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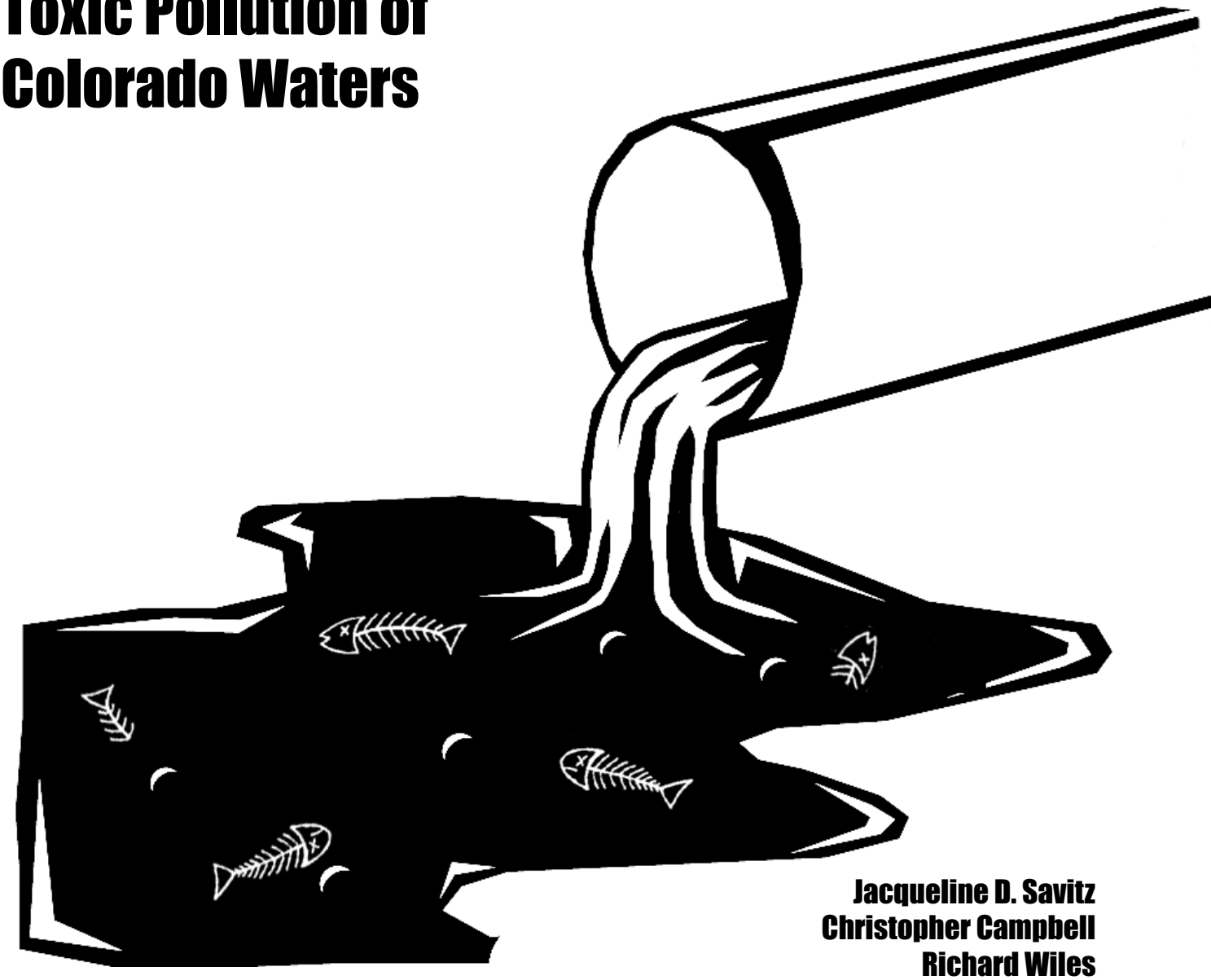
ENVIRONMENTAL WORKING GROUP™

Dishonorable Discharge

Toxic Pollution of Colorado Waters



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Toxic Pollution of Colorado Waters

Executive Summary

Most Colorado 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 Colorado streams and rivers.

The citizens of Colorado 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 Colorado and nationwide.

Factories and other industrial facilities dumped more than 815,000 pounds of toxic substances directly into Colorado's waters between 1990 and 1994, according to a new analysis of the federal Toxics Release Inventory (TRI) (Table 1). Colorado ranked 37th 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 three (2.8) million pounds of toxic materials were flushed to sewage treatment plants in Colorado from 1990 through 1994, 38th 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 Colorado raises the total amount of toxics dumped to the state's waters to an estimated 1.5 million pounds (Table 1).

