Ouachita River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Angus Chemical Co.	Sterlington, LA	25,210
Georgia-Pacific Corp.	Crossett, AR	13,925
Riverwood Intl. Inc.	West Monroe, LA	4,052
U.S. Vanadium Corp.	Hot Springs, AR	3,250
International Paper	Camden, AR	750

Top dischargers of persistent toxic metals to the Ouachita River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Riverwood Intl. Inc.	West Monroe, LA	375,248
Georgia-Pacific Corp.	Crossett, AR	14,570
Angus Chemical Co.	Sterlington, LA	6,650
U.S. Vanadium Corp.	Hot Springs, AR	3,500
Celotex Corp.	Camden, AR	760

Top dischargers of reproductive toxins to the Ouachita River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Riverwood Intl. USA Inc.*	West Monroe, LA	12,688
Angus Chemical Co.	Sterlington, LA	6,650
Georgia-Pacific Corp.	Crossett, AR	1,010

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Pacific Ocean

Total toxic pollution reported (1990-1994): 35,195,908 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Pacific Ocean (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
California	34,879,722	99.1%
Oregon	259,864	0.7%
Hawaii	56,322	0.2%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Pacific Ocean (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Louisiana-Pacific Corp.	Samoa, CA	21,484,105
Simpson Paper Co.*	Eureka, CA	13,317,670
Georgia-Pacific West Corp.	Toledo, OR	154,995
Unocal 76 Prods. Co.	Arroyo Grande, CA	65,554
International Paper	Gardiner, OR	61,571
Chevron USA Prod. Co.	Ewa Beach, HI	56,305
Weyerhaeuser Paper Co.	North Bend, OR	43,298
Unisys Corp.*	San Diego, CA	6,575
Unocal*	Wilmington, CA	4,528
PC World*	Irvine, CA	505

Table 3. Toxic chemicals discharged in the greatest amounts to the Pacific Ocean (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Methanol	33,139,098
Hydrochloric acid	576,080
Acetone	335,875
Sulfuric acid	319,270
Ammonia	258,634
Chloroform	228,600
Acetaldehyde	126,820
Catechol	91,266
Methyl ethyl ketone	34,670
Chromium compounds	29,015

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Pacific Ocean (1990-1994).**

Carcinogens	369,320 Pounds
Persistent Toxic Metals	35,938 Pounds
Reproductive Toxins	5,800 Pounds
Total‡	403,688 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Pacific Ocean (1990-1994).**

Top dischargers of carcinogens to the Pacific Ocean (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Louisiana-Pacific Corp.	Samoa, CA	222,000
Simpson Paper Co.*	Eureka, CA	132,800
Georgia-Pacific West Corp.	Toledo, OR	7,020
International Paper	Gardiner, OR	3,600
Weyerhaeuser Paper Co.	North Bend, OR	3,000

Top dischargers of persistent toxic metals to the Pacific Ocean (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Louisiana-Pacific Corp.	Samoa, CA	29,000
Simpson Paper Co.*	Eureka, CA	6,200
Brite Plating Co. Inc.*	Los Angeles, CA	250
U.S. Navy Long Beach Naval	Long Beach, CA	250

Top dischargers of reproductive toxins to the Pacific Ocean (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Chevron USA Prod. Co.	Ewa Beach, HI	3,045
Unocal*	Wilmington, CA	2,465
Brite Plating Co. Inc.*	Los Angeles, CA	250

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Rock River

Total toxic pollution reported (1990-1994): 8,165,469 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Rock River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Illinois	8,163,860	100.0%
Wisconsin	1,609	0.0%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Rock River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
IBP Inc.	Joslin, IL	8,144,910
Northwestern Steel & Wire Co.	Sterling, IL	12,456
Sall-Eclipse Inc.	Rockford, IL	3,750
Quality Metal Finishing Co.	Byron, IL	1,387
Sonoco Prods. Co.*	Rockton, IL	1,250
GMC*	Janesville, WI	859
Janesville Wastewater Utility	Janesville, WI	750

Table 3. Toxic chemicals discharged in the greatest amounts to the Rock River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium sulfate (solution)	5,449,010
Ammonia	2,736,187
Zinc compounds	7,367
Manganese compounds	3,459
Chromium compounds	2,381
Zinc (fume or dust)	1,500
Lead	1,250
Lead compounds	1,015
Copper	1,000
Nickel compounds	955

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Rock River (1990-1994).**

Carcinogens	3,220 Pounds
Persistent Toxic Metals	19,446 Pounds
Reproductive Toxins	1,500 Pounds
Total‡	19,696 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Rock River (1990-1994).**

