



State of Utah
Department of Environmental Quality

Utah Toxic Release Inventory
Reporting Year 2007
Data Summary Report

DRAFT

Division of Environmental Response and Remediation
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Table of Contents

List of Figures	ii
List of Tables	ii
Executive Summary	iii
Introduction.....	iii
2007 TRI Summary.....	iv
Total Releases	iv
Releases to Air	iv
Releases to Land	iv
Releases to Surface Water	v
Transfers to POTWs	v
Other Off-Site Transfers	v
Persistent Bioaccumulative Toxic (PBT) Chemicals – Dioxin & Dioxin-Like Compounds	v
Introduction.....	1
What is the Toxic Release Inventory?	1
Who Must Report to TRI?	1
What Type of Information Must Be Reported?	1
What Types of Chemicals are Subject to Reporting?	1
What Are the Benefits and Uses of TRI Data?	2
What Are the Limitations of the Data?	2
What Cautions Should Be Used in Interpreting TRI Data?	2
Changes to the Regulations.....	3
How Can the Public Obtain TRI Information?	3
DATA CORRECTIONS	4
Number of Reporting Facilities	7
Facility Location.....	8
Total Releases	9
Releases to Air	14
U.S. Magnesium.....	16
ATK Launch Systems – Promontory	18
Releases to Land.....	18
Mining.....	19
Kennecott Facilities	20
Waste Disposal Facilities	22
Electric Utilities	25
Releases to Surface Water.....	26
Transfers to Publicly Owned Treatment Works.....	27
Utah Facility Transfers to Other Off-Site Locations.....	28
Persistent Bioaccumulative Toxic (PBT) Chemicals	32
Summary.....	34

List of Figures

- Figure 1 Quantity of Utah TRI Submissions 1988-2007
- Figure 2 Utah 2007 TRI Facility Locations & Wasatch Front
- Figure 3 2007 Utah TRI Facilities– Quantity Reporting by Industrial Sector
- Figure 4 Utah TRI Total Releases 1988-2007
- Figure 5 Utah TRI Releases to Air 1988-2007
- Figure 6 U.S. Magnesium LLC TRI Releases to Air 1988-2007
- Figure 7 Kennecott Utah Copper Mine, Concentrators, and Power Plant TRI Releases to Land 1988-2007
- Figure 8 Kennecott Utah Copper Smelter & Refinery TRI Releases to Land 1988-2007
- Figure 9 Clean Harbors Grassy Mountain, LLC - TRI Releases to Land 1988-2007
- Figure 10 Energy Solutions (Envirocare) TRI Releases to Land 1988-2007
- Figure 11 Utah 2007 TRI Chemicals Transferred – Material Disposition by Disposition Type
- Figure 12 Utah 2007 TRI Chemical Transfers – Material Disposition by State
- Figure 13 Utah 2007 TRI Total Releases by Media

List of Tables

- Table 1 Top Facilities - Total On-Site and Off-Site Releases
- Table 2 Top Chemicals - Total On-Site and Off-Site Releases
- Table 3 Top Facilities - Total On-Site Releases
- Table 4 Top Chemicals - Total On-Site Chemical Releases
- Table 5 Top 10 Facilities - Total Releases to Air
- Table 6 Top 10 Chemicals – Total Releases to Air
- Table 7 Top 10 Facilities - Total Releases to Land
- Table 8 Top 10 Chemicals - Total Releases to Land
- Table 9 Waste Disposal Facility - Releases to Land
- Table 10 Top 10 Chemicals - Releases to Land from Waste Disposal Facilities
- Table 11 Coal-Fired Electric Utility Releases to Land by Facility
- Table 12 Top 10 Chemical Releases to Land from Coal-Fired Electric Utilities
- Table 13 Top 3 Facility Releases to Surface Water
- Table 14 Top 10 Chemical Releases to Surface Water
- Table 15 Top 10 Facility Transfers to POTWs
- Table 16 Top 10 Chemicals Transferred to POTWs
- Table 17 Top 10 Facilities Transferring Chemicals Off-Site
- Table 18 Top 10 Chemicals Transferred to Off-Site Facilities
- Table 19 Facilities Reporting PBT Dioxin and Dioxin-Like Compound Releases (units in grams)

EXECUTIVE SUMMARY

Introduction

Under Section 313 of the federal Emergency Planning and Community Right-to-Know Act (ECPRA) the Toxic Release Inventory (TRI) is a compilation of data submitted by certain facilities subject to the reporting requirements of EPCRA. TRI data provides select information of a finite list of chemicals defined by the statute concerning releases and transfers into the environment and of transfers of chemicals to other off-site facilities for final disposition. Section 313 requires a facility to submit TRI data to the U.S. Environmental Protection Agency and the State Hazardous Chemical Emergency Response Commission (SERC). This report is a summary of the data submitted to the Utah Department of Environmental Quality (DEQ) for calendar year 2007. TRI information includes only selected industrial sectors using larger volumes of certain listed chemicals. Therefore, TRI data may only include a relatively small portion of all chemical releases of environmental significance. TRI data can be used to provide basic information on the types and volumes of waste and emissions at a facility, but the data must be used with other concentration, migration, environmental target, and exposure information to assess the relative level of human health or environmental risk.

Beginning with Reporting Year 2006 Utah started participating in the State Data Exchange Network-National Environment Information Exchange Network (SDX). This partnership provides DEQ the mechanism to receive TRI data directly from EPA and beginning with RY2006 data it is now the exclusive source of TRI data to the State of Utah where it is retained in the Utah Data Management System (Utah DMS).

Beginning in 2002, EPA made preliminary TRI data available via the internet. Persons interested may query data using a variety of query tools to retrieve multiple facility data across multiple years of reporting. In 2002 EPA began publishing state fact sheets which provide a summary of TRI data for each state.

It is traditionally the practice of EPA to “freeze” TRI data several months after the data are received on or before the annual July 1 submission deadline. TRI data forms including revision data may be submitted by a facility at any time during the calendar year. These data are processed dynamically at the EPA Data Processing Center and with minimal delay it is transmitted in real-time to the Utah database. The Utah database system does not currently “freeze” the data received. Information offered in this report reflects the presentation of all data and the statistical analyses reflects a compilation of all data resident in the Utah DMS received at the time the statistical tables and charts were generated.

The EPA TRI Public Data Release (PDR) report reflects a correction for data that has been “double-counted.” Double counting is the term applied by EPA to amounts of waste that have effectively been reported two times.¹ The Utah DMS does not currently factor double-counting into summary totals and duplication of certain data remains inherent to certain totals presented in this annual report. The multi-year trend data presented in past Utah TRI reports have shown

¹ 2006 State Fact Sheet (see end notes).

amounts up to 14% higher than EPA totals for the chosen year of comparison. UDEQ anticipates that the Utah 2007 reporting year data will be similar with this variation in totals reported.

The Utah Data Management System (DMS) is currently in transition. Several disruptions in the data and reporting by the DMS were anticipated while several unanticipated issues were also discovered while compiling the data for this report. In depth discussions of these topics are presented in the Data Corrections section of this report and in sections of the report where the impact to summary totals may benefit from supplementary explanation. The most significant impacts to data reported out by the DMS for the current reporting year indicate a shortage of approximately 45 million pounds, and an overage of approximately 8 million pounds.

EPA makes TRI data available on the internet for past years except for the latest report year. This serves as an independent source of data to cross-check past years. The current report year data set is made available to the public after it is announced by EPA via the Public Data Release.

2007 TRI Summary

For reporting year 2007, 187 facilities filed a total of 840 chemical forms under the federal TRI program. A total of 134 unique chemicals or chemical categories were reported.

Total Releases

Total On- and Off-site release amounts reported by all facilities reporting TRI in Utah for reporting year 2007 decreased by 8.5%. The amount of total releases reported in RY2007 was 184.7 million pounds. Total releases reported in RY2006 were 201.7 million pounds² showing a net decrease of 17.1 million pounds.

