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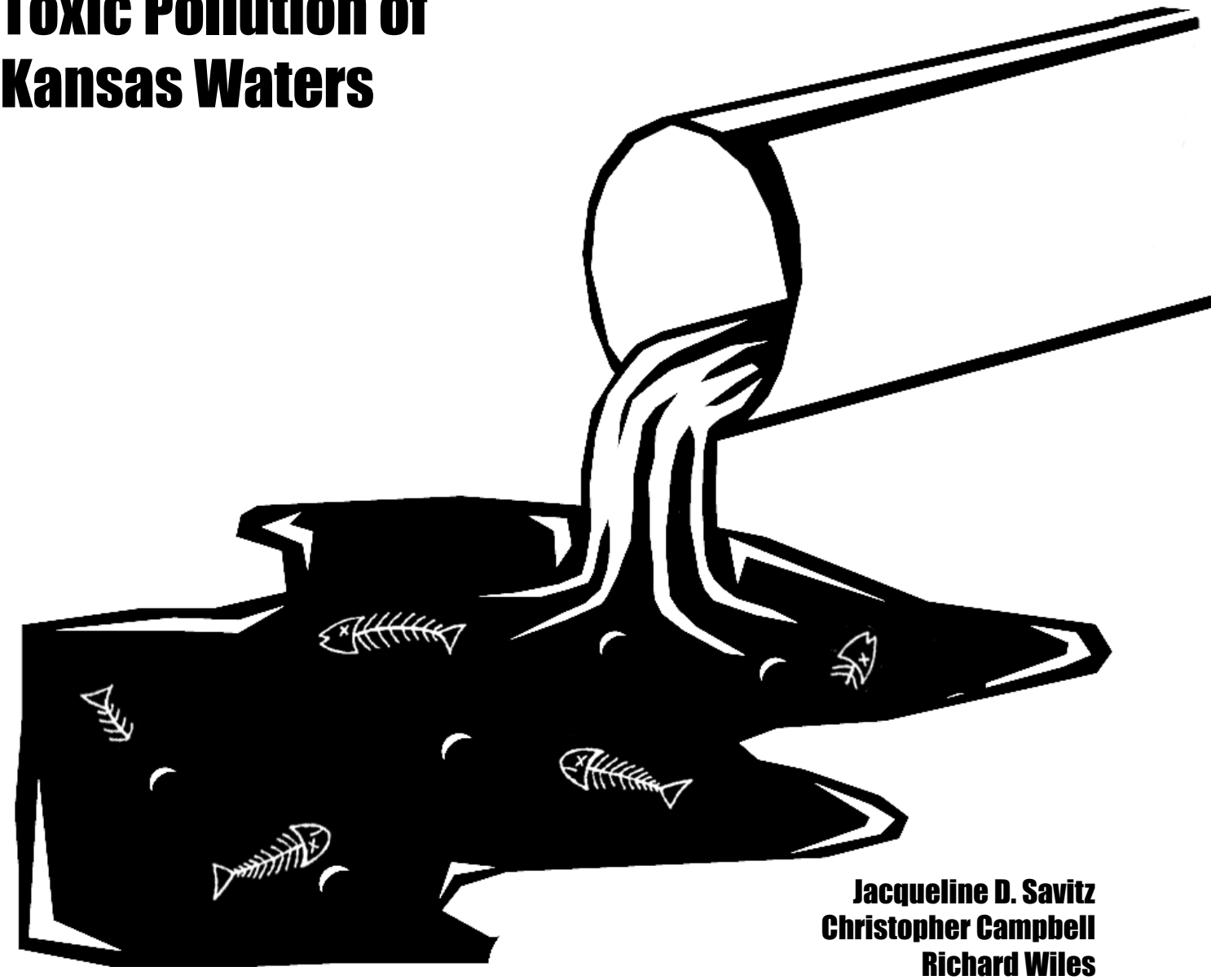
ENVIRONMENTAL WORKING GROUP™

Dishonorable Discharge

Toxic Pollution of Kansas Waters



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Dishonorable Discharge

Toxic Pollution of Kansas Waters

Executive Summary

Most Kansas 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 Kansas streams and rivers.