The Cache La Poudre River received the greatest amount of toxic water pollution in Colorado from 1990-1994, a total of 356,000 pounds, followed by Clear Creek, Sand Creek, and the Arkansas River (Table 2). The ten most polluted waterways in Colorado received 814,000 pounds of toxic pollution between 1990 and 1994, 99.9% percent of the total in the State.

The top three facilities reporting the most toxic pollution of Colorado's waters over this period were Kodak in Windsor, which dumped 298,000 pounds of toxic chemicals, followed by Coors Brewing Company, and Conoco Denver Refinery in the towns of Golden, and Commerce City, respectively (Table 3). The toxic chemicals dumped in the greatest amounts were ammonia, a total of 613,000 pounds, followed by ethylene glycol, and glycol ethers (Table 4).

CF & I Steel L.P.* dumped the most carcinogens into Colorado's waters, a total of 7,100 pounds, followed by Coors Brewing Company and Norgren (Table 8). The Arkansas River received the greatest amount of cancer-causing toxic chemicals in Colorado, a total of 7,100 pounds, followed by Clear Creek and Big Dry Creek (Table 7).

CF & I Steel L.P.* dumped the greatest amount of persistent toxic metals in Colorado's waters, a total of 9,000 pounds, followed by Coors Brewing Company and Norgren (Table 8). The Arkansas River received the greatest amount of persistent toxic metals, a total of 9,400 pounds, followed by Clear Creek and Big Dry Creek (Table 7).

Kodak dumped the greatest amount of toxic chemicals that cause reproductive damage or birth defects into Colorado's waters, a total of 50,000 pounds, followed by Landmark Petroleum Inc.* and Coors Brewing Company (Table 8). The Cache La Poudre River received the greatest amount of toxic chemicals that cause reproductive damage or birth defects, a total of 50,000 pounds, followed by the Colorado River and Clear Creek (Table 7).

These discharges to Colorado's waters include only those wastes released by companies physically located in Colorado. 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 Colorado, over 1,000 miles of rivers and streams, and almost all the lakes assessed (9,700 acres) 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 Colorado's waters, we used EPA's assumption that 25 percent of all toxic chemicals transferred to POTWs pass-through untreated[3]. Table 1 presents the EWG estimate of toxic chemicals assumed to be discharged by the POTWs in Colorado. 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

Colorado

Toxic pollution of Colorado waters (1990-1994)

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

Direct Water Discharges	814,818 Pounds
Estimated Sewer Discharges‡	699,054 Pounds
Total Discharges to Waters	**1,513,872 Pounds**

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

River or Water Body	Toxic chemical release to waterbody (pounds)
Cache La Poudre River	356,011
Clear Creek	210,759
Sand Creek	141,980
Arkansas River	75,355
Platte River	26,429
Big Dry Creek	1,025
Little Thompson River	868
Colorado River	850
Brush Creek	516
Toll Gate Creek	460

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

Facility	City	Toxic chemical release to waters (pounds)
Kodak	Windsor	297,755
Coors Brewing Co.	Golden	210,759
Conoco Denver Refinery	Commerce City	113,426
CF & I Steel L.P.*	Pueblo	65,019
Western Sugar Co.	Greeley	58,256
Colorado Refining Co.	Commerce City	28,052
Western Sugar Co.	Fort Morgan	25,929
U.S. Bureau Of Prisons	Florence	10,331
Norgren	Littleton	1,275
Golden Tech. Co. Inc.	Johnstown	868

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

Chemical	Toxic chemical release to waters (pounds)
Ammonia	613,053
Ethylene glycol	101,469
Glycol ethers	49,500
Methanol	12,140
Methyl tert-butyl ether	11,199
Sulfuric acid	10,342
Lead compounds	7,217
Manganese compounds	2,412
Nickel compounds	1,103
Copper compounds	875

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

Facility	City	Toxic chemical release to sewers (pounds)
Excel Corp.	Fort Morgan	396,820
Republic Paperboard Co.	Commerce City	312,388
Excel Corp.	Sterling	279,714
Syntex Chemicals Inc.	Boulder	219,815
Pike Tool & Grinding Inc.	Colorado Springs	208,689
Cobe Cardiovascular Inc.	Lakewood	139,200
Borden Inc.	Englewood	113,550
National By-prods. Inc.	Denver	111,119
Hauser Chemical Research Inc.	Boulder	99,692
Hewlett-Packard Co.	Fort Collins	83,827

‡ Total discharges of toxic chemicals to sewer systems in Colorado was 2,796,216 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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ENVIRONMENTAL WORKING GROUP™