Releases to Air

The total TRI release to air reported by Utah facilities in 2007 decreased by 5.9%. The total release amount to air reported is 9.3 million pounds. The total release to air amount reported in 2006 was 9.9 million pounds showing a reduction of approximately 0.6 million pounds.

Releases to Land

In RY2007 total chemical releases to land decreased by 11.9%. Total releases to land in RY2007 were 159.7 million pounds.³ Releases for the prior report year totaled 181.3 million pounds⁴ resulting in a decrease of 21.6 million pounds.

Kennecott facilities in Utah comprise the largest single quantity of amount reported for releases to land. The combined releases reported by Kennecott facilities for releases to land in 2007 totaled 144.2 million pounds. Combined releases reported by Kennecott facilities for releases to

² Number was adjusted from 167.1 million lbs., see DC ITEM 1 and DC ITEM 2 under Data Corrections.

³ Number was adjusted from 167.9 million lbs., see DC ITEM 1 and DC ITEM 2 under Data Corrections.

⁴ Number was adjusted from 146.2 million lbs., see DC ITEM 1 and DC ITEM 2 under Data Corrections.

land in 2006 totaled 165.0 million pounds⁵ showing an overall decrease of 20.9 million pounds or 12.6%.

Releases to Surface Water

In RY2007 releases to surface water decreased by 5.9%. Total releases reported were 94,400 pounds in 2007. Releases in 2006 were reported at approximately 100,300 pounds.

Chevron Products Company reported a release of approximately 83,000 pounds (mostly for nitrate compounds), while Kennecott facilities reported approximately 11,000 pounds for various TRI chemicals. The combined amounts reported from these two facilities comprise 93.3% of the total quantities released statewide to surface waters.

Transfers to POTWs

Publicly Owned Treatment Works (POTWs) are publicly owned wastewater treatment plants. Transfers reported to POTWs in RY2007 decreased by 8.3%. Transfers totaled 1.19 million pounds in 2007. The amount reported in 2006 was 1.29 million pounds. 2007 shows a decrease by slightly more than 100,000 pounds. Nitrates constitute about 75.3% of the total chemicals transferred while nitrate compounds make up 8.4%. The remaining percentage is comprised of a variety of other chemicals in small percentages.

TRI-reported releases to POTWs do not include information concerning the rate of release or concentrations of chemicals in the release. However, state and federal law requires industrial facilities with wastewater flows exceeding federally established chemical concentrations to operate industrial pretreatment equipment to reduce such concentrations below harmful levels before discharging to the POTWs.

Other Off-Site Transfers

Transfers of TRI chemicals to “other off-site” locations are transfers to facilities other than POTWs. Often these facilities include chemical recyclers and waste disposal sites. The amount of chemicals reported transferred decreased by 24.9% amounting to 5.7 million pounds. The amount of other off-site transfers reported in 2007 was 17.1 million pounds, other off-site transfers in 2006 were reported at 22.8 million pounds.

Persistent Bioaccumulative Toxic (PBT) Chemicals – Dioxin & Dioxin-Like Compounds

For 2007, the amount of PBT chemicals released dropped by 3.3%. Dioxin and dioxin-like compounds were reported just above 4,383 grams, while the amount reported in 2006 was 4,532 grams for a decrease of 149 grams. A comparison between total releases to air and land shows that 0.7% of the total release amount reported was released to air while 99.3% was released to land in 2007. Releases to land remained virtually the same from last year while releases to air decreased by almost 26 grams.

⁵ Number was adjusted from 119.5 million lbs., see DC ITEM 1 and DC ITEM 2 under Data Corrections.

In 2007 U.S. Magnesium reported approximately 4,336 grams of dioxin and dioxin-like chemicals; this amount constitutes 98.9% of the total quantity reported.

DRAFT

INTRODUCTION

What is the Toxic Release Inventory?

The Toxic Release Inventory (TRI) is a database providing information about releases of certain TRI program specific chemicals and chemical categories into the environment, and transfers to off-site facilities by facilities that manufacture, process, or otherwise use Section 313 chemicals. Nationally, a facility subject to EPCRA reports TRI information annually to the U.S. Environmental Protection Agency (EPA) and to the state in which it is located. The Utah Hazardous Chemical Emergency Response Commission (more commonly known as the State Emergency Response Commission - SERC) was established under Utah Statute §63-5-5. The Utah Department of Environmental Quality (UDEQ) acts on behalf of the SERC to administer the EPCRA program in Utah and manage all associated data submitted by facilities subject to the reporting requirements of EPCRA. TRI data must be submitted annually by July 1 the previous calendar year. This report is a summary of data submitted to the UDEQ for EPCRA reporting year 2007.

Who Must Report to TRI?

A facility must report to TRI if it:

- Conducts operations within specified Standard Industrial Classification (SIC) Codes;
- Has 10 or more full-time employees (or equivalent); and
- Manufactures or processes more than 25,000 pounds or uses more than 10,000 pounds of any TRI listed chemical during the calendar year.

TRI data only includes reports from manufacturing facilities, federally owned facilities, coal mining, metal mining, electrical generation facilities combusting coal or oil, hazardous waste disposal, wholesale bulk petroleum distribution, chemical wholesale distribution, and solvent recycling.

What Type of Information Must Be Reported?

A facility must report the:

- Amount of each listed chemical released to the air, water, or soil;
- Amount of each listed chemical transferred off-site or sent to a wastewater treatment plant;
- Amount of each listed chemical recycled, treated, or disposed; and
- Facility's pollution reduction activities.

What Types of Chemicals are Subject to Reporting?

Over 600 chemicals and chemical categories were included in the reporting list for 2006, based on acute or chronic human health or environmental effects. Pursuant to the federal EPA TRI program, no new chemicals were added to the list for reporting year 2007. TRI program specific chemicals are listed under the Code of Federal Regulations 40 CFR part 372. For additional information on chemicals subject to reporting under TRI, visit EPA's website at

<http://www.epa.gov/tri/trichemicals/index.htm>. Changes promulgated by EPA to the TRI program, (i.e., additions or deletions of TRI program chemicals or chemical categories) are published in the Federal Register and updated annually in the Code of Federal Regulations.

What Are the Benefits and Uses of TRI Data?

TRI data can be used in a variety of ways:

- The public can use TRI data to identify potential concerns.
- Government can use TRI data to evaluate environmental programs and establish regulatory priorities.
- The data can be used to provide basic information on the types and volumes of waste being generated or managed at a facility and, in conjunction with other data, can be utilized to study and identify potential hazards to public health or the environment.
- Industry can use TRI data to establish release reduction targets and document release reduction progress.

What Are the Limitations of the Data?

- *Not All Toxic Releases/Transfers Are Reported.* Only a few sectors of industry are currently required to submit TRI reports. Thus, only a portion of all chemical releases or transfers is included in the inventory. Additionally, the list of chemicals for which reporting is required is not inclusive of all chemicals known to have significant public health or environmental impact.
- *Reported Release/Transfer Totals Usually Are Based on Estimations Only.* No special monitoring is required to calculate emission or transfer totals. Reported data is often based on estimations.
- *Smaller Release Totals Are Reported as Ranges, Not Exact Numbers.* If a chemical release or transfer estimate was below 1,000 pounds, companies were allowed to report ranges of 1-10, 11-499, and 500-999 pounds. In such cases, staff entered the mid-point of the range into Utah's database. These estimations may, therefore, be above or below the actual figure.
- *TRI Statewide Totals Cannot Be Compared Easily From Year to Year.* The TRI list of chemicals requiring reporting and methods requiring the estimating of emissions have changed significantly through the history of the TRI reporting program. Facilities may meet the TRI reporting requirements and submit TRI reports for some years and not others. These changes make accurate multi-year comparisons of statewide release or transfer totals very difficult.