The citizens of Kansas 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 Kansas and nationwide.

Factories and other industrial facilities dumped more than 3.8 million pounds of toxic substances directly into Kansas waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Kansas ranked 27th 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 thirteen (12.8) million pounds of toxic materials were flushed to sewage treatment plants in Kansas from 1990 through 1994, 24th 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 Kansas raises the total amount of toxics dumped to the state's waters to an estimated 7.1 million pounds (Table 1).

The Kansas River received the greatest amount of toxic water pollution in Kansas from 1990-1994, a total of 3,420,000 pounds, followed by the Walnut River, Claymore Creek, and the Arkansas River (Table 2). The ten most polluted waterways in Kansas received 3,810,000 pounds of toxic pollution between 1990 and 1994, 99.1% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Kansas waters over this period were Farmland Industries, Inc. in Lawrence, which dumped 3,400,000 pounds of

toxic chemicals, followed by Total Petroleum Inc., and Texaco Refining & Marketing in the towns of Arkansas City, and El Dorado, respectively (Table 3). The toxic chemicals dumped in the greatest amounts were ammonium nitrate solution, a total of 3,390,000 pounds, followed by ammonia, and diethanolamine (Table 4).

Boeing Wichita dumped the most carcinogens into Kansas waters, a total of 2,300 pounds, followed by Texaco Refining & Marketing and Midwest Grain Products Inc. (Table 8). The Walnut River received the greatest amount of cancer-causing toxic chemicals in Kansas, a total of 2,100 pounds, followed by the Lower Arkansas River and the Arkansas River itself (Table 7).

Texaco Refining & Marketing dumped the greatest amount of persistent toxic metals in Kansas waters, a total of 12,000 pounds, followed by Goodyear Tire & Rubber Company and Boeing Wichita (Table 8). The Walnut River received the greatest amount of persistent toxic metals, a total of 12,000 pounds, followed by Soldier Creek and the Arkansas River (Table 7).

Boeing Wichita also dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Kansas waters, a total of 15,000 pounds, followed by Texaco Refining & Marketing and Gard Corporation* (Table 8). The Arkansas River received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 14,000 pounds, followed by the Walnut River and the Lower Arkansas River (Table 7).

These discharges to Kansas waters include only those wastes released by companies physically located in Kansas. 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.

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

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 Kansas, over 11,000 miles of rivers and streams and 95,000 acres of lakes surveyed had elevated levels of toxic chemicals (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 transferred 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 Kansas 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 Kansas. 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 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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ENVIRONMENTAL WORKING GROUP™

Dishonorable Discharge

Kansas

Toxic pollution of Kansas waters (1990-1994)

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

Direct Water Discharges	3,841,175 Pounds
Estimated Sewer Discharges‡	3,212,125 Pounds
Total Discharges to Waters	**7,053,300 Pounds**

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

River or Water Body	Toxic chemical release to waterbody (pounds)
Kansas River	3,420,965
Walnut River	181,043
Claymore Creek	70,050
Arkansas River	45,796
Spring River Via Oxbow Lake	31,300
Dry Creek	20,000
Missouri River	11,560
Marion Reservior Via French Creek	9,600
Soldier Creek	8,411
Oxbow Lake	6,820

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

Facility	City	Toxic chemical release to waters (pounds)
Farmland Ind. Inc.	Lawrence	3,403,150
Total Petroleum Inc.	Arkansas City	106,253
Texaco Refining & Marketing	El Dorado	73,168
Farmland Ind. Inc.	Coffeyville	70,050
Allco Chemical Corp.	Galena	37,855
Great Bend Packing Co. Inc.	Great Bend	26,747
Boeing Wichita	Wichita	21,160
Tony's Pizza Service*	Salina	20,000
National Co-op. Refinery	Mc Pherson	17,061
Flexel Inc.	Tecumseh	16,760

