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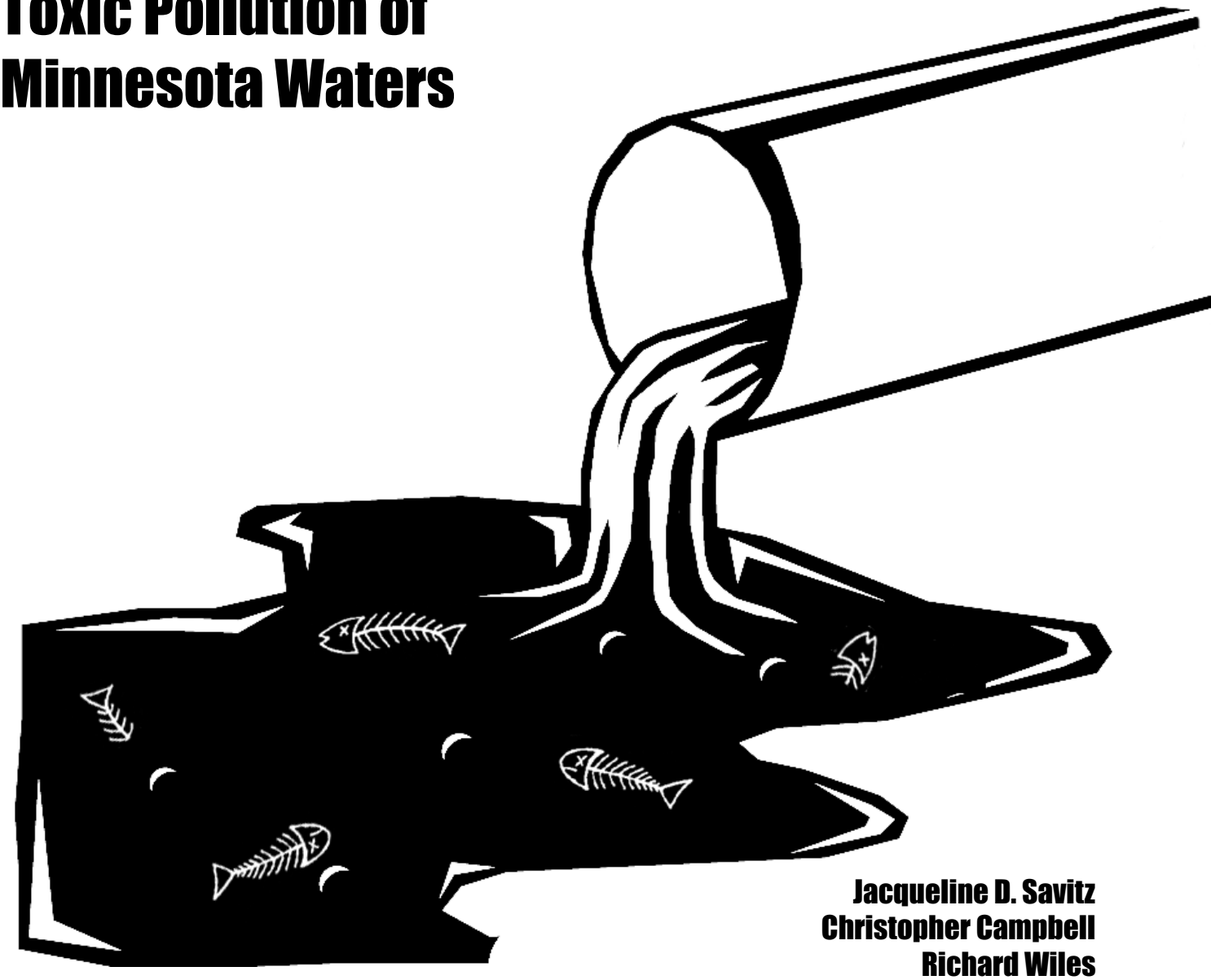
# Dishonorable Discharge

## Toxic Pollution of Minnesota Waters



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# Toxic Pollution of Minnesota Waters

## Executive Summary

Most Minnesota citizens would be surprised to learn that scores of businesses and facilities across the state *legally* dump tons of toxic chemicals into the state's rivers, streams, lakes, and bays. Many of these same polluters flush millions more pounds of toxic substances down the drain to sewage treatment plants that taxpayers pay to operate and maintain. None of the toxic chemicals sent to publicly financed sewage treatment systems are reported as pollution by the EPA, even though a great deal of the toxic load eventually finds its way to Minnesota streams and rivers.