Top dischargers of carcinogens to the Rock River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Sall-Eclipse Inc.	Rockford, IL	1,250
Northwestern Steel & Wire	Sterling, IL	855
Quality Metal Finishing Co.	Byron, IL	805
Gmc*	Janesville, WI	310

Top dischargers of persistent toxic metals to the Rock River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Northwestern Steel & Wire	Sterling, IL	12,456
Sall-Eclipse Inc.	Rockford, IL	3,750
Quality Metal Finishing Co.	Byron, IL	1,324
IBP Inc.	Joslin, IL	1,000
Gmc*	Janesville, WI	859

Top dischargers of reproductive toxins to the Rock River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Sall-Eclipse Inc.	Rockford, IL	1,250
IBP Inc.	Joslin, IL	250

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Savannah River

Total toxic pollution reported (1990-1994): 13,968,965 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Savannah River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Georgia	13,939,285	99.8%
South Carolina	29,680	0.2%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Savannah River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Arcadian Corp.	Port Wentworth, GA	4,669,369
Arcadian Fertilizer L. P.	Augusta, GA	4,346,080
Union Camp Corp.	Savannah, GA	1,718,904
Engelhard Corp.	Savannah, GA	1,253,767
DSM Chemicals N.A. Inc.	Augusta, GA	983,874
Kemira Pigments Inc.	Savannah, GA	551,530
Stone Savannah River Pulp	Port Wentworth, GA	322,610
Federal Paper Board Co. Inc.	Augusta, GA	78,407
Sandoz Chemicals Corp.	Martin, SC	29,480
Citgo Asphalt Refining Co.*	Savannah, GA	5,370

Table 3. Toxic chemicals discharged in the greatest amounts to the Savannah River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	6,964,506
Ammonia	3,175,325
Methanol	1,987,548
Ammonium sulfate (solution)	826,596
Zinc compounds	405,889
Acetone	361,320
Chromium compounds	77,114
Catechol	41,934
Nickel compounds	38,200
Sulfuric acid	28,943

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Savannah River (1990-1994).**

Carcinogens	50,468 Pounds
Persistent Toxic Metals	525,753 Pounds
Reproductive Toxins	7,068 Pounds
Total‡	544,742 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Savannah River (1990-1994).**

Top dischargers of carcinogens to the Savannah River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Kemira Pigments Inc.	Savannah, GA	38,200
Federal Paper Board Co. Inc.	Augusta, GA	3,165
Fort Howard Corp.	Rincon, GA	3,160
Stone Savannah River Pulp	Port Wentworth, GA	3,096
Union Camp Corp.	Savannah, GA	2,291

Top dischargers of persistent toxic metals to the Savannah River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Kemira Pigments Inc.	Savannah, GA	491,000
Union Camp Corp.	Savannah, GA	25,000
Federal Paper Board Co. Inc.	Augusta, GA	7,300
DSM Chemicals N.A. Inc.	Augusta, GA	2,119
Sandoz Chemicals Corp.	Martin, SC	250

Top dischargers of reproductive toxins to the Savannah River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Union Camp Corp.	Savannah, GA	5,130
Sandoz Chemicals Corp.	Martin, SC	1,034
Citgo Asphalt Refining Co.*	Savannah, GA	770

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Susquehanna River

Total toxic pollution reported (1990-1994): 2,144,339 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Susquehanna River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Pennsylvania	1,956,196	91.2%
New York	188,143	8.8%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Susquehanna River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Osram Sylvania Inc.	Towanda, PA	1,576,204
Howes Leather Co. Inc.	Curwensville, PA	202,601
Hadco Corp.	Owego, NY	179,755
Bethlehem Steel Corp.	Steelton, PA	61,401
Merck & Co. Inc.	Riverside, PA	58,128
Procter & Gamble	Mehoopany, PA	48,541
IBM Corp.	Endicott, NY	5,390
National Gypsum Co.	New Columbia, PA	4,300
Armstrong World Ind. Marietta	Marietta, PA	2,520
Amphenol Corp.	Sidney, NY	1,565

Table 3. Toxic chemicals discharged in the greatest amounts to the Susquehanna River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,607,656
Molybdenum trioxide	189,341
Ammonium sulfate (solution)	159,000
Manganese compounds	50,724
Methanol	48,035
Zinc compounds	16,251
Ethylene glycol	15,250
Nickel compounds	11,050
Acetonitrile	7,830
Pyridine	6,800

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Susquehanna River (1990-1994).**

Carcinogens	20,328 Pounds
Persistent Toxic Metals	95,326 Pounds
Reproductive Toxins	3,376 Pounds
Total‡	104,587 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Susquehanna River (1990-1994).**

