

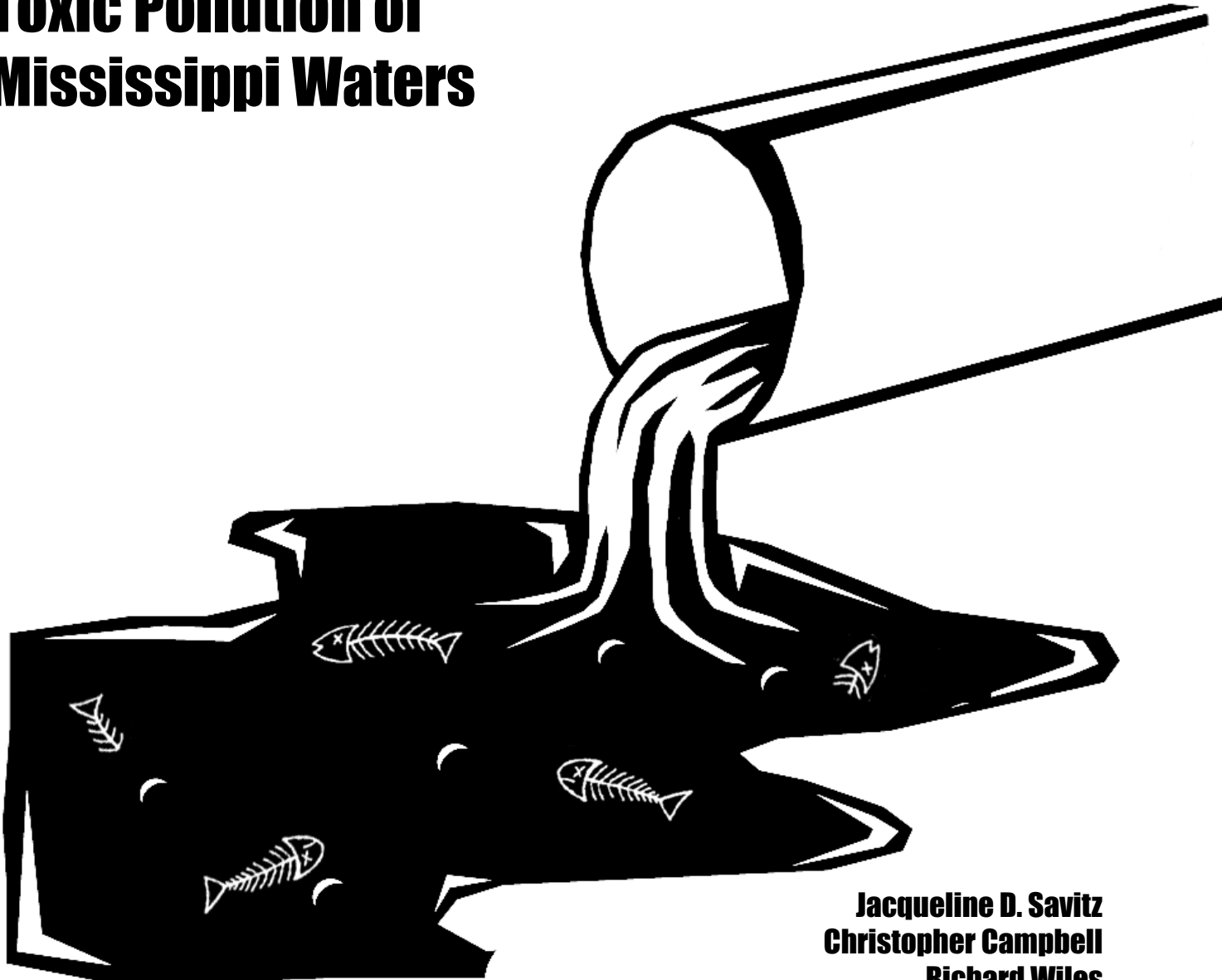


The State PIRGs



# **Dishonorable Discharge**

## **Toxic Pollution of Mississippi Waters**



**Jacqueline D. Savitz  
Christopher Campbell  
Richard Wiles  
Carolyn Hartmann**

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# Toxic Pollution of Mississippi Waters

### Executive Summary

Most Mississippi 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 Mississippi streams and rivers.

The citizens of Mississippi 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 Mississippi and nationwide.

Factories and other industrial facilities dumped more than 8.8 million pounds of toxic substances directly into Mississippi's waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Mississippi ranked 16th 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, over five (5.1) million pounds of toxic materials were flushed to sewage treatment plants in Mississippi from 1990 through 1994, 31st 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 Mississippi raises the total amount of toxics dumped to the state's waters to an estimated 10.1 million pounds (Table 1).