What Cautions Should Be Used in Interpreting TRI Data?

- *TRI Reports Releases, Not Exposures.* Release estimates alone are not sufficient to determine exposure, risk of exposure, or calculate potential adverse human health or environmental affects.

- *TRI Does Not Report Concentrations.* TRI emission totals do not include information on the concentration of chemicals in air, water, or wastes placed on land. A large release may be a large volume at low concentration.
- *TRI Releases Are Often Permitted by State or Federal Law.* TRI releases are often permitted by state or federal environmental agencies after an evaluation has concluded the release will not adversely affect human health or the environment.

Changes to the Regulations

- June 9, 2008 – EPA published a final rule to make certain updates to the list of NAICS codes subject to reporting under TRI (<http://www.epa.gov/fedrgstr/EPA-TRI/2008/June/Day-09/tri12856.htm>).

How Can the Public Obtain TRI Information?

Extracts of TRI information can be obtained from several sources:

- Computer summaries of Utah TRI information or copies of original TRI submissions can be obtained by submitting a written request to:

Utah Division of Environmental Response and Remediation
168 North 1950 West, 1st Floor
P.O. Box 14840
Salt Lake City, Utah 84114-4840
Or email the request to eqdertier2@utah.gov

A customer may choose to have pages copied by a DERR employee at a cost of \$0.25 per single-sided page. Pages copied by the customer are \$0.05 per single-sided page with the first 10 pages free. Specialized computer summaries are available for a fee charged at an hourly rate. Most reports require less than one hour's time to create a specialized summary. Please call UDEQ (801-536-4100) for current hourly rates.

The EPA offers access to TRI data on the World Wide Web through the following websites:

- www.epa.gov/tri
- <http://www.epa.gov/tri/tridata/>

DATA CORRECTIONS

Significant changes are being implemented to the methods and techniques used in the Utah Data Management System (Utah DMS) to receive, manage and deliver TRI data. Beginning with RY2006, Utah initiated participation in the National Environment Information Exchange Network - State Data Exchange Network. The association enabled a partnership of technology executed through a Memorandum of Agreement (MOA) between EPA and DEQ implementing the mechanism through which EPA transmits TRI data electronically to Utah. Data submitted from facilities to EPA through the State Data Exchange are delivered directly from EPA to a Utah data server referenced in this document as the "Node." Beginning with RY2006, TRI data are now received exclusively by Utah through the State Data Exchange (SDX) system.

To meet this challenge and to ensure that efficiency is maximized and maintained DEQ began efforts to design and develop the features in the Utah DMS to meet the requirements of the SDX system. Several new key data-management tools were acquired by Utah in mid-November 2008. Prior to these upgrades the process of uploading data from the Utah Node into the Utah DMS was performed manually by internal resources. Processing issues were anticipated knowing the effort to improve the system would entail review and refinement, and these efforts will continue. Several unanticipated data issues were encountered while compiling this report. Topics associated with this transition from a manual to automated data upload mechanism are discussed below.

Gaps in the dataset prior to these recent efforts are acknowledged in this report with appropriate explanation where the issue may present a statistically significant impact on annual trends specific to the RY2006 – RY2007 reporting interval. Since SDX is now the exclusive source of TRI data to Utah it was practical to make internal comparisons to an independent EPA dataset of RY2006 data to confirm Utah DMS performance, and to ensure that the data managed and delivered remains accurate inside the limitations of current available resources.

Several differences between the EPA system and the Utah DMS were identified. EPA technology serves several data concepts not currently supported by the Utah DMS: (a) Duplicate submission of the same chemical or chemical compound under a given TRI Facility ID (TRIFID); (b) Multiple NAICS codes under a single TRIFID; and (c) duplicate reporting of chemicals and chemical compounds otherwise known as double-counting.

The combination of these items enables EPA to adjust certain data totals to account for duplicate-reporting or double-counting (see EPA TRI 2006 State Fact Sheet Utah paragraph 2 of the *Notes*, (<http://www.epa.gov/triexplorer/> see tab State Fact Sheet). Topics that yielded significant impacts to this year's data summary report are itemized below.

ITEM 1 – For RY2006 a shortage of 45.6 million pounds (primarily for Lead Compounds) was discovered in the data. This value impacts *Total On-site Releases to Land*, *Total On-site Releases*, and *Total On- and Off-site Releases*. This disparity is believed attributable to the electronic process used to load RY2006 data from the Utah Node into the Utah DMS. This issue affects the RY2006 data totals only.

ITEM 2 – For RY2007 overages of about 8.2 million pounds were discovered in RY2006 and RY2007 data. These overages are believed to be caused by internal Utah DMS compilation methods and are not due to errors in data reported, SDX system reporting or SDX data transmission. The overages impact *Total On-site Releases to Land*, and *Total On-site Releases*. DEQ determined that reports generated by the Utah DMS system currently tally releases to land and may not distinguish *On-site Releases to Land* and *Off-site Releases to Land* (transfers). This overage appears to be associated to the data related to a single facility and was recognized because the values are substantially higher and show a statistically significant change.

Lesser quantities may also be present in the dataset. However, they are not statistically apparent and for this reason are not readily identifiable. Corrections made to the methodology will serve to eliminate the error from all raw values queried when these statistics are compiled.

Agency review of the data indicates that the overages for chemicals were obvious in RY2007 totals compiled for Zinc Compounds (6.8 million lbs.), Manganese Compounds (0.62 million lbs.) and Lead Compounds (0.56 million lbs.). Amounts for additional chemicals subject to compilation manifest a total variance of about 8.2 million pounds. This issue impacted the data by serving to artificially inflate the values extracted from the DMS for RY2007 for *Total On-site Releases to Land*, and *Total On-site Releases*. Review of data files received via SDX show categorically that these amounts were reported as off-site transfers.

These variations were also found in the RY2006 data tallies. Values and the chemicals impacted are almost identical to those found in RY2007 data: Zinc Compounds (6.5 million lbs.); Manganese Compounds (0.70 million lbs.); and Lead Compounds (0.51 million lbs.). The variations in the amounts for other inorganic metals compound chemicals rendered a total variance of 7.9 million pounds in RY2006 data. This issue is currently under review to determine if the compilation method needs to be revised.

Summary values presented in certain tables and charts reporting *Total On-site to Land*, *Total On-site Releases*, and *Total On- and Off-site Releases* are higher than adjusted values presented in the text. This fluctuation is a function of the DMS compilation logic currently used. These tables and charts do not reflect adjusted values. Only the narrative presented in this report conveys adjusted summary release amounts.

ITEM 3 - EPA recently promulgated regulations to switch from SIC (Standard Industrial Classification) codes to NAICS (North American Industrial Classification System) codes effective for RY2008 and the July 1, 2009 submission deadline. Variations in the Utah DMS caused select facilities in the categories of Treatment, Storage and Disposal, and Coal-Fired Power Plant to be omitted from compilation results for these industrial sectors. These omissions impacted both the RY2006 and RY2007 data sets. DEQ addressed these issues and made corrections manually to the data so that the data produced accurate tables and charts presented in this report. DEQ plans to implement permanent solutions to this item beginning calendar year 2009 in order to maintain accuracy.

DC ITEM 4 –The term *double counting* is applied to release or transfer amounts of waste that have been reported two times.⁶ A brief scenario illustrates this term:

Facility-A located in Utah reports chemicals transferred off-site to a second Utah facility Facility-B for further management. Facility-B in processing the chemical wastes received from Facility-A for internment must then report the same chemical wastes as an on-site release.

Pursuant to the TRI program each facility is required to report. By the act of reporting, the same volume by weight of waste has been reported at least twice. The Utah DMS does not currently adjust for double counting. Summary statistics compiled by the Utah DMS tend to be higher than EPA statistical summaries. Analysis of results spanning prior years show that Utah data may be up to 14 percent higher than EPA totals.