Top dischargers of carcinogens to the Susquehanna River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Osram Sylvania Inc.	Towanda, PA	8,377
Bethlehem Steel Corp.	Steelton, PA	4,229
Procter & Gamble	Mehoopany, PA	3,541
Hadco Corp.	Owego, NY	1,250
Merck & Co. Inc.	Riverside, PA	930

Top dischargers of persistent toxic metals to the Susquehanna River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Bethlehem Steel Corp.	Steelton, PA	61,401
Osram Sylvania Inc.	Towanda, PA	20,560
Merck & Co. Inc.	Riverside, PA	5,670
IBM Corp.	Endicott, NY	3,500
Endicott Forging*	Endicott, NY	1,000

Top dischargers of reproductive toxins to the Susquehanna River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Hadco Corp.	Owego, NY	1,750
Amphenol Corp.	Sidney, NY	893
Merck & Co. Inc.	Riverside, PA	700

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Tennessee River

Total toxic pollution reported (1990-1994): 22,031,743 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Tennessee River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Alabama	12,078,136	54.8%
Tennessee	8,494,430	38.6%
Kentucky	1,459,177	6.6%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Tennessee River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Inland Container Corp.	New Johnsonville, TN	7,963,258
Monsanto Co.	Decatur, AL	6,012,620
Champion Intl. Corp.	Courtland, AL	3,887,851
Laroche Ind. Inc.	Cherokee, AL	1,342,300
ISP Chemicals Inc.	Calvert City, KY	1,307,825
Amoco Chemical Co.	Decatur, AL	745,480
Packaging Corp. Of America	Counce, TN	393,262
Elf Atochem N.A. Inc.	Calvert City, KY	78,551
Du Pont*	Chattanooga, TN	77,171
Mead Containerboard	Stevenson, AL	60,240

Table 3. Toxic chemicals discharged in the greatest amounts to the Tennessee River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	8,541,224
Ammonium sulfate (solution)	7,600,000
Methanol	3,723,955
Ammonium nitrate (solution)	1,049,550
Manganese compounds	420,295
Cobalt compounds	319,000
Formaldehyde	93,292
Chlorine	61,101
Ethylene glycol	46,410
Acetone	25,307

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Tennessee River (1990-1994).**

Carcinogens	143,838 Pounds
Persistent Toxic Metals	774,194 Pounds
Reproductive Toxins	6,730 Pounds
Total‡	910,924 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Tennessee River (1990-1994).**

Top dischargers of carcinogens to the Tennessee River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
ISP Chemicals Inc.	Calvert City, KY	96,125
Monsanto Co.	Decatur, AL	22,218
Champion Intl. Corp.	Courtland, AL	17,900
BF Goodrich	Calvert City, KY	1,963
Elf Atochem N.A. Inc.	Calvert City, KY	1,909

Top dischargers of persistent toxic metals to the Tennessee River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Amoco Chemical Co.	Decatur, AL	729,000
Monsanto Co.	Decatur, AL	20,450
GMC Saginaw Div.	Athens, AL	7,896
ISP Chemicals Inc.	Calvert City, KY	4,478
Elf Atochem N.A. Inc.	Calvert City, KY	3,000

Top dischargers of reproductive toxins to the Tennessee River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
ISP Chemicals Inc.	Calvert City, KY	2,890
Monsanto Co.	Decatur, AL	1,786
GMC Saginaw Div.	Athens, AL	978
BF Goodrich	Calvert City, KY	571
Aqua Chem Inc.	Knoxville, TN	250

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Tombigbee River

Total toxic pollution reported (1990-1994): 1,210,471 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Tombigbee River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Alabama	803,331	66.4%
Mississippi	407,140	33.6%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Tombigbee River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Boise Cascade Corp.	Jackson, AL	449,411
Kerr-McGee Chemical Corp.	Hamilton, MS	372,330
Ciba-Geigy	Mc Intosh, AL	158,841
James River Corp.	Pennington, AL	134,635
Gulf States Paper Corp.	Demopolis, AL	60,345
Columbus Pulp & Paper	Columbus, MS	18,995
Kerr-McGee Chemical Corp.	Hamilton, MS	6,173
EKA Nobel Inc.	Columbus, MS	5,743
True Temper Sports	Amory, MS	3,894

Table 3. Toxic chemicals discharged in the greatest amounts to the Tombigbee River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	463,317
Methanol	391,170
Chloroform	83,868
Acetone	67,323
Manganese compounds	45,700
Zinc compounds	41,875
Nitrilotriacetic acid	24,910
Epichlorohydrin	20,750
Methyl isobutyl ketone	18,704
Catechol	13,020