The citizens of Minnesota have a right to know about any pollution of their water, air or land that may pose a risk to human health or the environment. The goal of *Dishonorable Discharge* is to inform the public about the massive level of toxic pollution of the waters in their state, and point out the need for more comprehensive reporting of toxic chemical use, transport, and pollution, in Minnesota and nationwide.

Factories and other industrial facilities dumped more than 2.8 million pounds of toxic substances directly into Minnesota's waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Minnesota ranked 30th among the states in toxic water pollution reported over those five years. Because of weaknesses and loopholes in federal pollution laws, most, if not all of these toxic discharges are perfectly legal.

As large as they are, these figures substantially underestimate toxic releases to waters and the environment because the TRI requires reporting of only about 340 of the 73,000 chemicals in commerce. The TRI also exempts certain industries from reporting, including utilities, sewage treatment plants, municipal incinerators, and manufacturing facilities with fewer than ten employees.

In addition, almost thirty million pounds of toxic materials were flushed to sewage treatment plants in Minnesota from 1990 through 1994, 17th in the nation (Table 1.) EPA estimates that twenty-five percent of all discharges nationwide flow through sewage treatment plants untreated (EPA 1995). Applying this 25 percent estimate to Minnesota raises the total amount of toxics dumped to the state's waters to an estimated 9.8 million pounds (Table 1).

The Mississippi River received the greatest amount of toxic water pollution in Minnesota from 1990-1994, a total of 2,090,000 pounds, followed by the Rainy River, the Red River Of The North, and the Rock River (Table 2). The ten most polluted waterways in Minnesota received 2,750,000 pounds of toxic pollution between 1990 and 1994, 97.7% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Minnesota's waters over this period were the 3M facility in Cottage Grove, which dumped 1,240,000 pounds of

toxic chemicals, followed by Koch Refining Company, and Boise Cascade Corporation in the towns of Rosemount, and International Falls, respectively (Table 3). The toxic chemicals dumped in the greatest amounts were ammonia, a total of 2,110,000 pounds, followed by methanol, and chloroform (Table 4).

Boise Cascade Corporation dumped the most carcinogens into Minnesota's waters, a total of 97,100 pounds, followed by 3M and Ashland Petroleum Company (Table 8). The Rainy River received the greatest amount of cancer-causing toxic chemicals in Minnesota, a total of 97,000 pounds, followed by the Mississippi River and the St. Louis River (Table 7).

3M dumped the greatest amount of persistent toxic metals in Minnesota's waters, a total of 21,000 pounds, followed by Koch Refining Company and Ashland Petroleum Company (Table 8). The Mississippi River received the greatest amount of persistent toxic metals, a total of 41,000 pounds, followed by the St. Louis River and the Fish Creek (Table 7).

Ashland Petroleum Company dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Minnesota's waters, a total of 2,000 pounds, followed by 3M (Table 8). The Mississippi River received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 3,000 pounds (Table 7).

These discharges to Minnesota's waters include only those wastes released by companies physically located in Minnesota. Many waterways receive additional pollution from sources outside of the state. Information on toxic water pollution in other states can be found in EWG's state reports series, and in the national report, *Dishonorable Discharge*.

## Recommendations

Americans have a right to know about any use, transport, or release of 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. Much more complete reporting is needed. 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.

Full accounting of the use of toxic materials reveals many low cost opportunities for pollution prevention. In New Jersey, state officials estimate that every dollar spent on such materials accounting practices 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 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 TRI reporting requirements to include full materials accounting for any facility or industry that uses or releases a toxic substance that may pose a risk to human health and the environment.