DEQ maintains a goal to have this report prepared prior to publication of the federal EPA TRI Public Data Release. A limitation on resources has prevented DEQ from correcting these issues for this year.

In summary, the 45.6 million pound shortage discussed in ITEM 1 impacts the RY2006 data only. The 8 million pound overages discussed in ITEM 2 impact both RY2006 and RY2007 data summary results. The net impact realized by these itemized overages and shortages combined equates to a net shortage resulting in an under-reporting of summary totals in select tables and charts showing *Total On-site Releases to Land*, *Total On-site Releases*, and *Total On- and Off-site Releases*. Amounts for *Total On-site Releases to Land*, *Total On-site Releases* and *Total On- and Off-site Releases* were recalculated and used in the discussions presented in this report. Adjusted data is noted by footnote or in the text as needed.

⁶ A complete explanation of the term *double counting* may be found in the endnotes of EPA TRI State Fact Sheets.

Facility Overview

Number of Reporting Facilities

For calendar year 2007, 187 Utah facilities filed a total of 840 TRI form submissions. A total of 134 unique TRI-listed chemicals (or compounds) were reported which is a decrease from 142 unique chemicals (or compounds) reported in 2006. In comparison to last year the number of facilities that submitted under TRI decreased by 11 and the total number of program forms (Form R and Form A) reports decreased by 36.

Figure 1 shows the annual trend in the number of facilities and number of chemical reports. One-hundred thirty-four facilities, or 65% of all facilities that reported in Utah, are located along the Wasatch Front.⁷

Quantity of Utah TRI Submissions 1988-2007

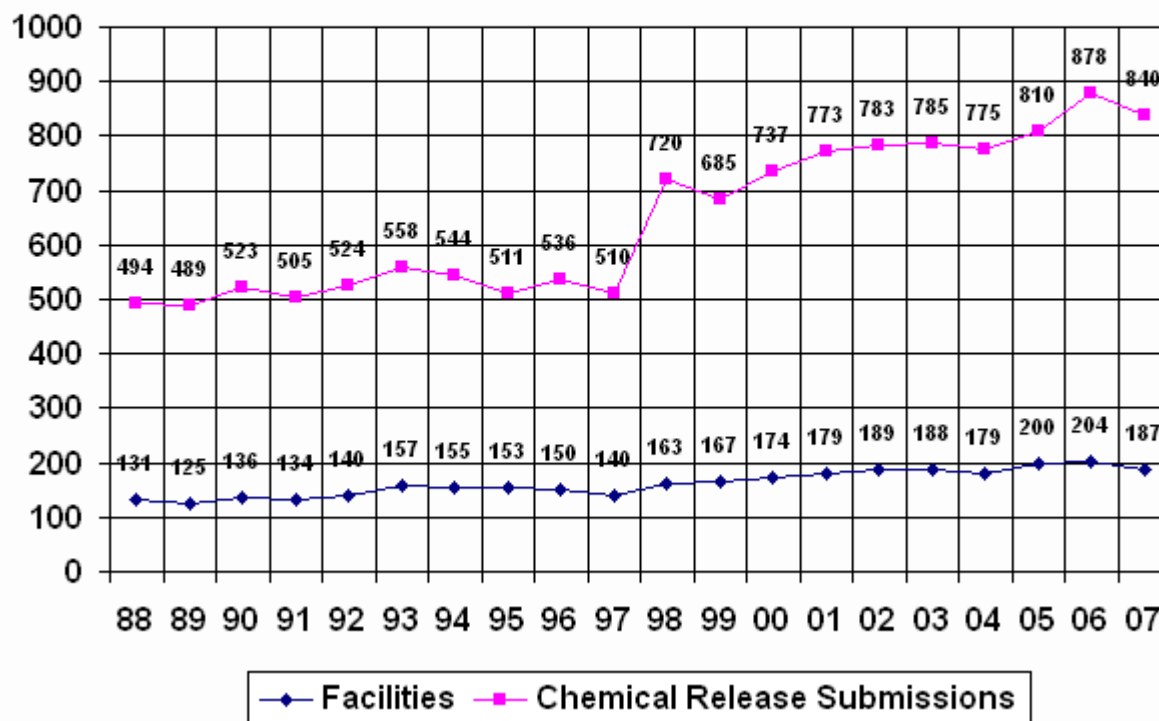


Figure 1

⁷ Wasatch Front is defined to include the Counties of Weber, Davis, Salt Lake and Utah.

FACILITY LOCATION

Each facility reports its latitude and longitude as part of the TRI submission. Figure 2 shows the geographic distribution of TRI sites across Utah. For purposes of reporting the Wasatch Front is comprised of Weber, Davis, Salt Lake and Utah Counties. Facilities along the Wasatch Front comprise 65 % of all facilities reporting in Utah.

Utah 2007 TRI Facility Locations & Wasatch Front

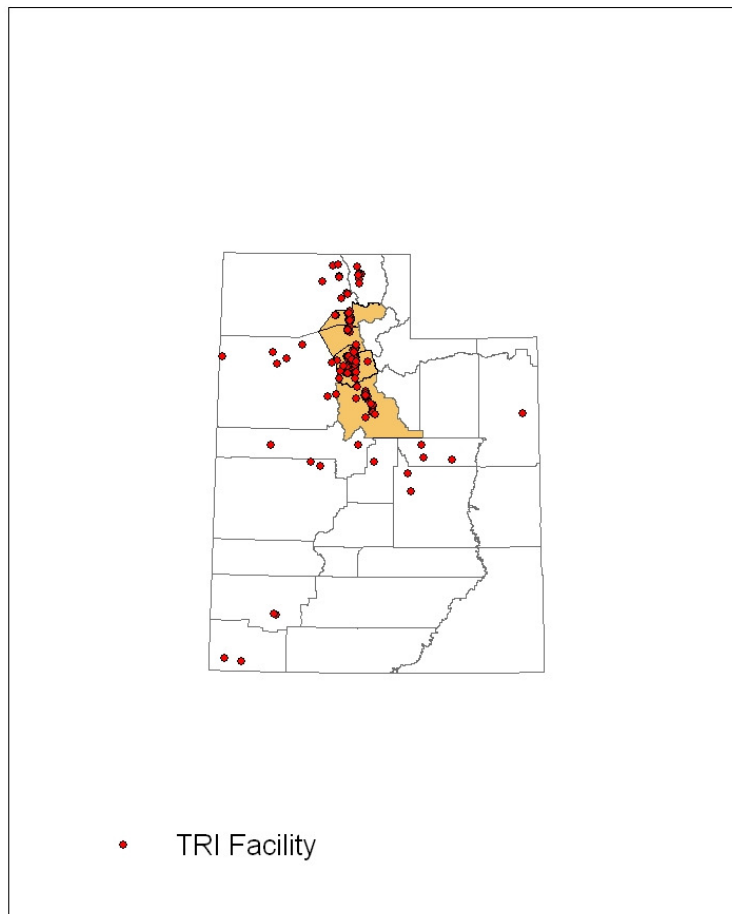


Figure 2

Figure 3 below shows the 2007 TRI reporting by industry sector category. The 187 facilities reporting were categorized into 8 industrial sectors based on facility NAICS (North American Industrial Classification System) code. Industrial sectors are identified in Figure 3. For 2007, with exception to the category of *Other* which captures the remaining commercial/industrial sectors not otherwise grouped, facilities reporting from the *Nonmetallic mineral product Manufacturing* sector represent the largest category with 24 facilities. Initial statistics returned by the Utah DMS to produce this chart depend on NAICS codes to categorize and produce this chart. The Utah DMS does not yet accommodate NAICS codes to the same technical level in which the codes are passed to the Utah Node. DEQ was able to modify appropriate data to ensure this chart reflects industrial sectors accurately.