Dishonorable Discharge

Colorado

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

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

Carcinogens	9,202 Pounds
Persistent Toxic Metals	14,079 Pounds
Reproductive Toxins	50,579 Pounds
Total (see note)	**64,234 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. Colorado waters receiving the greatest amounts of carcinogens, persistent toxic metals, and reproductive toxins** (1990-1994).**

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

River or Water Body	Carcinogens** released to waters (lbs.)
Arkansas River	7,100
Clear Creek	1,719
Big Dry Creek	250

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

River or Water Body	Persistent toxic metals released to waters (lbs.)
Arkansas River	9,400
Clear Creek	2,758
Big Dry Creek	1,025
Cache La Poudre River	371
Whitney Ditch	275

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

River or Water Body	Reproductive toxins** released to waters (lbs.)
Cache La Poudre River	49,578
Colorado River	530
Clear Creek	376

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

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

Facility	City	Carcinogens** released to waters (lbs.)
CF & I Steel L.P.*	Pueblo	7,100
Coors Brewing Co.	Golden	1,719
Norgren	Littleton	250

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

Facility	City	Persistent toxic metals released to waters (lbs.)
CF & I Steel L.P.*	Pueblo	9,400
Coors Brewing Co.	Golden	2,758
Norgren	Littleton	1,025
Kodak	Windsor	371
Universal Forest Prods. Inc.	Windsor	290

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

Facility	City	Reproductive toxins** released to waters (lbs.)
Kodak	Windsor	49,578
Landmark Petroleum Inc.*	Fruita	505
Coors Brewing Co.	Golden	376

* 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 Cache La Poudre River in Colorado

Total toxic pollution reported (1990-1994): 356,011 Pounds

Table 1. Polluters discharging the greatest amounts of toxic chemicals to the Cache La Poudre River in Colorado (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
Kodak	Windsor	297,755
Western Sugar Co.	Greeley	58,256

Table 2. Toxic chemicals discharged in the greatest amounts to the Cache La Poudre River in Colorado (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	248,256
Glycol ethers	49,500
Ethylene glycol	45,600
Methanol	12,140
Silver compounds	267
Manganese compounds	104

‡ 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 Cache La Poudre River in Colorado (1990-1994).**

Carcinogens	12 Pounds
Persistent Toxic Metals	371 Pounds
Reproductive Toxins	49,578 Pounds
Total‡	**49,961 Pounds**

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

Top dischargers of carcinogens to the Cache La Poudre River in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to the Cache La Poudre River in Colorado (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Kodak	Windsor	371

Top dischargers of reproductive toxins to the Cache La Poudre River in Colorado (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)
Kodak	Windsor	49,578

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

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Dishonorable Discharge

Clear Creek in Colorado

Total toxic pollution reported (1990-1994): 210,759 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Coors Brewing Co.	Golden	210,759

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	208,000
Nickel compounds	853
Copper compounds	850
Chromium	380
Nickel	376
Chromium compounds	181
Lead compounds	110

‡ The sum of carcinogens, persistent toxic metals, and reproductive toxins listed in Table 3 may be larger than the total because a chemical may be in one or more categories. Chemicals were counted only once for the total in Table 3.

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

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

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

Carcinogens	1,719 Pounds
Persistent Toxic Metals	2,758 Pounds
Reproductive Toxins	376 Pounds
Total‡	**2,758 Pounds**

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

Top dischargers of carcinogens to Clear Creek in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)
Coors Brewing Co.	Golden	1,719

Top dischargers of persistent toxic metals to Clear Creek in Colorado (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)
Coors Brewing Co.	Golden	2,758

Top dischargers of reproductive toxins to Clear Creek in Colorado (1990-1994).**

Facility	City	Reproductive toxins** released to water (lbs)
Coors Brewing Co.	Golden	376

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

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Dishonorable Discharge

Sand Creek in Colorado

Total toxic pollution reported (1990-1994): 141,980 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Conoco Denver Refinery	Commerce City	113,423
Colorado Refining Co.	Commerce City	28,052
Five Star Corp.	Commerce City	505

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	130,000
Methyl tert-butyl ether	11,199
Hydrochloric acid	250
Phosphoric acid	250
Chlorine	133

‡ 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 Sand Creek in Colorado (1990-1994).**

Carcinogens	9 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	50 Pounds
Total‡	**50 Pounds**

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

Top dischargers of carcinogens to Sand Creek in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Sand Creek in Colorado (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Sand Creek in Colorado (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 Colorado

Total toxic pollution reported (1990-1994): 75,355 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
CF & I Steel L.P.*	Pueblo	65,019
U.S. Bureau Of Prisons	Florence	10,331

