

### **SOLID AND HAZARDOUS WASTE APPENDIX**

The Toxics Release Inventory (TRI) provides state reports about releases and transfers of chemicals and compounds. Each report contains overall state information regarding releases and transfers, a list of the top five chemicals released or transferred, offsite, in that state, and a list of the top ten facilities that released or transferred, off-site, the greatest amount of chemicals. All chemical and facility information was taken directly from the Envirofacts TRI database maintained by the U.S. Environmental Protection Agency (EPA).

# TRI State Report Descriptions

This is a brief description of the TRI State Reports. A brief explanation of each column heading is given.

### State Information

This is general TRI information relating to the state.

- Total Facilities—The total facilities reporting in that state.
- Total Forms—The total number of forms submitted. Each form has a unique Document Control Number.
- Total Forms A's—The total number of short forms submitted.
- Transfer into State—The total amount of waste chemicals (in pounds) transferred into the state.
- Transfer out of State—The total amount of waste chemicals (in pounds) transferred out of the state.
- Population—The population of a state as reported by the U.S. Census Bureau for 1990.

## Reported Releases and Waste Management Activities

### On-Site Releases

The amount of chemicals released as reported by facilities in that state.

- Air Emissions—Total on-site releases of a particular type in pounds where the environmental medium = 'AIR'.
- Surface Water Discharges—Total on-site releases of a particular type in pounds where the environmental medium = 'WATER'.
- Underground Injection—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I' or 'UNINJ IIV'.
  - Class I Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I'.
  - Class II-V Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ IIV'.
- Releases to Land—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C' or 'OTH LANDF'.
  - RCRA Subtitle C Landfills—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C'.
  - Other On-Site Land Releases—Total on-site releases of a particular type in pounds where the environmental medium = 'OTH LANDF'.
- Total On-Site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land.
- Transfer Off-Site to Disposal—Total off-site transfer of a particular type in pounds for disposal.
- Total On and Off-Site Releases—Sum of total on-site releases and off-site transfers.

## Off-Site Releases (Transfers Off-Site to Disposal)

 POTWs (metals and metal compounds)—Total transfer of metals and metal compounds in pounds to POTWs as offsite releases.

- Transfer Off-Site to Disposal—Total off-site transfer of a particular type in pounds for disposal.
- Total Off-Site Releases—Sum of total POTW's (metals and metal compounds) and off-site transfers to disposals.
- Total Releases—Sum of total on-site and off-site releases.

### Source Reduction Activities

- Energy Recovery On-Site—The total amount of the toxic chemical in waste burned for energy recovery onsite, reported in section 8.2 of Form R.
- Energy Recovery Off-Site—The total amount of the toxic chemical in waste sent offsite to be burned for energy recovery, reported in section 8.3 of Form R.
- Recycling On-Site—The total amount of the toxic chemical recycled onsite, reported in section 8.4 of Form R.
- Recycling Off-Site—The total amount of the toxic chemical sent offsite for recycling, reported in section 8.5 of Form R.
- Treatment On-Site—The total amount of the toxic chemical treated onsite, reported in section 8.6 of Form R.
- Treatment Off-Site—The total amount of the toxic chemical treated offsite, reported in section 8.7 of Form R.
- Total Releases—The total amount of the toxic chemical released due to production related events by the facility to all environmental media both on and off site, reported in section 8.1 of Form R.
- Total Production Related Waste Managed—The sum of recycling, energy recovery, treatment, and total releases.

### Transfers Off-Site to POTW's

- Metals and Metal Compounds—Total transfer of metals and metals compounds in pounds to POTW's as an off-site releases.
- Non-Metal TRI Chemicals—Total off-site transfer of non-metals in pounds to a POTW's as an off-site release.

 Total Transfers Off-site to POTW's—Sum of total off-site transfers of Metals and Non-Metals to POTW's.

### Top Ten Chemicals for Air/Water/Land/Underground Injection Releases and the Top Ten Chemicals for Total On and Off-Site Releases

The waste chemicals that are most released into the environment for that state.