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

Chemical	Toxic chemical release to waters (pounds)
Ammonium nitrate (solution)	3,390,700
Ammonia	290,571
Diethanolamine	25,925
Ethylene glycol	20,430
Phosphoric acid	18,645
Acetone	14,830
Aluminum (fume or dust)	12,740
Zinc compounds	12,276
Pyridine	9,437
Manganese compounds	5,233

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

Facility	City	Toxic chemical release to sewers (pounds)
PQ Corp.	Kansas City	6,477,797
Procter & Gamble Mfg. Co.	Kansas City	2,366,248
Coastal Refining & Marketing	Wichita	907,191
Exide Corp.	Salina	868,297
Harcros Chemicals Inc.	Kansas City	499,061
Coffeyville Re-con Inc.	Coffeyville	408,890
National By-products Inc.	Wichita	292,760
Certainteed Corp.	Kansas City	231,729
Owens-Corning Fiberglas	Kansas City	119,232
Tony's Pizza Service	Salina	89,152

‡ Total discharges of toxic chemicals to sewer systems in Kansas was 12,848,502 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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Kansas

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

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

Carcinogens	6,769 Pounds
Persistent Toxic Metals	29,594 Pounds
Reproductive Toxins	21,512 Pounds
Total (see note)	**51,862 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. Kansas waters receiving the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** (1990-1994).**

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

River or Water Body	Carcinogens** released to waters (lbs.)
Walnut River	2,090
Lower Arkansas River Via Unnamed Trib.	1,270
Arkansas River	1,223
White Clay Creek	750
Five Mile Creek	454

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

River or Water Body	Persistent toxic metals released to waters (lbs.)
Walnut River	11,810
Soldier Creek	8,400
Arkansas River	3,849
Kansas River	2,337
Lower Arkansas River Via Unnamed Trib.	1,255

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

River or Water Body	Reproductive toxins** released to waters (lbs.)
Arkansas River	13,919
Walnut River	5,374
Lower Arkansas River Via Unnamed Trib.	775
Turkey Creek	540
Kansas River	315

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

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

Facility	City	Carcinogens** released to waters (lbs.)
Boeing Wichita	Wichita	2,330
Texaco Refining & Marketing	El Dorado	1,840
Midwest Grain Products Inc.	Atchison	1,000
GNB Tech. Inc.	Leavenworth	454
Total Petroleum Inc.	Arkansas City	244

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

Facility	City	Persistent toxic metals released to waters (lbs.)
Texaco Refining & Marketing	El Dorado	11,517
Goodyear Tire & Rubber Co.	Topeka	8,400
Boeing Wichita	Wichita	5,025
Farmland Ind. Inc.	Lawrence	2,130
Gard Corp.*	Kansas City	500

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

Facility	City	Reproductive toxins** released to waters (lbs.)
Boeing Wichita	Wichita	14,570
Texaco Refining & Marketing	El Dorado	5,322
Gard Corp.*	Kansas City	540
PBI/Gordon Corp.*	Kansas City	250
Allco Chemical Corp.	Galena	250

* 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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Dishonorable Discharge

The Kansas River in Kansas

Total toxic pollution reported (1990-1994): 3,420,965 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Farmland Ind. Inc.	Lawrence	3,403,150
Flexel Inc.	Tecumseh	16,760
Harcros Chemicals Inc.	Kansas City	370
PBI/Gordon Corp.*	Kansas City	250
U.S. Army Fort Riley	Fort Riley	233
FMC Corp.*	Lawrence	202

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	3,356,000
Ammonia	35,065
Diethanolamine	25,925
Copper compounds	1,205
Aluminum oxide (fibrous forms)	810
Zinc compounds	750
Xylene (mixed isomers)	260
Ethylene glycol	252
Arsenic compounds	202
Nickel compounds	180

‡ 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 Kansas River in Kansas (1990-1994).**

Carcinogens	438 Pounds
Persistent Toxic Metals	2,337 Pounds
Reproductive Toxins	315 Pounds
Total‡	**2,683 Pounds**

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

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

Facility	City	Carcinogens** released to water (lbs)
FMC Corp.*	Lawrence	202
Farmland Ind. Inc.	Lawrence	180