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

Chemical	Toxic chemical release to waterbody (pounds)
Ethylene glycol	55,619
Sulfuric acid	10,331
Lead compounds	7,100
Manganese compounds	2,300

‡ 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 Colorado (1990-1994).**

Carcinogens	7,100 Pounds
Persistent Toxic Metals	9,400 Pounds
Reproductive Toxins	0 Pounds
Total‡	**9,400 Pounds**

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

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

Facility	City	Carcinogens** released to water (lbs)
CF & I Steel L.P.*	Pueblo	7,100

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

Facility	City	Persistent toxic metals released to water (lbs)
CF & I Steel L.P.*	Pueblo	9,400

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

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

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Dishonorable Discharge

The Platte River in Colorado

Total toxic pollution reported (1990-1994): 26,429 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Western Sugar Co.	Fort Morgan	25,929
Norgren	Littleton	250
AAA Plating Inc.*	Denver	250

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	25,929
Ethylene glycol	250
Hydrochloric acid	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 Platte River in Colorado (1990-1994).**

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

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to the Platte River in Colorado (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

Big Dry Creek in Colorado

Total toxic pollution reported (1990-1994): 1,025 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Norgren	Littleton	1,025

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

Chemical	Toxic chemical release to waterbody (pounds)
Zinc compounds	505
Copper	250
Nickel 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 Big Dry Creek in Colorado (1990-1994).**

Carcinogens	250 Pounds
Persistent Toxic Metals	1,025 Pounds
Reproductive Toxins	0 Pounds
Total‡	**1,025 Pounds**

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

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

Facility	City	Carcinogens** released to water (lbs)
Norgren	Littleton	250

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

Facility	City	Persistent toxic metals released to water (lbs)
Norgren	Littleton	1,025

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

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

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Dishonorable Discharge

The Little Thompson River in Colorado

Total toxic pollution reported (1990-1994): 868 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Golden Tech. Co. Inc.	Johnstown	868

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

Chemical	Toxic chemical release to waterbody (pounds)
Ammonia	868

‡ 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 Little Thompson River in Colorado (1990-1994).**

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

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

Top dischargers of carcinogens to the Little Thompson River in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to the Little Thompson River in Colorado (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 Colorado River in Colorado

Total toxic pollution reported (1990-1994): 850 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Landmark Petroleum Inc.*	Fruita	765

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

Chemical	Toxic chemical release to waterbody (pounds)
1,2,4-Trimethylbenzene	250
Toluene	250
Xylene (mixed isomers)	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 Colorado River in Colorado (1990-1994).**

Carcinogens	55 Pounds
Persistent Toxic Metals	85 Pounds
Reproductive Toxins	530 Pounds
Total‡	**590 Pounds**

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

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

Facility	City	Carcinogens** released to water (lbs)

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

Facility	City	Persistent toxic metals released to water (lbs)

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

Facility	City	Reproductive toxins** released to water (lbs)
Landmark Petroleum Inc.*	Fruita	505

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Dishonorable Discharge

Brush Creek in Colorado

Total toxic pollution reported (1990-1994): 516 Pounds

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

Facility	City	Toxic chemical release to water (pounds)
Lockheed Martin Astronautics*	Littleton	516

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

Chemical	Toxic chemical release to waterbody (pounds)
Methyl ethyl ketone	501

‡ 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 Brush Creek in Colorado (1990-1994).**

Carcinogens	0 Pounds
Persistent Toxic Metals	0 Pounds
Reproductive Toxins	10 Pounds
Total‡	**10 Pounds**

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

Top dischargers of carcinogens to Brush Creek in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Brush Creek in Colorado (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Brush Creek in Colorado (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

Toll Gate Creek in Colorado

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

Table 1. Polluters discharging the greatest amounts of toxic chemicals to Toll Gate Creek in Colorado (1990-1994).

Facility	City	Toxic chemical release to water (pounds)
U.S. Army Fitzsimons	Aurora	460

Table 2. Toxic chemicals discharged in the greatest amounts to Toll Gate Creek in Colorado (1990-1994).

Chemical	Toxic chemical release to waterbody (pounds)
Chlorine	460

‡ 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 Toll Gate Creek in Colorado (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 Toll Gate Creek in Colorado (1990-1994).**

Top dischargers of carcinogens to Toll Gate Creek in Colorado (1990-1994).**

Facility	City	Carcinogens** released to water (lbs)

Top dischargers of persistent toxic metals to Toll Gate Creek in Colorado (1990-1994).

Facility	City	Persistent toxic metals released to water (lbs)

Top dischargers of reproductive toxins to Toll Gate Creek in Colorado (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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