- Chemical—The name of the chemical.
- Air Emissions—Total on-site releases of a particular type in pounds where the environmental medium = 'AIR'.
- Surface Water Discharges—Total on-site releases of a particular type in pounds where the environmental medium = 'WATER'.
- Underground Injection—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I' or 'UNINJ IIV'.
  - Class I Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ I'.
  - Class II-V Wells—Total on-site releases of a particular type in pounds where the environmental medium = 'UNINJ IIV'.
- Releases to Lands—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C' or 'OTH LANDF'.
  - RCRA Subtitle C Landfills—Total on-site releases of a particular type in pounds where the environmental medium = 'RCRA C'.
  - Other On-Site Land Release—Total on-site releases of a particular type in pounds where the environmental medium = 'OTH LANDF'.
- Total On-site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land.

- Transfers Off-Site to Disposal—Total off-site transfer of a particular type in pounds for disposal.
- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers.

### Top Ten Facilities for Air/Water/Land/Underground Injection Releases and the Top Ten Facilities for Total On and Off-site Release

The facilities that release the most waste chemicals into the environment for that state.

- Facility—The name of the facility.
- City, County—The city name and the county name where the facility is located.
- Air Emissions—Total on-site releases in pounds by a facility where the environmental medium = 'AIR'.
- Surface Water Discharge—Total on-site releases in pounds by a facility where the environmental medium = 'WATER'.
- Underground Injection—Total on-site releases in pounds by a facility where the environmental medium = 'UNINJ I' or 'UNINJ IIV'.
  - Class I Wells—Total on-site releases in pounds by a facility where the environmental medium = 'UNINJ I'.

- Class II-V Wells—Total on-site releases in pounds by a facility where the environmental medium = 'UNINJ IIV'.
- Releases to Land—Total on-site releases in pounds by a facility where the environmental medium = 'RCRA C' or 'OTH LANDF'.
  - RCRA Subtitle C Landfills—Total on-site releases in pounds by a facility where the environmental medium = 'RCRA C'.
  - Other On-Site Land Releases—Total on-site releases in pounds by a facility where the environmental medium = 'OTH LANDF'.
- Total On-site Releases—The sum of Air Emissions, Surfaces Water Discharges, Underground Injection, and Releases to Land by a facility.
- Transfers Off-Site to Disposal—Total off-site transfer in pounds for disposal by a facility.
- Total On and Off-site Releases—Sum of total on-site releases and off-site transfers by a facility.

The following table contains the EPA's Toxics Release Inventory information for Montana for the year 2001 (2001 is the latest year for which a published report is available). More recent information up to year 2003 is available from EPA's website at: http://www.epa.gov/triexplorer/.



### 2001 Toxics Release Inventory

### **MONTANA**

#### Reported Releases and Other Waste Management Activities (in pounds)

62,744,079
4,292,997
48,785
0
369,092
2,395
58,030,810
2,644,099
65,388,178
8,626,607
62,534
3,948,532
41,063
10,499,243
36,449
51,214,536
74,428,965
12,029,507
102,939
36,638
39,313
1,619
14
1,605
227,840
2,808,061

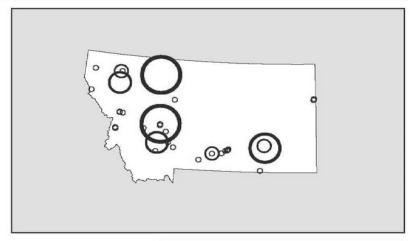
- \* Transfers to POTWs of metals and metal category compounds are included in off-site releases. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.
- \* Transfers to POTWs of non-metals are included in treated off-site waste management activity.
- \*\*\* Excludes non-production-related releases; e.g. releases due to catastrophic events or remedial actions.
- \*\*\*\* Transfers reported without a valid waste management code.

(not including metals to POTWs)

Total Transfers Off-site for Further Waste

Management, including Disposal

For More Information	n	
State Contact Tom Ellerhoff	EPA Regional Contact Joyel Dhieux	To obtain TRI data use assistance, call TRI User
1520 East 6th Avenue	USEPA Region 8 (8P-P3T)	Support Service (TRI-US):
Helena, MT 59620-0901	999 18th Street, Suite 500	(202) 566-0250
(406) 444-5263	Denver, CO 80202	tri.us@epa.gov
Fax: (406) 444-4386	(303) 312-6447	
tellerhoff@state.mt.us	dhieux.joyel@epa.gov	



The largest circle in the state map represents
the largest facility for on-site releases in the
state of Montana. All circles are proportion-
ally-sized to represent the on-site releases at
each facility within this state.