# Dishonorable Discharge

Toxic pollution of rivers, lakes, streams, and bays is a serious problem in all 50 states. Twenty five years after the passage of the Clean Water Act, nearly forty (40) percent of America's rivers, lakes, and coastal waters remain unsafe for fishing, swimming or basic recreation (EPA 1996b). In Minnesota all 272 miles of Lake Superior shoreline surveyed have elevated levels of toxic chemicals, and have fish consumption advisories. (EPA 1995b). The pollution that fouls these waterways costs the state's economy millions of dollars in tourism, fishing, and development revenues that otherwise could be earned on or near these waters were they not so polluted (EPA 1996b).

## *Dishonorable Discharge* Underestimates Toxic Pollution

The Toxics Release Inventory (TRI) provides a rough estimate of a small portion of the toxic chemicals that flow into America's waters. The toxic discharges reported in this study are based on TRI reported toxic releases to waterways and so-called "transfers" of toxics to publicly owned treatment works (POTWs) — the term of art that industry and the EPA use when an industrial facility dumps toxic chemicals into the local sewer.

The figures reported in *Dishonorable Discharge* dramatically underestimate the total amounts of toxic compounds that have been discharged, dumped, or made their way into rivers and lakes across the country over the past five years.

About 90[1] percent of all toxic discharges coming out of pipes into water (so-called point source discharges) are not reported to the TRI. This is because the TRI requires reporting on only about 343[2] of some 73,000 chemicals used in commerce, and because the TRI exempts many polluters (utilities, certain industries, and those with fewer than ten employees) from reporting requirements (EPA 1996).

About half of all toxics that pollute rivers come from surface runoff and air deposition, as opposed to pipes. Comprehensive accounting of this "nonpoint source" pollution is not available for all rivers on a national basis.

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 and lakes over the past five years might be 20 times greater than the amounts reported here.

## 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 trans-

ferred to sewers from industrial facilities pass through treatment and into the waterways that receive wastewater (EPA 1995).

Transfers of toxic chemicals to publicly owned treatment works (POTWs) — otherwise known as sewage treatment plants — were four times greater in 1994 than the amount of toxic chemicals released directly to water that are reported in the entire TRI that year. To estimate the total amounts of toxic substances dumped into Minnesota's waters, we used EPA's assumption that 25 percent of all toxic chemicals transferred to POTWs pass-through untreated[3]. Table 1 presents the EWG estimate of toxic chemicals assumed to be discharged by the POTWs in Minnesota. Estimates of toxic discharges from POTWs to specific rivers and bodies of water could not be accurately estimated because the sewage treatment plants are not required to report to the TRI.

Assuming a 25 percent flow-through also does not permit discharge estimates for individual toxic chemicals that flow through the sewer system into waterways. In reality some chemicals flow through POTW's 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.

## How Toxic is Toxic?

Some 340 substances were required to be reported to the EPA for the years analyzed in this report. 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 reasonably be 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).

For most of the TRI chemicals, federal regulators and scientists have a disturbingly incomplete understanding of the long term toxic effects on the environment or human health. The vast majority of compounds reported in the TRI are not fully studied, even though they have triggered one of the above criteria.

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.

One of the more glaring exemptions may be the so-called "domestic sewage exclusion" under RCRA, whereby toxic contaminants sent to sewage treatment plants escape otherwise applicable federal hazardous waste regulations. This accounts for the huge amounts of toxic chemicals that were dumped down the drain by American industry and end up in the nation's rivers and streams. Another major source of toxic pollution of waters is agricultural pesticides. The runoff of pesticides from agricultural fields is not regulated under any federal law, and is not tabulated by the TRI nor included in this report. About 1.1 billion pounds[4] of pesticides were used in the United States in 1993 alone (Aspelin 1994).

*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. It includes the releases of only 343 chemicals from about 27,000 manufacturing facilities. The limitations of these data have been described above.