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

Facility	City	Persistent toxic metals released to water (lbs)
Farmland Ind. Inc.	Lawrence	2,130
FMC Corp.*	Lawrence	202

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

Facility	City	Reproductive toxins** released to water (lbs)
PBI/Gordon Corp.*	Kansas City	250

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

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Dishonorable Discharge

The Walnut River in Kansas

Total toxic pollution reported (1990-1994): 181,043 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Walnut River in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Total Petroleum Inc.	Arkansas City	106,253
Texaco Refining & Marketing	El Dorado	73,168
Coastal Refining & Marketing*	El Dorado	1,622

Table 2. Toxic chemicals discharged in the greatest amounts to the Walnut River in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	136,061
Acetone	14,800
Pyridine	9,437
Manganese compounds	5,218
Barium compounds	3,130
Toluene	2,308
Xylene (mixed isomers)	2,117
Chromium compounds	1,255
Cyclohexane	976
Benzene	917

‡ 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 Walnut River in Kansas (1990-1994).**

Carcinogens	2,090 Pounds
Persistent Toxic Metals	11,810 Pounds
Reproductive Toxins	5,374 Pounds
Total‡	**17,152 Pounds**

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

Top dischargers of carcinogens to the Walnut River in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Texaco Refining & Marketing	El Dorado	1,840
Total Petroleum Inc.	Arkansas City	244

Top dischargers of persistent toxic metals to the Walnut River in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Texaco Refining & Marketing	El Dorado	11,517
Total Petroleum Inc.	Arkansas City	287

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

Facility	City	Reproductive toxins** released to water (lbs)
Texaco Refining & Marketing	El Dorado	5,322

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

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Dishonorable Discharge

Claymore Creek in Kansas

Total toxic pollution reported (1990-1994): 70,050 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Claymore Creek in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Farmland Ind. Inc.	Coffeyville	70,050

Table 2. Toxic chemicals discharged in the greatest amounts to Claymore Creek in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	66,876
Methanol	2,442
Phenol	510
Lead compounds	121

‡ 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 Claymore Creek in Kansas (1990-1994).**

Carcinogens	135 Pounds
Persistent Toxic Metals	121 Pounds
Reproductive Toxins	93 Pounds
Total‡	**214 Pounds**

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

Top dischargers of carcinogens to Claymore Creek in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Farmland Ind. Inc.	Coffeyville	135

Top dischargers of persistent toxic metals to Claymore Creek in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Farmland Ind. Inc.	Coffeyville	121

Top dischargers of reproductive toxins to Claymore Creek in Kansas (1990-1994).**

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

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

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Dishonorable Discharge

The Arkansas River in Kansas

Total toxic pollution reported (1990-1994): 45,796 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Arkansas River in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Great Bend Packing Co. Inc.	Great Bend	26,747
Boeing Wichita	Wichita	17,065
Republic Paperboard Co.	Hutchinson	1,255
High Plains Corp.	Colwich	520
Cessna Aircraft	Wichita	110

Table 2. Toxic chemicals discharged in the greatest amounts to the Arkansas River in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	27,257
Aluminum (fume or dust)	12,740
Chromium compounds	1,255
Chlorine	1,250
Zinc compounds	1,000
Lead	505
Copper compounds	505
Trichloroethylene	368
Toluene	255
Barium compounds	250

‡ 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 Arkansas River in Kansas (1990-1994).**

Carcinogens	1,223 Pounds
Persistent Toxic Metals	3,849 Pounds
Reproductive Toxins	13,919 Pounds
Total‡	**17,242 Pounds**

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

Top dischargers of carcinogens to the Arkansas River in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Boeing Wichita	Wichita	1,030
Cessna Aircraft	Wichita	110

Top dischargers of persistent toxic metals to the Arkansas River in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Boeing Wichita	Wichita	3,760

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

Facility	City	Reproductive toxins** released to water (lbs)
Boeing Wichita	Wichita	13,770
Cessna Aircraft	Wichita	110

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

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Dishonorable Discharge

Spring River Via Oxbow Lake in Kansas

Total toxic pollution reported (1990-1994): 31,300 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Spring River Via Oxbow Lake in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Allco Chemical Corp.	Galena	31,300