Martins Creek received the greatest amount of toxic water pollution in Mississippi from 1990-1994, a total of 3,330,000 pounds, followed by the Escatawpa River, Mississippi Sound, and the Mississippi River (Table 2). The ten most polluted waterways in Mississippi received 8,228,000 pounds of toxic pollution between 1990 and 1994, 93.3% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Mississippi's waters over this period were Mississippi Chemical Corporation in Yazoo City, which dumped

3,340,000 pounds of toxic chemicals, followed by International Paper, and Chevron in the towns of Moss Point, and Pascagoula, respectively (Table 3). The toxic chemicals dumped in the greatest amounts were ammonium nitrate solution, a total of 3,760,000 pounds, followed by ammonia, and chlorine (Table 4).

International Paper dumped the most carcinogens into Mississippi's waters, a total of 72,500 pounds, followed by International Paper and Chevron (Table 8). The Mississippi River received the greatest amount of cancer-causing toxic chemicals in Mississippi, a total of 72,000 pounds, followed by the Escatawpa River and the Mississippi Sound (Table 7).

Kerr-McGee Chemical Corporation dumped the greatest amount of persistent toxic metals in Mississippi's waters, a total of 111,000 pounds, followed by Mississippi Chemical Corporation and Georgia-Pacific Corporation (Table 8). The Dose Maie Creek received the greatest amount of persistent toxic metals, a total of 61,000 pounds, followed by the Tombigbee River and Martins Creek (Table 7).

Hercules Inc. dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Mississippi's waters, a total of 15,000 pounds, followed by Chemfax Inc. and Chevron (Table 8). The Bouie River received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 13,000 pounds, followed by the Bayou Benard and the Mississippi Sound (Table 7).

These discharges to Mississippi's waters include only those wastes released by companies physically located in Mississippi. 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 Mississippi, over 218,000 acres of Lakes and reservoirs 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<sup>1</sup> 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<sup>2</sup> 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 Mississippi's waters, we used EPA's assumption that 25 percent of all toxic chemicals transferred to POTWs pass-through untreated<sup>3</sup>. Table 1 presents the EWG estimate of toxic chemicals assumed to be discharged by the POTWs in Mississippi. 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<sup>4</sup> 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

<sup>1</sup>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).

<sup>2</sup>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.

<sup>3</sup>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.

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

## Persistent Toxic Metals

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

## Chemicals that Affect Reproduction

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

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

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# Mississippi

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

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

Direct Water Discharges	8,820,411 Pounds
Estimated Sewer Discharges‡	1,271,603 Pounds
<b>Total Discharges to Waters</b>	<b>10,092,014 Pounds</b>

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

River or Water Body	Toxic chemical release to waterbody (pounds)
Martins Creek	3,339,065
Escatawpa River	1,358,148
Mississippi Sound	1,043,932
Mississippi River	991,983
Tombigbee River	407,140
Sipsey Creek	288,423
Pearl River	266,351
Okatoma Creek	240,221
Yazoo River	176,198
Big Sunflower River	116,690

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

Facility	City	Toxic chemical release to waters (pounds)
Mississippi Chemical Corp.	Yazoo City	3,339,065
International Paper	Moss Point	1,353,883
Chevron	Pascagoula	1,035,062
Vicksburg Chemical Co.	Vicksburg	878,557
Kerr-McGee Chemical Corp.	Hamilton	484,459
Green Acre Farms Inc.*	Sebastopol	288,423
Georgia-Pacific Corp.	Monticello	264,705
Sanderson Farms Inc.*	Collins	240,221
International Paper	Redwood	120,288
Delta Pride Catfish Inc.	Indianola	116,500

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

Chemical	Toxic chemical release to waters (pounds)
Ammonium nitrate (solution)	3,764,110
Ammonia	2,810,591
Chlorine	587,925
Methanol	538,700
Nitric acid	427,021
Acetone	129,061
Ethylene glycol	112,440
Manganese compounds	107,020
Chloroform	82,269
Zinc compounds	54,670

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

Facility	City	Toxic chemical release to sewers (pounds)
Ethyl Corp.	Natchez	3,000,491
B. C. Rogers Processors Inc.	Morton	652,500
First Chemical Corp.	Pascagoula	360,179
Challenger Electrical	Jackson	253,290
Motts/Blue Coach Foods	Water Valley	131,499
Sanderson Farms Inc.	Laurel	107,700
Borden Inc.	Jackson	94,401
Pennaco Hosiery	Grenada	74,858
Hydro Parts Inc.	Puckett	60,278
B. C. Rogers Processors Inc.	Forest	59,778

‡ Total discharges of toxic chemicals to sewer systems in Mississippi was 5,086,412 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.