2007 Utah TRI Facilities - Quantity Reporting By Industrial Sector

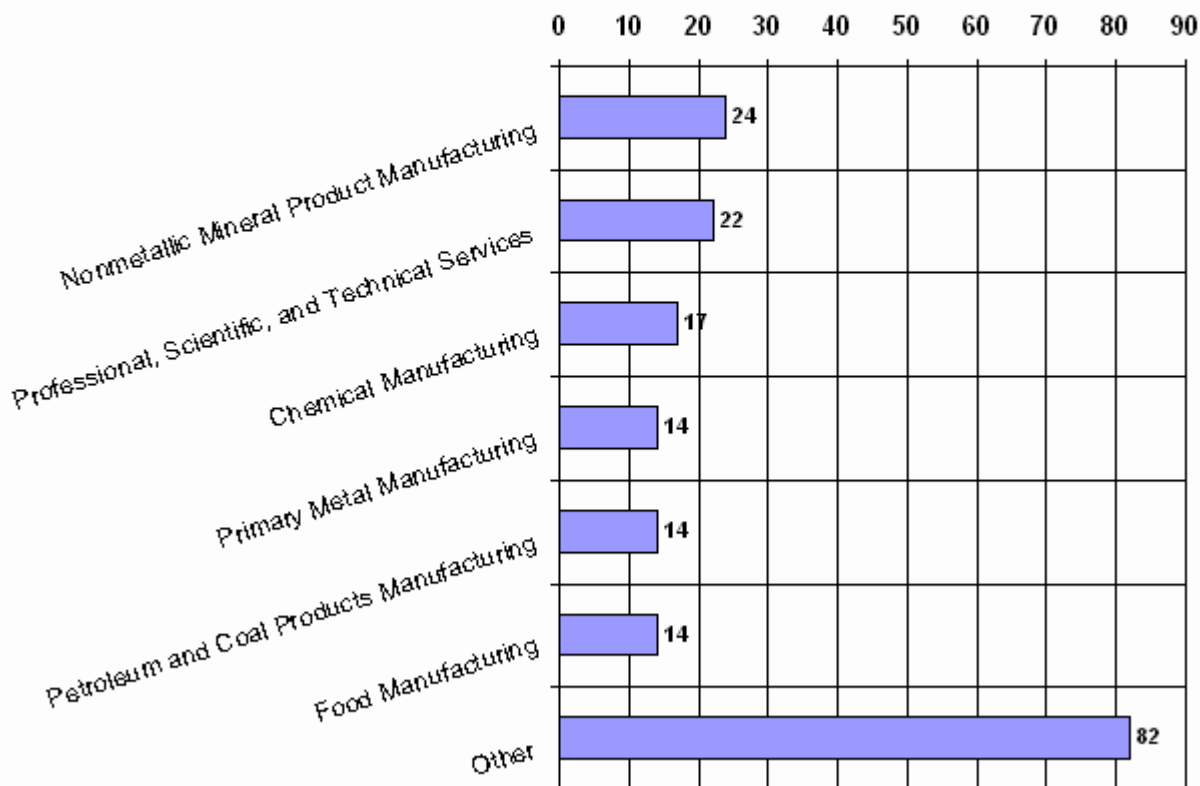


Figure 3

Total Releases

Figure 4 shows the trend for total releases in Utah beginning 1988 through 2007.

Utah TRI Total Releases (Millions of Pounds) 1988-2007

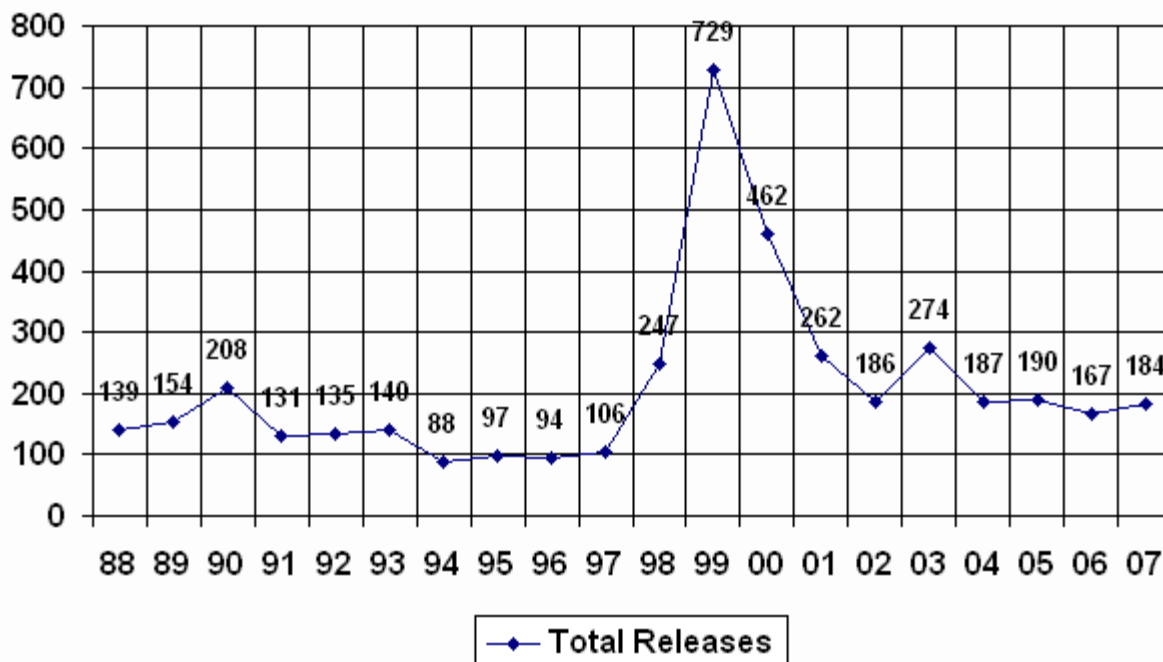


Figure 4

The RY2006 data point produced by the Utah DMS in this chart was impacted by ITEM 1 and ITEM 2 described in Data Corrections. Total Release amount reported for RY2006 is believed to be under reported by a net difference of approximately 38 million pounds (see Data Corrections). Similar statistics derived from an independent EPA TRI RY2006 dataset⁸ show that 201.7 million pounds may be a more reasonable amount. An internal examination of the Utah dataset revealed that several isolated data elements responsible for this anomaly may not be properly populated. Specifically, a value resident in the Utah DMS dataset for lead compounds was imported as 0.68 million pounds. A review of the raw data shows that a value of 46.2 million pounds should have been recorded. The shortage of 45.6 million pounds caused under-reporting of the Total Releases value.

ITEM 3 in the Data Corrections presented a discussion on an overage found related to a list of three compounds. An overage of 8.2 million pounds in RY2007, and 7.9 million pounds in RY2006 caused values high for *Total On-site Releases to Land*, and *Total On-site Releases* for both years. Over reporting is attributed to the compilation logic used to calculate these totals. Adjusted totals were used to calculate the categorical summaries presented in the narrative of the report.

⁸ Data acquired via custom query http://www.epa.gov/enviro/html/tris/form_r_download.html (Jan. 30, 2009).

EPA data for RY2006 that shows Total On- and Off-site Releases were 201.7 million pounds. By comparison, an internal review completed by DEQ using corrected totals indicate that the shortages and overages on the Total On- and Off-site Release amount returns a net value of 204.5 million pounds for RY2006 or a value that is 1.4% above of the value reported by EPA for RY2006. When considered in context of ITEM 4 these totals are within a range that is normally observed.

Release totals are typically described under two primary categories: (1) *Total On-Site Disposal or Other Releases*, and (2) *Total Off-Site Disposal or Other Releases*. These categories are further sub-divided as outlined below.