Table 2. Toxic chemicals discharged in the greatest amounts to Spring River Via Oxbow Lake in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	28,400
Nitric acid	2,250
Ammonia	400
o-Xylene	250

‡ 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 Spring River Via Oxbow Lake in Kansas (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	250 Pounds
Total‡	**250 Pounds**

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

Top dischargers of carcinogens to Spring River Via Oxbow Lake in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Spring River Via Oxbow Lake in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Spring River Via Oxbow Lake in Kansas (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)
Allco Chemical Corp.	Galena	250

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

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Dishonorable Discharge

Dry Creek in Kansas

Total toxic pollution reported (1990-1994): 20,000 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Dry Creek in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Tony's Pizza Service*	Salina	20,000

Table 2. Toxic chemicals discharged in the greatest amounts to Dry Creek in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ethylene glycol	20,000

‡ 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 Dry Creek in Kansas (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 Dry Creek in Kansas (1990-1994).**

Top dischargers of carcinogens to Dry Creek in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Dry Creek in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Dry Creek in Kansas (1990-1994).**

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

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

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Dishonorable Discharge

The Missouri River in Kansas

Total toxic pollution reported (1990-1994): 11,560 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Owens-Corning Fiberglas	Kansas City	11,000
General Motors Corp.	Kansas City	500

Table 2. Toxic chemicals discharged in the greatest amounts to the Missouri River in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Phosphoric acid	11,000
Zinc compounds	500

‡ 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 Missouri River in Kansas (1990-1994).**

Carcinogens	30 Pounds
Persistent Toxic Metals	500 Pounds
Reproductive Toxins	15 Pounds
Total‡	**530 Pounds**

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)
General Motors Corp.	Kansas City	500

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

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

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

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Dishonorable Discharge

Marion Reservior Via French Creek in Kansas

Total toxic pollution reported (1990-1994): 9,600 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Marion Reservior Via French Creek in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Associated Milk Producers Inc.	Hillsboro	9,600

Table 2. Toxic chemicals discharged in the greatest amounts to Marion Reservior Via French Creek in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Phosphoric acid	7,600
Nitric acid	2,000

‡ 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 Marion Reservior Via French Creek in Kansas (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 Marion Reservior Via French Creek in Kansas (1990-1994).**

Top dischargers of carcinogens to Marion Reservior Via French Creek in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Marion Reservior Via French Creek in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Marion Reservior Via French Creek in Kansas (1990-1994).**

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

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

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Dishonorable Discharge

Soldier Creek in Kansas

Total toxic pollution reported (1990-1994): 8,411 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Soldier Creek in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Goodyear Tire & Rubber Co.	Topeka	8,411

Table 2. Toxic chemicals discharged in the greatest amounts to Soldier Creek in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Zinc compounds	8,400

‡ 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 Soldier Creek in Kansas (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	8,400 Pounds
Reproductive Toxins	11 Pounds
Total‡	**8,411 Pounds**

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

Top dischargers of carcinogens to Soldier Creek in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Soldier Creek in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Goodyear Tire & Rubber Co.	Topeka	8,400

Top dischargers of reproductive toxins to Soldier Creek in Kansas (1990-1994).**

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

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

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Dishonorable Discharge

Oxbow Lake in Kansas

Total toxic pollution reported (1990-1994): 6,820 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Oxbow Lake in Kansas (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Allco Chemical Corp.	Galena	6,555
Allied-Signal Inc.*	Pittsburg	265

Table 2. Toxic chemicals discharged in the greatest amounts to Oxbow Lake in Kansas (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	6,300
Ammonia	250
Methanol	160

‡ 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 Oxbow Lake in Kansas (1990-1994).**

Carcinogens	5 Pounds
Persistent Toxic Metals	15 Pounds
Reproductive Toxins	40 Pounds
Total‡	**60 Pounds**

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

Top dischargers of carcinogens to Oxbow Lake in Kansas (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Oxbow Lake in Kansas (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Oxbow Lake in Kansas (1990-1994).**

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

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

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