# Mississippi

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

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

Carcinogens	104,370 Pounds
Persistent Toxic Metals	220,785 Pounds
Reproductive Toxins	27,047 Pounds
<b>Total (see note)</b>	<b>339,335 Pounds</b>

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

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

River or Water Body	Carcinogens** released to waters (lbs.)
Mississippi River	72,501
Escatawpa River	10,398
Mississippi Sound	7,406
Leaf River	2,500
Black River	2,493

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

River or Water Body	Persistent toxic metals released to waters (lbs.)
Dose Maie Creek	61,329
Tombigbee River	52,411
Martins Creek	32,143
Pearl River	24,326
Mississippi Sound	21,292

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

River or Water Body	Reproductive toxins** released to waters (lbs.)
Bouie River	12,817
Bayou Benard	2,750
Mississippi Sound	2,530
Brickyard Bayou	2,276
Unnamed Tributary Of Big Lake	1,000

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

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

Facility	City	Carcinogens** released to waters (lbs.)
International Paper	Natchez	72,497
International Paper	Moss Point	10,398
Chevron	Pascagoula	7,406
Leaf River Forest Prods.	New Augusta	2,500
Burrows Paper Corp.*	Pickens	2,493

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

Facility	City	Persistent toxic metals released to waters (lbs.)
Kerr-McGee Chemical Corp.	Hamilton	110,559
Mississippi Chemical Corp.	Yazoo City	32,143
Georgia-Pacific Corp.	Monticello	22,700
Chevron	Pascagoula	19,542
International Paper	Moss Point	12,700

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

Facility	City	Reproductive toxins** released to waters (lbs.)
Hercules Inc.	Hattiesburg	14,923
Chemfax Inc.	Gulfport	2,750
Chevron	Pascagoula	2,530
Indal Aluminum Gulfport*	Gulfport	2,276
Arizona Chemical Co.	Gulfport	1,040

\* 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.

The Environmental Working Group is a non-profit environmental research organization based in Washington, D.C.  
Phone: (202) 667-6982 • Fax: (202) 232-2592 • Email: info@ewg.org • Web: http://www.ewg.org

# Martins Creek in Mississippi

Total toxic pollution reported (1990-1994): 3,339,065 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Mississippi Chemical Corp.	Yazoo City	3,339,065

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	3,023,163
Nitric acid	270,443
Chromium compounds	32,143
Ammonia	4,909
Mixtures and other trade names	3,143
Sulfuric acid	2,955
Chlorine	2,309

‡ 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 Martins Creek in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	32,143 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>32,143 Pounds</b>

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

**Top dischargers of carcinogens\*\* to Martins Creek in Mississippi (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)
Mississippi Chemical Corp.	Yazoo City	32,143

**Top dischargers of reproductive toxins\*\* to Martins Creek in Mississippi (1990-1994).**

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

# The Escatawpa River in Mississippi

Total toxic pollution reported (1990-1994): 1,358,148 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
International Paper	Moss Point	1,353,883
Automatic Processing Inc.	Moss Point	4,015
Morton Intl. Inc.*	Moss Point	250

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonium nitrate (solution)	728,500
Ammonia	299,929
Methanol	280,000
Zinc compounds	16,715
Acetone	16,136
Chloroform	9,769
Catechol	3,459
Methyl ethyl ketone	2,761
Acetaldehyde	629
Ethylene glycol	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 Escatawpa River in Mississippi (1990-1994).**

Carcinogens	10,398 Pounds
Persistent Toxic Metals	16,715 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>27,113 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)
International Paper	Moss Point	10,398

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

Facility	City	Persistent toxic metals released to water (lbs)
International Paper	Moss Point	12,700
Automatic Processing Inc.	Moss Point	4,015

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

Facility	City	Reproductive toxins** released to water (lbs)
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# The Mississippi Sound in Mississippi

Total toxic pollution reported (1990-1994): 1,043,932 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Chevron	Pascagoula	1,035,062
Ingalls Shipbuilding Inc.	Pascagoula	8,870

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	896,000
Ethylene glycol	109,750
Chlorine	7,120
Nickel compounds	6,180
Zinc compounds	6,080
Chromium compounds	4,740
Molybdenum trioxide	3,460
Copper compounds	2,480
Selenium compounds	1,540
Formaldehyde	720

‡ 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 Sound in Mississippi (1990-1994).**

Carcinogens	7,406 Pounds
Persistent Toxic Metals	21,292 Pounds
Reproductive Toxins	2,530 Pounds
<b>Total‡</b>	<b>24,542 Pounds</b>

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

**Top dischargers of carcinogens\*\* to the Mississippi Sound in Mississippi (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Chevron	Pascagoula	7,406

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

Facility	City	Persistent toxic metals released to water (lbs)
Chevron	Pascagoula	19,542
Ingalls Shipbuilding Inc.	Pascagoula	1,750

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

Facility	City	Reproductive toxins** released to water (lbs)
Chevron	Pascagoula	2,530