1. Total On-Site Disposal (or Other Releases) are sub-categorized as:
 - a. Total releases to air;
 - b. Total releases to land;
 - c. Total releases for TSD (treatment, storage, and disposal) facilities (as described by RCRA⁹);
 - d. Total releases for fossil fuel electric generation utilities;
 - e. Total releases to surface waters; and
 - f. Group sub-total.

2. Total Off-Site Disposal (or Other Releases including transfers to off-site facilities) are sub-categorized as:
 - a. Transfers to POTWs;
 - b. Other transfers off-site; and
 - c. Group sub-total.

These sub-categories are more informative with additional descriptive context: (1) for transfers of TRI-listed metals to municipal wastewater treatment plants (POTW), generally, metals pass untreated through conventional treatment plants and are discharged in the plant effluent; and (2) TRI chemicals transferred to off-site facilities and disposed at off-site facilities are regarded as being released to the environment. These quantities are reported both as a transfer and then as an on-site disposal. Data released under the federal Public Data Release describes and accounts for the duplication inherent to the latter point.

Total On- and Off-site Releases – Total releases reported by Utah facilities in report year 2007 were 184.6 million pounds. Total releases reported in 2006 displayed in Figure 4 show 167.1 million pounds. The RY2006 amount of 167.1 million pounds may not accurate. The data were evaluated and DEQ determined that a more representative amount is 201.7 million pounds. A discrepancy in the stored data was discovered while preparing this report as discussed in the Data Corrections section of this report. Total Releases reported under TRI decreased by 17.1 million showing a net decrease of 8.5%.

Distribution of total amounts reported relative among the primary categories *Total On-Site Disposal or Other Releases*, and *Total Off-Site Disposal or Other Releases* (includes transfers) is primarily reported in the on-site category. *Total On-site* releases were reported in the amount of

⁹ Resource Conservation and Recovery Act (1976).

168.4 million pounds while *Total Off-site Releases or Other disposals* were reported in the amount of 12.1 million pounds.

The most significant releases among *On-Site Disposal or Other Releases* are those reported as releases to land and air. Releases to land reported for 2007 totaled 159.7 million pounds comprising 86.5% of total releases in Utah. Total releases to air for the reporting year were 9.2 million pounds representative of about 5% of total releases.

Total Off-Site Transfers reported were 17.1 million pounds in RY2007. *Total off-site releases* were reported at 12.1 million pounds, with transfers to POTWs were slightly less than 1.2 million pounds. The TRI program maintains and compiles two distinct off-site statistical amounts, one each for (1) *total off-site releases*, and (2) *total off-site transfers*. Total off-site releases increased by 12.7% while total transfers to other off-site locations decreased by 24.9%.

Table 1 lists the top facilities for on-site and off-site releases in 2007 and includes facilities reporting equal to or greater than 1 million pounds. Kennecott Mine, Concentrators & Power Plant, Kennecott Smelter & Refinery facilities, and Nucor Steel were the top three contributing facilities to total reported releases in Utah.

TABLE 1
TOP FACILITIES
Total On-site and Off-site Releases
(Reporting equal to or greater than 1 million pounds)

Facility Name	Pounds/Year
1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	128,330,083
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	16,000,463
3 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION	8,222,913
4 US MAGNESIUM, LLC	4,575,801
5 CERROWIRE & CABLE CO.	2,876,592
6 ENVIROCARE OF UTAH, LLC.	2,646,559
7 CLEAN HARBORS GRASSY MOUNTAIN, LLC	2,642,497
8 ATK THIOKOL, PROMONTORY	2,030,816
9 PACIFICORP - HUNTINGTON PLANT	1,721,583
10 INTERMOUNTAIN POWER GENERATING STATION	1,536,461
11 BONANZA POWER PLANT	1,474,452
12 PACIFICORP HUNTER PLANT	1,267,401
13 PACIFIC STATES CAST IRON PIPE COMPANY	1,264,254
14 CLEAN HARBORS ARAGONITE, LLC.	1,151,553

Table 2 lists the top on-site and off-site chemical releases equal to or greater than one million pounds. Copper compounds, lead compounds, and zinc compounds constitute the chemicals released in greatest quantities in 2007.

TABLE 2
Top Chemicals - Total On-site and Off-site Chemical Releases
(Reported in an amount equal to or greater than 1 million pounds)

Chemical Name	Lbs/Year
1 COPPER COMPOUNDS	79,094,280
2 LEAD COMPOUNDS	59,554,724
3 ZINC COMPOUNDS	12,835,167
4 HYDROCHLORIC ACID	3,893,432
5 CHLORINE	3,583,594
6 BARIUM COMPOUNDS	3,447,681
7 COPPER	3,071,775
8 ARSENIC COMPOUNDS	2,890,989
9 NITRATE COMPOUNDS	2,379,157
10 CHROMIUM COMPOUNDS	1,768,645
11 MANGANESE COMPOUNDS	1,522,086
12 AMMONIA	1,358,187

Totals for on-site releases include releases to air, land, and water occurring on-site at the facility. Table 3 presents the top facilities reporting totals for on-site releases equal to or greater than one million pounds.

TABLE 3
Top Facilities - Total On-site Releases
(Equal to or greater than 1 million pounds)

Facility Name	Lbs/Year
1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	128,327,723
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	15,780,479
3 NUCOR STEEL - A DIVISION OF NUCOR CORPORATION	8,222,882
4 US MAGNESIUM, LLC	4,575,714
5 ENVIROCARE OF UTAH, LLC.	2,646,405
6 CLEAN HARBORS GRASSY MOUNTAIN, LLC	2,613,061
7 ATK THIOKOL, PROMONTORY	2,030,179
8 PACIFICORP - HUNTINGTON PLANT	1,682,271
9 INTERMOUNTAIN POWER GENERATING STATION	1,536,461
10 BONANZA POWER PLANT	1,474,453
11 PACIFIC STATES CAST IRON PIPE COMPANY	1,264,254

The listing for Nucor Steel is lined out because the value reported out by the Utah DMS of 8.2 million for Nucor Steel was adjusted. The value listed in the table reflects the overage described under ITEM 2 in the Data Corrections section. This discrepancy also impacts the Zinc Compound value in Table 4 and is also lined-out. Internal data review determined that both amounts required adjustment and were reduced by about 6.9 million pounds.

Table 4 lists the top 10 chemicals for on-site releases.

TABLE 4
Top Chemicals - Total On-site Chemical Releases

Chemical Name	Lbs/Year
1 COPPER COMPOUNDS	78,418,942
2 LEAD COMPOUNDS	59,337,312
3 ZINC COMPOUNDS	12,306,599
4 HYDROCHLORIC ACID	3,893,422
5 CHLORINE	3,583,594
6 BARIUM COMPOUNDS	3,410,589
7 ARSENIC COMPOUNDS	2,873,609
8 CHROMIUM COMPOUNDS	1,724,302
9 MANGANESE COMPOUNDS	1,521,917
10 NITRATE COMPOUNDS	1,406,723
11 AMMONIA	1,194,320

The differences are not great between totals presented in Table 1 Total Releases (on-site and off-site), and Table 3 total releases on-site. The differences between these two tables are indicative of metals released from POTWs and TRI chemicals transferred off-site for disposal. The reader may infer that the combined volume of wastes transferred to POTWs plus wastes transferred off-site for disposal are relatively low in comparison to volumes that are released on-site.

RELEASES TO AIR

Figure 5 illustrates the trend of total releases to air for years 1988 to 2007. In 2007 releases to air were 9.9 million pounds. Total release to air decreased by 5.9% from 2006.