## 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. For purposes of this analysis, toxic release data for major rivers themselves are tabulated separately, not summed as 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 joins the Mississippi just above St. Louis. Small streams receiving large quantity discharges (such as Gravelly Run in Virginia and Clear Creek in Colorado) were reported individually, just as they are recorded in the TRI. State-level reports only include discharges to a given river from facilities that are physically located in this state, not discharges from facilities located in other states upstream.

## 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 in the TRI, the Agency estimates that an average of 25 percent of these transfers flow through sewer systems into receiving waters (EPA 1995).

To better illustrate the amount of toxic chemicals that actually make it into the nation's waters each year, we assumed that on average 25 percent of the toxic chemicals transferred to POTWs (a.k.a. sewers) by a reporting facility, ultimately pass through the sewage treatment plant untreated and in most cases are discharged to receiving waters.

Toxic chemical releases through POTWs were estimated statewide, but were not attributed to specific rivers at the state level due to the difficulty of verifying the receiving waters. Environmental Working Group will attempt to identify receiving waters more precisely future reports. All other analyses including facility discharges and top chemicals reflect direct discharges only, and not POTW release estimations.

Total discharges of persistent toxic metals, known or possible carcinogens, and chemicals known to cause reproductive effects, were calculated for specific rivers

based on information characterizing the toxic properties of these substances previously published by the EPA, the State of California, and the State of New Jersey, as well as other toxicological literature (Environmental Protection Agency, 1996; California Code of Regulations; New Jersey Department of Health; and Dixon, 1986). EPA's inclusion of known, probable, and possible carcinogens is based on determinations made by the Occupational Safety and Health Administration (OSHA), the National Toxicology Program (NTP), and the International Agency for Research on Cancer (IARC) (EPA 1996). Lists of chemicals included are found in the Appendix.

## Notes

[1]Estimate based on 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%, at most, of discharges reported in PCS. Estimates from the GAO indicate that PCS regulates only 23% of all toxic water pollution (GAO, 1994).

[2]The exact number of chemicals required varies with the year. In 1994, 343 chemicals were reported. EPA has recently expanded the inventory to include about 650. These data, to be reported for 1995, will be available in 1997.

[3]EPA uses this factor since it is unlikely to greatly overestimate or underestimate the exact treatment efficiency (EPA 1995). This number will vary for any specific chemical; however it estimates pass through for chemicals as a whole, and is not applied to specific chemicals in this report.

[4]This value refers to pesticide active ingredients. The total volume of pesticide products, including so-called inert ingredients is far higher.

# Appendix

## Carcinogens

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

## 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).*

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# Minnesota

## Toxic pollution of Minnesota waters (1990-1994)

**Table 1. Total reported toxic pollution of Minnesota waters (1990-1994).**

| | |
|---|---|
| Direct Water Discharges | 2,811,851 Pounds |
| Estimated Sewer Discharges‡ | 6,957,061 Pounds |
| **Total Discharges to Waters** | **9,768,912 Pounds** |

**Table 2. Minnesota waters receiving the greatest amounts of toxic pollution (1990-1994).**

| River or Water Body | Toxic chemical release to waterbody (pounds) |
|---|---|
| Mississippi River | 2,091,814 |
| Rainy River | 407,460 |
| Red River | 121,700 |
| Rock River | 40,267 |
| Blue Earth River | 38,062 |
| Red Lake River | 35,608 |
| West Fork - Lac Qui Parle River | 12,085 |
| St. Louis River | 949 |
| Minnehaha Creek | 280 |
| Fish Creek | 278 |

**Table 3. Polluters reporting the greatest amounts of toxic chemicals discharged to Minnesota waters (1990-1994).**

| Facility | City | Toxic chemical release to waters (pounds) |
|---|---|---|
| 3M | Cottage Grove | 1,237,012 |
| Koch Refining Co. | Rosemount | 516,220 |
| Boise Cascade Corp. | International Falls | 407,460 |
| Ashland Petroleum Co. | Saint Paul Park | 185,570 |
| Champion Intl. Corp. | Sartell | 96,620 |
| American Crystal Sugar Co. | Moorhead | 86,450 |
| Potlatch Corp. | Brainerd | 54,741 |
| Advanced Flex Inc.* | Columbia Heights | 53,946 |
| IBP Inc. | Luverne | 40,267 |
| Darling Intl. Inc.* | Blue Earth | 38,062 |