# The Mississippi River in Mississippi

Total toxic pollution reported (1990-1994): 991,983 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Vicksburg Chemical Co.	Vicksburg	878,557
International Paper	Natchez	113,169
Ingalls Shipbuilding Inc.	Pascagoula	250

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

Chemical	Toxic chemical release to waterbody (pounds)
Chlorine	534,629
Ammonia	180,083
Nitric acid	156,543
Chloroform	70,000
Acetone	24,500
Ammonium nitrate (solution)	12,447
Methyl ethyl ketone	4,830
Catechol	4,794
Phenol	1,400
Formaldehyde	1,100

‡ 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 Mississippi (1990-1994).**

Carcinogens	72,501 Pounds
Persistent Toxic Metals	257 Pounds
Reproductive Toxins	2 Pounds
<b>Total‡</b>	<b>72,754 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)
International Paper	Natchez	72,497

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

Facility	City	Persistent toxic metals released to water (lbs)
Ingalls Shipbuilding Inc.	Pascagoula	250

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

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

# The Tombigbee River in Mississippi

Total toxic pollution reported (1990-1994): 407,140 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Kerr-McGee Chemical Corp.	Hamilton	372,330
Columbus Pulp & Paper	Columbus	18,995
Kerr-McGee Chemical Corp.	Hamilton	6,173
EKA Nobel Inc.	Columbus	5,743
True Temper Sports	Amory	3,894

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	331,480
Manganese compounds	45,700
Methanol	5,400
Acetone	4,900
Catechol	4,870
Chromium compounds	4,700
Chlorine	2,662
Naphthalene	2,100
Hydrochloric acid	1,500
Nickel compounds	1,118

‡ 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 Tombigbee River in Mississippi (1990-1994).**

Carcinogens	1,823 Pounds
Persistent Toxic Metals	52,411 Pounds
Reproductive Toxins	5 Pounds
<b>Total‡</b>	<b>53,111 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)
True Temper Sports	Amory	1,118
Columbus Pulp & Paper	Columbus	700

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

Facility	City	Persistent toxic metals released to water (lbs)
Kerr-McGee Chemical Corp.	Hamilton	49,230
True Temper Sports	Amory	2,953
EKA Nobel Inc.	Columbus	223

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

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

# Sipsey Creek in Mississippi

Total toxic pollution reported (1990-1994): 288,423 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Green Acre Farms Inc.*	Sebastopol	288,423

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	288,423

‡ 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 Sipsey Creek in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>0 Pounds</b>

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

**Top dischargers of carcinogens\*\* to Sipsey Creek in Mississippi (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

**Top dischargers of reproductive toxins\*\* to Sipsey Creek in Mississippi (1990-1994).**

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

# The Pearl River in Mississippi

Total toxic pollution reported (1990-1994): 266,351 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Georgia-Pacific Corp.	Monticello	264,705
Aztec Ind. Inc.	Richland	1,626

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

Chemical	Toxic chemical release to waterbody (pounds)
Methanol	170,000
Acetone	53,000
Zinc compounds	24,326
Catechol	9,670
Methyl ethyl ketone	8,700
Xylene (mixed isomers)	500
Phenol	135

‡ 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 Pearl River in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	24,326 Pounds
Reproductive Toxins	500 Pounds
<b>Total‡</b>	<b>24,826 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)
Georgia-Pacific Corp.	Monticello	22,700
Aztec Ind. Inc.	Richland	1,626

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

Facility	City	Reproductive toxins** released to water (lbs)
Georgia-Pacific Corp.	Monticello	500

# Okatoma Creek in Mississippi

Total toxic pollution reported (1990-1994): 240,221 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Sanderson Farms Inc.*	Collins	240,221

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	240,221

‡ 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 Okatoma Creek in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>0 Pounds</b>

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

**Top dischargers of carcinogens\*\* to Okatoma Creek in Mississippi (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

**Top dischargers of reproductive toxins\*\* to Okatoma Creek in Mississippi (1990-1994).**

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

# The Yazoo River in Mississippi

Total toxic pollution reported (1990-1994): 176,198 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Ergon Refining Inc.	Vicksburg	97,750
Delta Pride Catfish Inc.*	Belzoni	54,200
International Paper	Redwood	24,248

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	144,750
Acetone	15,723
Diethanolamine	7,200
Catechol	4,725
Methyl ethyl ketone	3,800

‡ 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 Yazoo River in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>0 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

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

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

# The Big Sunflower River in Mississippi

## Total toxic pollution reported (1990-1994): 116,690 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Delta Pride Catfish Inc.	Indianola	116,500
Cooper Tire Co.	Clarksdale	190

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	116,500
Zinc compounds	190

‡ 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 Big Sunflower River in Mississippi (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	190 Pounds
Reproductive Toxins	0 Pounds
<b>Total‡</b>	<b>190 Pounds</b>

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)
Cooper Tire Co.	Clarksdale	190

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

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