3,216,411

State/TR	I Data
Population	905,382
Square Miles	145,556
Total Facilities	49
Total Forms	293
Form As	34

	Total
National Rank for Total On- and Off-site Releases*	
Rank	25
Pounds	65,388,178
National Rank for Total On-site Releases**	
Rank	25
Pounds	62,744,079
National Rank for Total Releases within State***	
Rank	25
Pounds	63,507,964
National Rank for Production-related Waste Managed	
Rank	44
Pounds	74,428,965

- Includes transfers out-of-state for disposal. Excludes transfer amounts sent for disposal to other TRI facilities reporting that amount released on-site.
- \*\* Includes amounts released at the facility. Excludes amounts transferred to other sites.
- \*\*\* Excludes transfers for disposal sent out-of-state or sent to other TRI facilities within the state reporting that amount released on-site.

## 2001 Toxics Release Inventory

### **MONTANA**

### On-site and Off-site Releases for Top Five Chemicals Ranked on Total Releases in the State (All Chemicals)

			On-site	Releases		Off-site Releases		Off-site	e Transfers to Di	sposal
			Surface		On-site	Transfers	Total	Transferred	Transferred	Transferred
CAS		Air	Water	Underground	Releases to	Off-site to	Releases in	Into	Within	Out of
Number	Chemical	Emissions	Discharges	Injection	Land	Disposal*	the State**	State	State	State
		Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
_	Zinc compounds	6,624	14	0	24,009,658	763,254	24,779,550	92,100	1,555	761,699
_	Lead compounds	6,913	349	10,813	14,054,719	791,161	14,863,955	48,301	7,297	783,864
_	Barium compounds	89,853	5	0	8,290,628	278,000	8,658,486	0	278,000	0
-	Copper compounds	12,595	10	47,757	3,385,422	40,273	3,486,057	19,800	23,677	16,596
_	Manganese compounds	10,975	24,006	0	2,855,009	48,827	2,938,817	150	47,505	1,322

#### On-site and Off-site Releases for PBT Chemicals Ranked on Total Releases in the State

			On-site	Releases		Off-site Releases		Off-site Transfers to D			
CAS		Air	Surface Water	Underground	On-site Releases to	Transfers Off-site to	Total Releases in	Transferred Into	Transferred Within	Transferred Out of	
Number	Chemical	Emissions Pounds	Discharges	Injection	Land	Disposal*	the State**	State	State	State	
	Lead compounds	6,913.38	Pounds 349.20	Pounds 10,813.00	Pounds 14,054,718.70	Pounds 791,160.58	Pounds 14.863.954.86	Pounds 48,301.20	7,296.90	Pounds 783,863.68	
7439-92-1	Lead Compounds	327.70	24.00	0.00	82,820.00	1,238.40	84,410.10	0.00	1,238.40	0.00	
31050 SS R	THE COLUMN TO SERVICE AND ADDRESS OF THE COLUMN					100 C	10.00	17.000			
_	Mercury compounds	1,772.40	0.04	18.00	7,159.50	426.41	9,376.35	0.00	31.00	395.41	
7420 07 6	Polycyclic aromatic compounds	2,213.19	7.00	0.00	885.80	50.90	3,156.89	0.00	22.90	28.00	
7439-97-6	Mercury	69.80	2.40	0.00	430.80	6.80	509.80	0.00	6.80	0.00	
191-24-2	Benzo(g,h,i)perylene	153.71	0.00	0.00	0.30	2.20	156.21	0.00	1.80	0.40	
118-74-1	Hexachlorobenzene	11.70	0.00	0.00	0.00	0.00	11.70	0.00	0.00	0.00	
	Dioxin and dioxin-like compounds	0.04	0.00	0.00	0.00	0.00	0.04	0.00	0.00	0.00	
	Dioxin and dioxin-like compounds (in grams)	17.593	0.162	0.000	0.049	0.152	17.956	0.000	0.152	0.000	
309-00-2	Aldrin	_+++	_	_	_	_	_	_	_	-	
57-74-9	Chlordane	***	-	· -	1. <del>1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1</del>	_	·	_	7	-	
76-44-8	Heptachlor	_***	_	_	_	-	_	_	_	_	
465-73-6	Isodrin	_***	<del></del>	_	-	_	_		_	-	
72-43-5	Methoxychlor	_***	_	_	_	_	_	_	_	_	
29082-74-4	Octachlorostyrene	_***	_	_	_	_	_	_	_	_	
40487-42-1	Pendimethalin	***	_	_	_	_	_	_	_	_	
608-93-5	Pentachlorobenzene	_***	i <del></del>	-				-	-	-	
1336-36-3	Polychlorinated biphenyls (PCBs)	***	_	_	_	_	_	_	_	_	
79-94-7	Tetrabromobisphenol A	_***	1-	-			_		-	_	
8001-35-2	Toxaphene	_***	_	_	_	_	_	_	_	_	
1582-09-8	Trifluralin	_***		_	_	_	-	_	_	_	

<sup>\*</sup> Excludes amounts transferred to other TRI facilities in the state reporting that amount released on-site.