Utah TRI Releases To Air (Millions of Pounds) 1988-2007

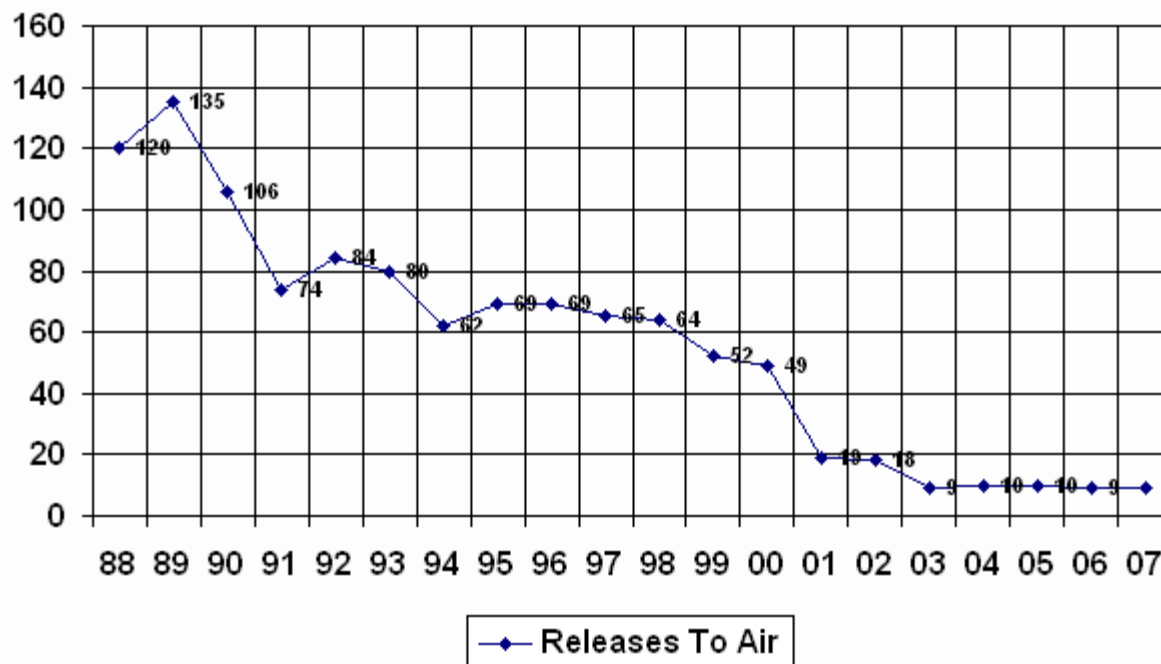


Figure 5

Table 5 provides the top 10 total releases to air by facility.

TABLE 5
Top 10 Facilities - Total Releases to Air

Facility Name	Lbs/Year
1 US MAGNESIUM, LLC	4,574,285
2 ATK THIOKOL, PROMONTORY	1,822,055
3 PACIFICORP - CARBON PLANT	582,694
4 PACIFICORP - HUNTINGTON PLANT	351,352
5 PACIFICORP - HUNTER PLANT	192,778
6 BRUSH RESOURCES INC, MILL	181,564
7 INTERMOUNTAIN POWER GENERATING STATION	163,382
8 TESORO REFINING AND MARKETING COMPANY	140,942
9 KENNECOTT UTAH COPPER SMELTER & REFINERY	137,347
10 HEXCEL CORPORATION	112,191

U.S. Magnesium, ATK Launch Systems-Promontory, and the Pacificorp-Huntington Plant facilities were the primary contributors to total releases to air in 2007. U.S. Magnesium reported a total release to air of 4.6 million pounds. ATK Launch Systems-Promontory reported a total release to air of 1.8 million pounds. Chlorine comprises 41.9% of the total reported amount

released to air and hydrochloric acid (aerosols only) comprises 38.6% of the total reported release amount to air.

Table 6 shows the top 10 releases by chemical amount to air.

TABLE 6
Top 10 Chemicals - Total Releases to Air

Chemical Name	Lbs/Year
1 HYDROCHLORIC ACID	3,893,422
2 CHLORINE	3,583,594
3 AMMONIA	388,941
4 HYDROFLUORIC ACID	379,245
5 SULFURIC ACID	166,185
6 1,1-DICHLORO-1-FLUOROETHANE	105,021
7 TOLUENE	98,847
8 HEXANE	92,171
9 COPPER COMPOUNDS	78,519
10 XYLENE (MIXED)	67,040

Facilities reporting a total 3.9 million pounds of hydrochloric acid (aerosols only) include industry sectors: (a) Aerospace Product and Parts Manufacturing 1.8 million pounds, (b) Nonferrous Metal (except Aluminum) Production and Processing 1.0 million pounds, and (c) Fossil Fuel Electric Power Generation 951,000 pounds. These three sectors comprise 96.6% of the total amount of hydrochloric acid release reported to air for 2007.

U.S. Magnesium

U.S. Magnesium (USM) is located along the southwest side of the Great Salt Lake in Tooele County. USM produces magnesium metal by extraction of magnesium chloride from brines drawn from the lake. Chlorine and hydrochloric acid are produced as by-products of the magnesium extraction process. In 2003 USM implemented process upgrades to improve chlorine recovery and reduce emissions.

Figure 6 shows the annual trend for releases to air reported by USM.

**US MAGNESIUM, LLC
TRI Releases to Air
(Millions of Pounds)
1988-2007**

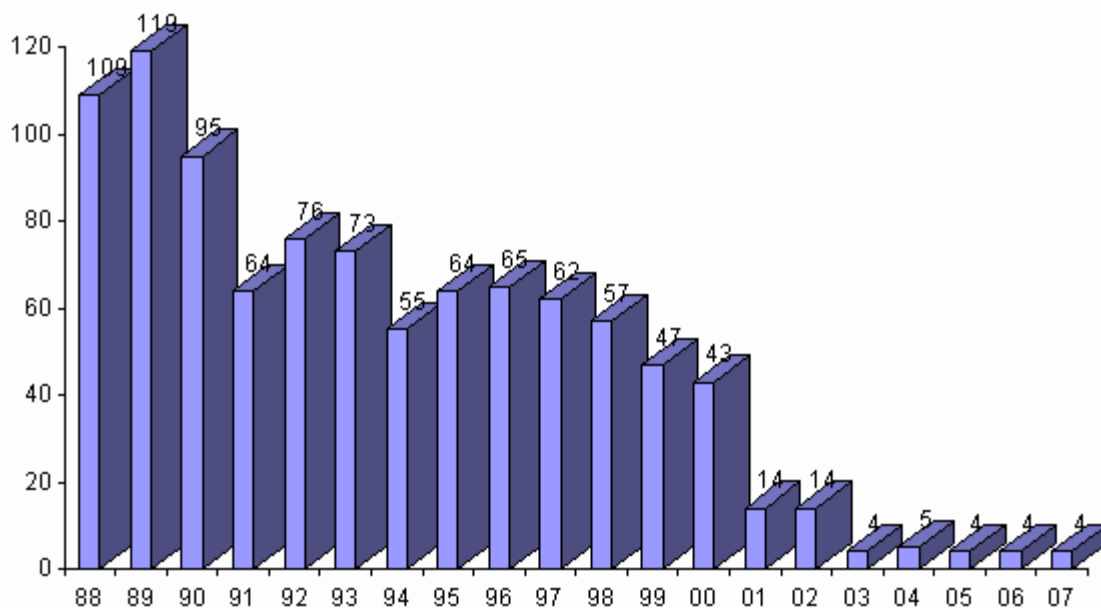


Figure 6

USM reported total releases to air of 4.6 million pounds in 2007 for a 6.1% increase above the 4.4 million pounds reported in 2006. The bulk of releases to air by USM consist of chlorine and hydrochloric acid (aerosol forms only).