**Table 4. Toxic chemicals discharged in the greatest amounts to Minnesota waters (1990-1994).**

| Chemical | Toxic chemical release to waters (pounds) |
|---|---|
| Ammonia | 2,109,660 |
| Methanol | 321,061 |
| Chloroform | 97,290 |
| Ammonium sulfate (solution) | 53,946 |
| Acetone | 52,910 |
| Ethylene glycol | 44,147 |
| Zinc compounds | 20,371 |
| Methyl methacrylate | 19,500 |
| Chlorine | 16,530 |
| Barium compounds | 5,830 |

**Table 5. Polluters reporting the greatest amounts of toxic chemicals discharged to Minnesota sewage treatment facilities (1990-1994).**

| Facility | City | Toxic chemical release to sewers (pounds) |
|---|---|---|
| Potlatch Corp. | Cloquet | 15,510,961 |
| Twin City Tanning | South Saint Paul | 1,562,298 |
| 3M | Hutchinson | 1,353,120 |
| First District Assoc. | Litchfield | 1,166,461 |
| Federal-Hoffman Inc. | Anoka | 1,056,401 |
| M. G. Waldbaum Co. | Gaylord | 843,579 |
| Hutchinson Techs. Inc. | Hutchinson | 712,780 |
| Hormel Foods Corp. | Austin | 702,737 |
| Ford Motor Co. | Saint Paul | 400,005 |
| Elf Atochem N.a. Inc. | Blooming Prairie | 327,614 |

‡ Total discharges of toxic chemicals to sewer systems in Minnesota was 27,828,247 in 1990-94. EPA estimates that 25% of all toxic discharges to sewers pass through sewage treatment plants to receiving waters (EPA 1995).

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

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

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# Minnesota

## Toxic pollution of Minnesota waters (1990-1994). Carcinogens, persistent toxic metals, and reproductive toxins

**Table 6.** **Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged into Minnesota waters (1990-1994).**

| | |
|---|---|
| Carcinogens | 115,795 Pounds |
| Persistent Toxic Metals | 43,452 Pounds |
| Reproductive Toxins | 2,854 Pounds |
| **Total (see note)** | **155,166 Pounds** |

Note: The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 6 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 for the total in Table 6.

**Table 7.** **Minnesota waters receiving the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** (1990-1994).**

**Waters receiving the greatest amounts of carcinogenic chemicals** in Minnesota (1990-1994).**

| River or Water Body | Carcinogens** released to waters (lbs.) |
|---|---|
| Rainy River | 97,100 |
| Mississippi River | 16,838 |
| St. Louis River | 599 |

**Waters receiving the greatest amounts of persistent toxic metals in Minnesota (1990-1994).**

| River or Water Body | Persistent toxic metals released to waters (lbs.) |
|---|---|
| Mississippi River | 40,893 |
| St. Louis River | 939 |
| Fish Creek | 168 |

**Waters receiving the greatest amounts of reproductive toxins** in Minnesota (1990-1994).**

| River or Water Body | Reproductive toxins** released to waters (lbs.) |
|---|---|
| Mississippi River | 2,765 |

**Table 8.** **Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Minnesota waters (1990-1994).**

**Top dischargers of carcinogenic chemicals** to Minnesota waters (1990-1994).**

| Facility | City | Carcinogens** released to waters (lbs.) |
|---|---|---|
| Boise Cascade Corp. | International Falls | 97,100 |
| 3M | Cottage Grove | 8,859 |
| Ashland Petroleum Co. | Saint Paul Park | 6,033 |
| Koch Refining Co. | Rosemount | 1,877 |
| Invest Cast Inc.* | Columbia Heights | 1,111 |