<sup>\*\*</sup> The chemical ranking is based on the amounts in this column.

### **MONTANA**

### On-site and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (All Chemicals)

			On-site		Off-site	Releases			
			Undergro	und Injection	On-site Re	leases to Land		(Transfers Off-	site to Disposal)
		Surface			RCRA	Other	Total	Transferred	
	Air	Water	Class I	Class II-V	Subtitle C	On-site Land	On-site	Within	Out of
Facility, City, County	Emissions Pounds	Discharges	Wells	Wells	Landfills	Releases	Releases*	State	State
V . T. 1 V . T. X . C. 1 X . C.		Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Montana Tunnels Mining Inc., Jefferson City, Jefferson	9,850	0	0	0	0	23,633,174	23,643,024	0	0
ASARCO Inc., East Helena, Lewis And Clark	12,252	166	0	0	0	20,063,922	20,076,340	0	2,194,380
Colstrip Steam Electric Station, Colstrip, Rosebud	286,163	0	0	0	0	10,819,248	11,105,411	254,951	25
Golden Sunlight Mines Inc., Whitehall, Jefferson	54,580	0	0	0	0	2,548,199	2,602,779	0	0
Stone Container Corp., Missoula, Missoula	1,443,054	32,691	0	0	0	31,419	1,507,164	670	255
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	585,297	0	0	0	0	171,592	756,889	0	0
SMC Nye Mine Site, Nye, Stillwater	21	0	0	369,092	0	362,498	731,611	175,148	1
Plum Creek Mdf Inc., Columbia Falls, Flathead	697,550	0	0	0	0	0	697,550	0	0
Conoco Inc. Billings Refy., Billings, Yellowstone	236,466	306	0	0	0	0	236,772	0	0
Stillwater Mining Co. East Boulder Ops., Big Timber, Sweet Grass	247	Ö	0	0	0	225,583	225,830	0	0

#### On-site and Off-site Releases for Top Ten Facilities Ranked on Total On-site Releases in the State (PBT Chemicals)

			On-site			Off-site	Releases		
			Undergro	und Injection	On-site Re	leases to Land		(Transfers Off-s	site to Disposal)
		Surface			RCRA	Other	Total	Transferred	
	Air	Water	Class I	Class II-V	Subtitle C	On-site Land	On-site	Within	Out of
Facility, City, County	Emissions	Discharges	Wells	Wells	Landfills	Releases	Releases*	State	State
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Montana Tunnels Mining Inc., Jefferson City, Jefferson	169.20	0.00	0.00	0.00	0.00	8,187,629.00	8,187,798.20	0.00	0.00
ASARCO Inc., East Helena, Lewis And Clark	4,336.00	1.00	0.00	0.00	0.00	5,776,075.00	5,780,412.00	0.00	784,237.00
Golden Sunlight Mines Inc., Whitehall, Jefferson	8.10	0.00	0.00	0.00	0.00	82,429.00	82,437.10	0.00	0.00
Colstrip Steam Electric Station, Colstrip, Rosebud	1,728.46	0.00	0.00	0.00	0.00	54,348.00	56,076.46	701.00	5.12
SMC Nye Mine Site, Nye, Stillwater	0.87	0.00	0.00	10,831.00	0.00	19,498.00	30,329.87	4,949.00	1.00
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	1,627.00	0.00	0.00	0.00	0.00	13,473.00	15,100.00	0.00	0.00
Stillwater Mining Co. East Boulder Ops., Big Timber, Sweet Grass	9.00	0.00	0.00	0.00	0.00	9,295.00	9,304.00	0.00	0.00
Columbia Falls Aluminum Co. L.L.C., Columbia Falls, Flathead	1,501.00	0.00	0.00	0.00	0.00	743.00	2,244.00	0.00	0.00
Lewis & Clark Station, Sidney, Richland	85.00	26.40	0.00	0.00	0.00	824.40	935.80	1,058.00	0.00
Stone Container Corp., Missoula, Missoula	190.90	351.20	0.00	0.00	0.00	153.60	695.70	664.80	0.00

The facility ranking is based on the amounts in this column; these quantities exclude transfers out of state.

