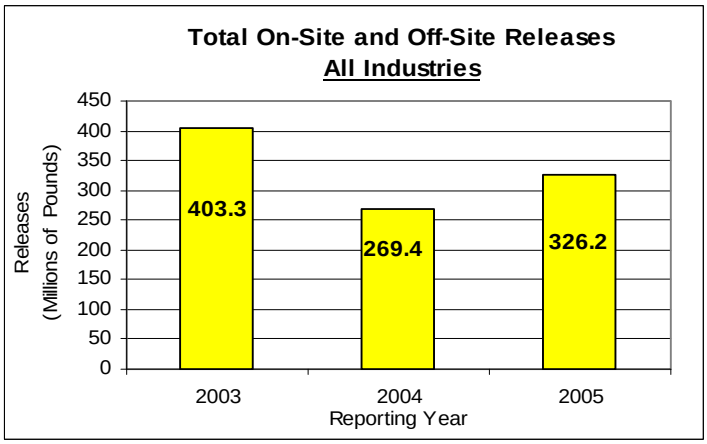
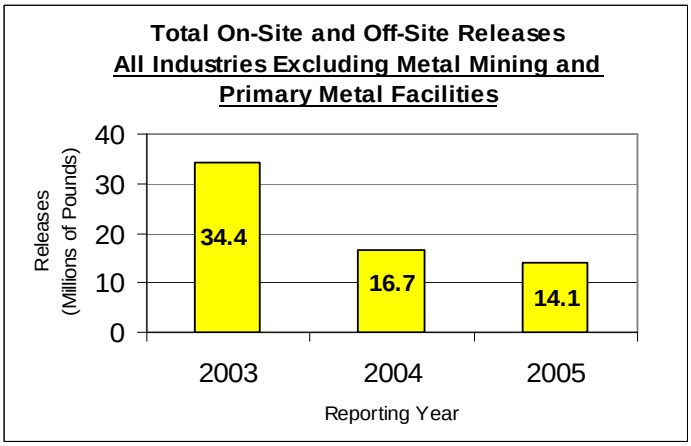
Nevada Report: 2005 Toxics Release Inventory

March 2007

U.S. EPA Region 9
Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations

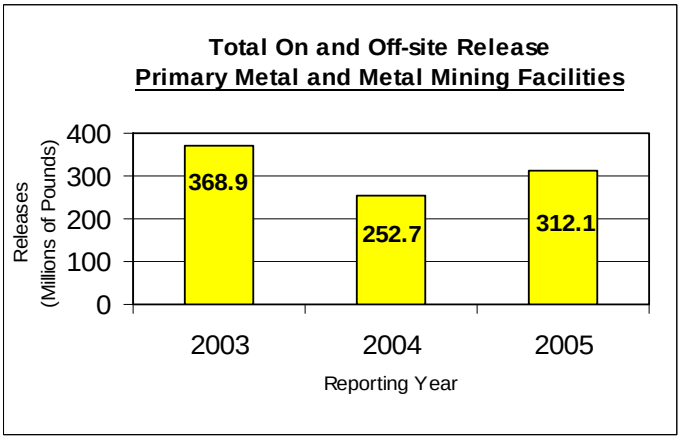
Trends in Toxic Chemical Releases for 2003 - 2005*





Total Releases for Reporting Years 2003-2005

Year	Air	Land	Under-ground Injection	Water	Off-Site
2003	1,841,845	400,650,496	2.8	102,551	708,687
2004	1,800,245	266,197,205	4.5	107,890	1,317,344
2005	1,979,411	322,793,943	6.0	110,556	1,329,232



The 2005 Public Data Release

EPA has made public the 2005 data on toxic chemicals that were released to Nevada's air, water and land. This information comes from the Toxics Release Inventory (TRI), a federal community right-to-know program. In Nevada, 133 facilities reported a total of 326.2 million pounds of toxic chemical releases.

Facilities that meet certain criteria must report the amounts of toxic chemicals disposed of or otherwise released on-site to air, water, land and injected underground and the amounts of chemicals transferred off-site for disposal or release. Off-site disposal or release can include land disposal at permitted hazardous waste facilities.**

The data does not indicate whether a facility is violating environmental laws. Many of the facilities reporting through this program are subject to state and federal regulations designed to protect human health and the environment. For instance, Resource Conservation and Recovery Act (RCRA) Subtitle C Landfills, a type of permitted hazardous waste fac

** Year to year data comparisons does not reflect changes in reporting requirements.*
*** No adjustments were made to account for double counting that could occur as a result of off-site transfers of some TRI facilities also being reported as on-site releases at permitted hazardous waste landfills and other TRI facilities that receive the on-site transfers.*

must comply with stringent requirements for liners, leak detection systems, and groundwater monitoring. Disposal in underground injection wells is regulated by EPA's Underground Injection Control Program to provide safeguards so that injection wells do not endanger current and future underground sources of drinking water.

Releases and Risk

Release is defined as the amount of a toxic chemical released on-site (to air, water, underground injection, landfills, and other land disposal), and the amount transferred off-site for disposal.