**Top dischargers of persistent toxic metals to Minnesota waters (1990-1994).**

| Facility | City | Persistent toxic metals released to waters (lbs.) |
|---|---|---|
| 3M | Cottage Grove | 20,620 |
| Koch Refining Co. | Rosemount | 17,150 |
| Ashland Petroleum Co. | Saint Paul Park | 2,683 |
| Invest Cast Inc.* | Columbia Heights | 1,111 |
| ME Intl. | Duluth | 939 |

**Top dischargers of reproductive toxins** to Minnesota waters (1990-1994).**

| Facility | City | Reproductive toxins** released to waters (lbs.) |
|---|---|---|
| Ashland Petroleum Co. | Saint Paul Park | 1,816 |
| 3M | Cottage Grove | 920 |

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

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# The Mississippi River in Minnesota

## Total toxic pollution reported (1990-1994): 2,091,814 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Mississippi River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| 3M | Cottage Grove | 1,237,012 |
| Koch Refining Co. | Rosemount | 516,220 |
| Ashland Petroleum Co. | Saint Paul Park | 185,570 |
| Champion Intl. Corp. | Sartell | 96,620 |
| Potlatch Corp. | Brainerd | 54,741 |
| Metalcote Grease & Oil Co.* | Saint Paul | 622 |
| Hennepin Paper Co.* | Little Falls | 304 |
| Continental Nitrogen* | Rosemount | 250 |
| Badger Foundry Co.* | Winona | 250 |
| FMC Corp. Armament Sys. | Fridley | |

**Table 2. Toxic chemicals discharged in the greatest amounts to the Mississippi River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Ammonia | 1,866,008 |
| Acetone | 52,900 |
| Ethylene glycol | 44,124 |
| Zinc compounds | 20,097 |
| Methanol | 20,061 |
| Methyl methacrylate | 19,500 |
| Barium compounds | 5,830 |
| Ethylene | 4,895 |
| Propylene | 4,895 |
| 1,3-Butadiene | 4,671 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Mississippi River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 16,838 Pounds |
| Persistent Toxic Metals | 40,893 Pounds |
| Reproductive Toxins | 2,765 Pounds |
| **Total‡** | **55,420 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Mississippi River in Minnesota (1990-1994).**

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

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| 3M | Cottage Grove | 8,859 |
| Ashland Petroleum Co. | Saint Paul Park | 6,033 |
| Koch Refining Co. | Rosemount | 1,877 |

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

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| 3M | Cottage Grove | 20,620 |
| Koch Refining Co. | Rosemount | 17,150 |
| Ashland Petroleum Co. | Saint Paul Park | 2,683 |
| Badger Foundry Co.* | Winona | 250 |
| FMC Corp. Armament Sys. | Fridley | 129 |

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

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| Ashland Petroleum Co. | Saint Paul Park | 1,816 |
| 3M | Cottage Grove | 920 |

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# The Rainy River in Minnesota

## Total toxic pollution reported (1990-1994): 407,460 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Rainy River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| Boise Cascade Corp. | International Falls | 407,460 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the Rainy River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Methanol | 301,000 |
| Chloroform | 97,100 |
| Ammonia | 7,760 |
| Catechol | 1,600 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Rainy River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 97,100 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **97,100 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Rainy River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to the Rainy River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| Boise Cascade Corp. | International Falls | 97,100 |

**Top dischargers of persistent toxic metals to the Rainy River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to the Rainy River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# The Red River in Minnesota

## Total toxic pollution reported (1990-1994): 121,700 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Red River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| American Crystal Sugar Co. | Moorhead | 86,450 |
| American Crystal Sugar Co. | East Grand Forks | 35,250 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the Red River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Ammonia | 121,700 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Red River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Red River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to the Red River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to the Red River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to the Red River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# The Rock River in Minnesota

## Total toxic pollution reported (1990-1994): 40,267 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Rock River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| IBP Inc. | Luverne | 40,267 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the Rock River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Ammonia | 40,267 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Rock River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Rock River in Minnesota (1990-1994).**

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

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

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

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

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

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# The Blue Earth River in Minnesota