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Tombigbee River (1990-1994).**

Carcinogens	136,245 Pounds
Persistent Toxic Metals	94,498 Pounds
Reproductive Toxins	1,050 Pounds
Total‡	230,665 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Tombigbee River (1990-1994).**

Top dischargers of carcinogens to the Tombigbee River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Ciba-Geigy	Mc Intosh, AL	47,725
James River Corp.	Pennington, AL	36,291
Gulf States Paper Corp.	Demopolis, AL	35,950
Boise Cascade Corp.	Jackson, AL	14,456
True Temper Sports	Amory, MS	1,118

Top dischargers of persistent toxic metals to the Tombigbee River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Kerr-McGee Chemical Corp.	Hamilton, MS	49,230
Boise Cascade Corp.	Jackson, AL	36,800
James River Corp.	Pennington, AL	5,287
True Temper Sports	Amory, MS	2,953
EKA Nobel Inc.	Columbus, MS	223

Top dischargers of reproductive toxins to the Tombigbee River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Ciba-Geigy	Mc Intosh, AL	1,045

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.

The Wabash River

Total toxic pollution reported (1990-1994): 1,532,308 Pounds

Table 1. States discharging the greatest amounts of toxic chemicals to the Wabash River (1990-1994).

State	Toxic chemical release to water (pounds)	Percent of total release
Indiana	1,532,282	100.0%
Illinois	14	0.0%
Ohio	12	0.0%

Table 2. Polluters discharging the greatest amounts of toxic chemicals to the Wabash River (1990-1994).

Facility	Location	Toxic chemical release to water (pounds)
Tippecanoe Labs.	Shadeland, IN	1,162,743
Clinton Labs.	Clinton, IN	291,755
Mallinckrodt Veterinary Inc.	Terre Haute, IN	28,324
Weston Paper & Mfg. Co.	Terre Haute, IN	27,710
Jefferson Smurfit Corp. (U.S.)	Wabash, IN	9,548
Inland Container Corp.	Newport, IN	9,024
Landis & Gyr Energy	Lafayette, IN	1,250
Harrison Steel Castings Co.	Attica, IN	1,058
Applied Extrusion Techs.	Terre Haute, IN	250
Flexel Indiana Inc.*	Covington, IN	250

Table 3. Toxic chemicals discharged in the greatest amounts to the Wabash River (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	1,323,478
Zinc compounds	113,450
Chlorine	34,440
Dichloromethane	13,595
Glycol ethers	12,121
Methanol	10,760
Ammonium nitrate (solution)	9,288
Acetonitrile	3,105
Acetone	2,020
Xylene (mixed isomers)	1,425

* This polluter did not report any discharges to water in 1994. See Table 9 in state editions of "Dishonorable Discharge" for year to year pollution figures.

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 4 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 4.

Table 4. Total carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Wabash River (1990-1994).**

Carcinogens	17,122 Pounds
Persistent Toxic Metals	115,908 Pounds
Reproductive Toxins	15,446 Pounds
Total‡	145,928 Pounds

Table 5. Polluters reporting the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** discharged to the Wabash River (1990-1994).**

Top dischargers of carcinogens to the Wabash River (1990-1994).**

Facility	Location	Carcinogens** released to water (lbs)
Clinton Labs.	Clinton, IN	9,960
Tippecanoe Labs.	Shadeland, IN	5,185
Landis & Gyr Energy	Lafayette, IN	1,000
Harrison Steel Castings Co.	Attica, IN	798
C & D Charter Power Sys.	Attica, IN	125

Top dischargers of persistent toxic metals to the Wabash River (1990-1994).

Facility	Location	Persistent toxic metals released to water (lbs)
Clinton Labs.	Clinton, IN	113,225
Harrison Steel Castings Co.	Attica, IN	1,058
Tippecanoe Labs.	Shadeland, IN	1,000
Landis & Gyr Energy	Lafayette, IN	250
Ford Meter Box Co. Inc.	Wabash, IN	209

Top dischargers of reproductive toxins to the Wabash River (1990-1994).**

Facility	Location	Reproductive toxins** released to water (lbs)
Weston Paper & Mfg. Co.	Terre Haute, IN	11,616
Tippecanoe Labs.	Shadeland, IN	2,239
Landis & Gyr Energy	Lafayette, IN	1,000
Harrison Steel Castings Co.	Attica, IN	529

** Carcinogens and reproductive toxins defined by the State of California Proposition 65, EPA's TRI Public Data Release and other literature. See full report for references.

Source: Environmental Working Group. Compiled from U.S. Environmental Protection Agency, Toxics Release Inventory 1990-1994.