It is important to note that a release should not be directly equated with risk. To evaluate risk, release data must be combined with information about site-specific conditions, exposure, and chemical toxicity. TRI chemicals vary widely in toxicity. High volume releases of less toxic chemicals may pose less environmental risk than lower volume releases of highly toxic chemicals. Increases in on-site releases at permitted hazardous waste facilities may indicate a reduction in risk.

Industries

A facility is subject to TRI reporting requirements if it: has 10 or more full-time employees; is classified under a reportable Standard Industrial Classification (SIC) code; and manufactures, processes, or otherwise uses any of the listed toxic chemicals in amounts greater than the threshold quantities. For most chemicals (excluding Persistent, Bioaccumulative and Toxic (PBT) chemicals) the thresholds are 25,000 pounds for manufactured or processed and 10,000 pounds for otherwise used.

Manufacturing industries have been reporting their releases since 1987, and federal facilities started reporting in 1994. In 1998, an additional seven industry sectors began reporting their toxic chemical releases for the first time. These sectors are metal and coal mining, electricity generation, commercial hazardous waste treatment, solvent recovery, petroleum bulk terminals, and wholesale chemical distributors.

Nevada's Releases

Nevada industries as a whole reported an increase, from 2004 levels, total on-site and off-site releases increased by 21% a 56.8 million pound gain. Leading the trend was an increase of 56.6 million pounds in reported releases to land, a 21% change. The majority of the increases in on-site land disposal came from two Newmont Mining gold mines, Twin Creeks Mine and Carlin South Area Mine. Newmont Twin Creeks Mine increased its on-site land releases by 31.9 million pounds and Newmont Carlin South Area Mine reported a 30.4 million pound increase.

Many mines extract, move, store, process, and dispose of large amounts of waste rock and ore, materials which often contain low concentrations of naturally occurring metals. The vast majority of this material is placed in surface impoundments or on the land, and the metals are reported as on-site releases to land.

In the state of Nevada, metal mining and primary metal facilities account for 96% of all on-site and off-site releases and 97% of the on-site releases to land. Metal mining and primary metal facilities showed a 24% increase (59 million pounds) in land releases from 2004. Land releases from non-mining facilities decreased 20% or 2.9 million pounds. This was due in part to a 3.9 million pound decrease in releases from U.S. Ecology, a permitted hazardous disposal facility.

Overall, the state's air releases increased 179 thousand pounds or 10%. The rise in air releases can be attributed primarily to two facilities: R.R. Donnelley & Sons, a commercial printing facility and the Mohave Generating Station, electric services facility. R.R. Donnelley & Sons increased its air releases by 110 thousand pounds. The Mohave Generating Station raised its air releases by 54 thousand pounds from last year. Metal mining facilities saw a 1%, or 5 thousand pound, decrease in air releases from reporting year 2004.

There was a 3 thousand pound or 2% increase in water discharges. Newmont Mining Lone Tree Mine's gain of 2,680 pounds was the main cause for the increase in water releases. A large portion of this increase came from an increase in nitrate compound discharges.

The state experienced a minor increase in off-site releases. Off-site releases increased by approximately 1%, or 12 thousand pounds. The main contributor to the increase in off-site releases was, Tronox LLC, an industrial inorganic chemicals facility. This facility gained nearly 23 thousand pounds in off-site releases.

Persistent, Bioaccumulative, and Toxic Chemicals

In the year 2000, TRI was expanded to include additional Persistent Bioaccumulative and Toxic (PBT) chemicals and to require reporting for these chemicals at lower thresholds, ranging from 0.1 grams to 100 pounds. PBT pollutants are toxic chemicals that persist in the environment and bioaccumulate in food chains, posing risks to human health and ecosystems.

In Nevada, nearly 90 million pounds of total on-site and off-site releases of PBT chemicals were reported. There was a 18% (19.8 million pounds) decrease in PBT releases. This change was driven by the decrease in lead and lead compound releases.

Table of PBT Chemical Releases in Nevada

Releases of Persistent, Bioaccumulative and Toxic (PBT) chemicals in pounds. Dioxin and dioxin-like compounds data not in Toxicity Equivalence (TEQ).

	Total On- and Off-Site Releases		Percent Change
Chemical Name	**2004**	**2005**	
Lead and Lead Compounds (in pounds)	105,780,859	86,381,236	- 18%
Mercury and Mercury Compounds (in pounds)	3,943,459	3,573,624	- 9.4%
Polychlorinated Biphenyls (PCBs) (in pounds)	26,917	10,970	- 59%
Hexachlorobenzene (in pounds)	2,587	4,093	58%
Trifluralin (in pounds)	3,212	3,252	1%
Chlordane (in pounds)	399	493	24%
Polycyclic Aromatic Compounds (PACs) (in pounds)	175	200	14%
Heptachlor (in pounds)	162	122	- 25%
Benzo(g,h,i)perylene (in pounds)	1.18	1.38	17%
Dioxin and Dioxin-like Compounds (in grams)	9.84	10.36	5.3%

In determining release quantities for metal compounds, facilities only consider the primary metal portion of the compound. For instance, a facility reporting for lead compounds only reports the lead portion of the lead compounds released. Hence, the table above gives combined values for lead and lead compound releases and mercury and mercury compound releases. The PBT chemicals are ranked by 2005 total releases. The data is in pounds for all chemicals except dioxin and dioxin compounds, which is in grams.