## Total toxic pollution reported (1990-1994): 38,062 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Blue Earth River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| Darling Intl. Inc.* | Blue Earth | 38,062 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the Blue Earth River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Ammonia | 38,062 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Blue Earth River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the Blue Earth River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to the Blue Earth River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to the Blue Earth River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to the Blue Earth River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# Red Lake River in Minnesota

## Total toxic pollution reported (1990-1994): 35,608 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to Red Lake River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| American Crystal Sugar Co. | Crookston | 35,608 |

**Table 2. Toxic chemicals discharged in the greatest amounts to Red Lake River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Ammonia | 35,608 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Red Lake River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Red Lake River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to Red Lake River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to Red Lake River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to Red Lake River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# The West Fork - Lac Qui Parle River in Minnesota

## Total toxic pollution reported (1990-1994): 12,085 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| Ag Processing Inc. | Dawson | 12,085 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Chlorine | 12,085 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to the West Fork - Lac Qui Parle River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# The St. Louis River in Minnesota

## Total toxic pollution reported (1990-1994): 949 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to the St. Louis River in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| ME Intl. | Duluth | 949 |

**Table 2. Toxic chemicals discharged in the greatest amounts to the St. Louis River in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Chromium | 591 |
| Manganese | 340 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the St. Louis River in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 599 Pounds |
| Persistent Toxic Metals | 939 Pounds |
| Reproductive Toxins | 9 Pounds |
| **Total‡** | **940 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to the St. Louis River in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to the St. Louis River in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| ME Intl. | Duluth | 599 |

**Top dischargers of persistent toxic metals to the St. Louis River in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| ME Intl. | Duluth | 939 |

**Top dischargers of reproductive toxins** to the St. Louis River in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# Minnehaha Creek in Minnesota

## Total toxic pollution reported (1990-1994): 280 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to Minnehaha Creek in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| Acsist Assoc. Inc.* | Saint Louis Park | 280 |

**Table 2. Toxic chemicals discharged in the greatest amounts to Minnehaha Creek in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Chlorine | 280 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Minnehaha Creek in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 0 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **0 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Minnehaha Creek in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to Minnehaha Creek in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to Minnehaha Creek in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of reproductive toxins** to Minnehaha Creek in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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# Fish Creek in Minnesota

## Total toxic pollution reported (1990-1994): 278 Pounds

**Table 1. Polluters discharging the greatest amounts of toxic chemicals to Fish Creek in Minnesota (1990-1994).**

| Facility | City | Toxic chemical release to water (pounds) |
|---|---|---|
| North Star Steel Co. | Saint Paul | 278 |

**Table 2. Toxic chemicals discharged in the greatest amounts to Fish Creek in Minnesota (1990-1994).**

| Chemical | Toxic chemical release to waterbody (pounds) |
|---|---|
| Zinc compounds | 168 |
| Molybdenum trioxide | 110 |

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 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 3.

* This polluter did not report any discharges to water in 1994. See Table 9 for year to year pollution figures.

** 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.

**Table 3. Total carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Fish Creek in Minnesota (1990-1994).**

| | |
|---|---|
| Carcinogens | 0 Pounds |
| Persistent Toxic Metals | 168 Pounds |
| Reproductive Toxins | 0 Pounds |
| **Total‡** | **168 Pounds** |

**Table 4. Polluters reporting the greatest amounts of carcinogens**, persistent toxic metals, and reproductive toxins** discharged to Fish Creek in Minnesota (1990-1994).**

**Top dischargers of carcinogens** to Fish Creek in Minnesota (1990-1994).**

| Facility | City | Carcinogens** released to water (lbs) |
|---|---|---|
| | | |

**Top dischargers of persistent toxic metals to Fish Creek in Minnesota (1990-1994).**

| Facility | City | Persistent toxic metals released to water (lbs) |
|---|---|---|
| North Star Steel Co. | Saint Paul | 168 |

**Top dischargers of reproductive toxins** to Fish Creek in Minnesota (1990-1994).**

| Facility | City | Reproductive toxins** released to water (lbs) |
|---|---|---|
| | | |

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