## 2001 Toxics Release Inventory

### **MONTANA**

### Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (All Chemicals)

	1							Total	Total Non-
			Energy	Energy			Quantity	Production-	Production-
	Recycled	Recycled	Recovery	Recovery	Treated	Treated	Released On-	related	related
Facility, City, County	On-site	Off-site	On-site	Off-site	On-site	Off-site	and Off-site*	Waste Managed	Waste Managed
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
Montana Tunnels Mining Inc., Jefferson City, Jefferson	0	25,815	0	0	0	0	20,682,625	20,708,440	702,662
Colstrip Steam Electric Station, Colstrip, Rosebud	0	1,601	0	0	2,500,000	474	11,344,890	13,846,966	0
ASARCO Inc., East Helena, Lewis And Clark	6,898,619	0	0	0	0	0	10,944,629	17,843,248	11,326,091
Golden Sunlight Mines Inc., Whitehall, Jefferson	0	0	0	0	0	0	2,579,389	2,579,389	0
Stone Container Corp., Missoula, Missoula	0	0	3,470,000	428	2,840,891	1	1,499,381	7,810,700	0
SMC Nye Mine Site, Nye, Stillwater	423	0	0	0	23,096	0	906,760	930,279	0
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	0	0	0	0	0	0	756,889	756,889	0
Plum Creek Mdf Inc., Columbia Falls, Flathead	0	0	0	0	0	0	696,300	696,300	0
Conoco Inc. Billings Refy., Billings, Yellowstone	0	50	0	0	9,020	4,305	236,773	250,148	0
Stillwater Mining Co. East Boulder Ops., Big Timber, Sweet Grass	0	0	0	0	0	0	225,830	225,830	0

### Total Production-related Waste for Top Ten Facilities Ranked on Quantity Released On- and Off-site (PBT Chemicals)

			Energy	Energy			Quantity	Total Production-	Total Non- Production-
	Recycled	Recycled	Recovery	Recovery	Treated	Treated	Released On-	related	related
Facility, City, County	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	On-site Pounds	Off-site Pounds	and Off-site* Pounds	Waste Managed Pounds	Waste Managed Pounds
Montana Tunnels Mining Inc., Jefferson City, Jefferson	0.00	0.00	0.00	0.00	0.00	0.00	5,491,146.00	5,491,146.00	443,932.00
ASARCO Inc., East Helena, Lewis And Clark	4,643,364.00	0.00	0.00	0.00	0.00	0.00	1,322,530.00	5,965,894.00	5,242,119.00
Golden Sunlight Mines Inc., Whitehall, Jefferson	0.00	0.00	0.00	0.00	0.00	0.00	82,429.00	82,429.00	0.00
Colstrip Steam Electric Station, Colstrip, Rosebud	0.00	1.00	0.00	0.00	0.00	5.00	56,776.00	56,783.00	0.00
SMC Nye Mine Site, Nye, Stillwater	1.00	0.00	0.00	0.00	0.00	0.00	35,280.00	35,281.00	0.00
Colstrip Energy L.P. Rosebud Power Plant, Colstrip, Rosebud	0.00	0.00	0.00	0.00	0.00	0.00	15,100.00	15,100.00	0.00
Holcim Trident Plant, Three Forks, Gallatin	0.00	0.00	0.00	0.00	0.00	0.00	14,561.00	14,561.00	0.00
Stillwater Mining Co. East Boulder Ops., Big Timber, Sweet Grass	0.00	0.00	0.00	0.00	0.00	0.00	9,304.00	9,304.00	0.00
Columbia Falls Aluminum Co. L.L.C., Columbia Falls, Flathead	178.00	0.00	0.00	0.00	0.00	0.00	2,244.00	2,422.00	0.00
Lewis & Clark Station, Sidney, Richland	0.00	0.00	0.00	0.00	0.00	0.00	1,994.00	1,994.00	0.00

<sup>\*</sup> The facility ranking is based on the amounts in this column; these quantities exclude non-production-related releases.