Lead and Lead Compounds

Starting in the year 2001, lead and lead compounds were reported as Persistent Bioaccumulative and Toxic (PBT) chemicals. While lead and lead compounds have been on the list of reportable chemicals since 1987, for the year 2001 the reporting threshold was drastically lowered (from 25,000 pounds manufactured or processed, and 10,000 pounds otherwise used to 100 pounds manufactured, processed or other wise used). As a result, additional facilities are required to report releases of lead and lead compounds.

Approximately 86.3 million pounds of total releases of lead was reported in Nevada. Fifty-five percent of these releases were land releases from silver ore metal mining industries. The 19 million pound reduction in lead was driven by a 37.6 million pound decrease of land releases at one silver mine, Coeur Rochester Inc.

There was also a 3 thousand pound (32%) decrease in lead air releases. The facility with the largest decrease (1,910 pounds) in air releases was Coeur Rochester. The U.S. Department of Energy Sandia National Laboratories / Nevada, a government research facility, had the second largest decrease in air releases (1,790 pounds). Sandia reported 0 pounds of lead released in the air for 2005.

Mercury and Mercury Compounds

The reported 9% (370 thousand pounds) decrease in mercury and mercury compounds was driven by decreases of on-site land releases at two gold mines, Barrick Goldstrike and Newmont Carlin South Area. Barrick Goldstrike reported a 281 thousand pound

reduction in on-site land mercury releases and Newmont Carlin South Area reported a 126 thousand pound decrease in on-site land mercury releases. Mercury air releases decreased by 5% (246 pounds). Two gold mines reported the largest decreases in mercury air releases. Barrick Goldstrike reported a 504 pound decrease in mercury air releases and the Cortez Gold Mines reported a 491 pound decrease in mercury air releases.

Polychlorinated Biphenyls (PCBs)

Releases of PCBs decreased nearly 16 thousand pounds from 2004. Nearly all of the PCB releases in 2005 were on-site land releases in a RCRA Subtitle C Landfill at US Ecology Nevada Inc., in Beatty.

Facilities Releasing Largest Quantities of Chemicals

The top ten facilities in Nevada for total on-site and off-site releases of all chemicals are:

1. Newmont Mining Corp Twin Creeks Mine (Golconda, Humboldt County) with 80.9 million pounds.
2. Newmont Mining Corp Carlin South Area (Carlin, Eureka County) with 60.4 million pounds.
3. Barrick Goldstrike Mines Inc (Elko, Elko County) with 49.1 million pounds.
4. Coeur Rochester Inc (Lovelock, Pershing County) with 47.7 million pounds.
5. Newmont Mining Corp Lone Tree Mine (Valmy, Humboldt County) with 26.5 million pounds.
6. Robinson Nevada Mining Co (Ruth, White Pine County) with 20.6 million pounds.
7. Newmont Mining Corp Mule Canyon Mine (Battle Mountain, Lander County) with 16.0 million pounds.
8. US Ecology Nevada Inc. (Beatty, Nye County) with 7.3 million pounds.
9. Cortez Gold Mines (Crescent Valley, Lander County) with 3.1 million pounds.
10. Jerritt Canyon Mine (Elko, Elko County) with 2.6 million pounds.

The top ten facilities in Nevada for total on-site and off-site releases of PBT chemicals are:

1. Coeur Rochester Inc (Lovelock, Pershing County) with 47.7 million pounds.
2. Robinson Nevada Mining Co (Ruth, White Pine County) with 20.2 million pounds.
3. Barrick Goldstrike Mines Inc (Elko, Elko County) with 7.7 million pounds.
4. Newmont Mining Corp Carlin South Area (Carlin, Eureka County) with 5.1 million pounds.
5. Cortez Gold Mines (Crescent Valley, Lander County) with 2.5 million pounds.
6. Newmont Minning Corp Twin Creeks Mine (Golconda, Humboldt County) with 2.3 million pounds.
7. Glamis Marigold Mine (Valmy, Humboldt County) with 1.1 million pounds.
8. Newmont Mining Corp Lone Tree Mine (Valmy, Humboldt County) with 805 thousand pounds.
9. Bald Mountain Mine (Elko, White Pine County) with 716 thousand pounds.
10. Smoky Valley Common Operation (Round Mountain, Nye County) with 583 thousand pounds

On-line Access

For national information on data releases, see:
http://www.epa.gov/tri

The TRI data is available through Envirofacts Warehouse, EPA's premier internet site for distributing environmental information at:
http://www.epa.gov/enviro

or the TRI Explorer tool:
http://www.epa.gov/triexplorer

For general information on the Toxics Release Inventory, including reporting requirements for businesses, go to:
http://www.epa.gov/region09/toxic/tri

For more information on the EPA's PBT Chemicals Program, go to:
http://www.epa.gov/opptintr/pbt/

Information and Assistance

Region 9 staff will answer questions and assist you in learning more about the TRI Program in Region 9.

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