USM calculates release quantities using stack test results and production hours. In report year 2007 total chlorine released to air was just under 3.6 million pounds showing an increase by 7.6%. Chlorine releases amounts decreased slightly by 1.4%. For hydrochloric acid (aerosol forms only), USM reported a release slightly greater than 1.0 million pounds in 2007 showing a decrease from 2006 of 1.4%. USM's national ranking among facility releases to air has dropped significantly in recent years. In RY 2000 USM was ranked #1 for total releases to air. In subsequent years, and as the result of capital improvements to recovery systems, USM has quickly decreased total emissions to air as seen in Figure 6. Based on release to air totals (fugitive plus point source emissions) USM ranked 50th in national ranking for RY2006.¹⁰

¹⁰ Query of EPA's web-based TRI program application TRI Explorer executed 12-Feb-09. Query parameters chosen: Reports by Facility; Year of Data: "2006"; Geographic Location: "All of United States"; All Chemicals; Industry: "All Industries." Data were imported in to MS Excel (v. 2003). One column was inserted titled *Total Air* and assigned a formula to sum the tow existing release to air data fields *On-site Fugitive Air* and *On-site Point Source Air*. Facility records were then sorted in descending order on *Total Air* to determine the national rank.

ATK Launch Systems – Promontory

For 2007 ATK reported total releases to air in the amount of 1.8 million pounds. Hydrochloric acid (aerosol forms only) accounts for 98.9% of the total amount released to air by ATK. The release of hydrochloric acid (aerosol forms only) is attributed to open burn/open detonation (OBOD) associated with static motor testing.¹¹

RELEASES TO LAND

Releases to land include: (1) landfills designed to receive solid waste; (2) surface impoundments for liquid waste; (3) land treatment, incorporating the waste into the soil; or (4) other disposal, such as placing material containing TRI chemicals on land.

Table 7 shows the top 10 facility total releases to land.

TABLE 7
Top 10 Facilities - Total Releases to Land

Facility Name	Lbs/Year
1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	128,310,110
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	15,857,190
3 NUCOR STEEL – A DIVISION OF NUCOR CORPORATION	8,212,794
4 ENVIROCARE OF UTAH, LLC.	2,646,557
5 CLEAN HARBORS GRASSY MOUNTAIN, LLC	2,612,986
6 BONANZA POWER PLANT	1,411,284
7 INTERMOUNTAIN POWER GENERATING STATION	1,373,079
8 PACIFICORP - HUNTINGTON PLANT	1,330,915
9 PACIFIC STATES CAST IRON PIPE COMPANY	1,250,431
10 CLEAN HARBORS ARAGONITE, LLC.	1,149,146
11 WESTERN ZIRCONIUM	800,589

The overage described under ITEM 2 in the Data Corrections reflects in the overage value reported for Nucor Steel in Table 7. The adjusted value for Nucor Steel is 1,177 pounds which drops it from standing in Table 7. Virtually the entire amount of 8.2 million pounds is categorically a transfer off-site.

TRI chemical releases to land comprised 86.5% of total combined on-site and off-site releases reported in 2007. Releases to land decreased 11.9% from 181.3 million pounds in 2006 to 159.7 million pounds in 2007.

In RY2007 9 of 10 facilities (Table 7) each reported release to land amounts in excess of one million pounds. The aggregate sum for releases to land reported by these facilities represents about 97.8% of the total releases to land, and 95.6% of total releases on-site.

Table 8 identifies the top 10 chemicals released to land in 2007.

¹¹ Communication with ATK Launch Systems – Promontory (February 4, 2008).

TABLE 8
Top 10 Chemicals - Total Releases to Land

Chemical Name	Lbs/Year
1 COPPER COMPOUNDS	78,501,503
2 LEAD COMPOUNDS	59,438,610
3 ZINC COMPOUNDS	12,333,164
4 BARIUM COMPOUNDS	3,441,328
5 ARSENIC COMPOUNDS	2,888,255
6 CHROMIUM COMPOUNDS	1,750,453
7 MANGANESE COMPOUNDS	1,512,351
8 NITRATE COMPOUNDS	1,379,859
9 NICKEL COMPOUNDS	833,216
10 AMMONIA	804,629
11 ANTIMONY COMPOUNDS	667,442

In reference to specific chemicals and/or chemical compounds reported released to land in 2007, copper compounds, lead compounds, and zinc compounds comprise the largest percentage of chemicals released to land. In 2007 the reported changes for the amounts of (1) copper compounds decreased from 106.3 million pounds to 78.5 million pounds; (2) lead compounds increased from 51.8 million pounds to 59.4 million pounds; and (3) zinc compounds decreased from 13.5 million pounds to 5.3 million pounds.

For releases to land Kennecott Utah Copper Mine, Concentrators & Power Plant, Kennecott Utah Copper Smelter & Refinery, reported amounts of copper compounds and lead compounds greater than one million pounds. Energy Solutions is the only other facility that reported Lead Compounds in an amount greater than one million pounds. All other compounds reported under the Release to Land category were in quantities less than one million pounds.

Nucor Steel reported zinc compounds in an amount of 6.8 million pounds. The Utah DMS report shows that this amount was reported out under *Total On-site Releases to Land*, *Total On-site Releases* and as off-site transfers, where the latter category is summed in to *Total On- and Off-site Releases*.

This data element was incorrectly categorized during statistical compilation by the Utah DMS. The discrepancy was recognized in the on-site and off-site combined statistic for zinc compounds because it is the only statistically significant amount reported as an on-site release that should have been compiled categorically as strictly an off-site amount. For this reason the data are indicative that the total presented for zinc compounds released to land reported out by the Utah DMS is an overage of approximately 8.2 million pounds (ITEM 2 under Data Corrections).

Five additional metals compounds make up the list of chemicals released in greatest abundance. Presented in descending order by amounts reported, these chemicals are: barium compounds, arsenic compounds, chromium compounds, manganese compounds; and nickel compounds.

Mining

Four mining facilities reported under the TRI program for reporting year 2007:

- Kennecott Utah Copper Mine, Concentrators & Power Plant
- Brush Resources, Inc., Mill
- Kennecott Barney's Canyon Mining Company
- Lisbon Valley Mining Company

Kennecott Facilities

Kennecott Utah Copper (KUC) operates through three facilities:

- (1) Barney's Canyon Mine (Barney's);
- (2) Mine, Concentrators & Power Plant (MCP); and
- (3) Smelter & Refinery (S&R).

Primary operations for each facility respectively are gold ore mining, copper ore and nickel ore mining, and smelting and refining. The MCP is one of the world's largest open pit mines. KUC conducts extensive mining, milling, smelting, and refining operations in western Salt Lake County. The MCP facility extracts millions of tons of overburden, waste rock, and ore during annual operations. Ore is concentrated and shipped by pipeline to the smelter, which produces copper and gold. Sulfuric acid is also produced during the process.

Releases to air represent the highest volume of release by media category reported by the Barney's facility. However, releases to air contribute only a minor quantity relative to overall volumes across all media (air, land, water) reported by KUC in its entirety. The MCP and S&R facilities contribute the bulk of releases to air and land, therefore, most discussion presented in this section represents data reported by the latter two.

For reporting year 2007, the bulk of total releases to land reported by KUC facilities were within a 1×10^6 order of magnitude range. Releases were comprised primarily by compounds of arsenic, copper, lead, and zinc. Amounts of chromium, manganese, and nickel were reported in amounts one magnitude lower (1×10^5).

For RY2007 the MCP and S&R facilities reported total releases to land of 128.3 and 15.9 million pounds respectively for a sum total of 144.2 million pounds. This amount accounts for 90.3% of total amount of releases reported to land in Utah. The KUC facilities reported 165 million pounds of combined releases to land in 2006 showing a 12.6% decrease in releases to land in 2007.¹²

¹² Number was adjusted from 119.5 million lbs., see ITEM 1 and ITEM 2 under Data Corrections.

Kennecott Copper Mine Concentrators and Power Plant - Figure 7 shows the annual trend for releases to land from the KUC- Mine facility.

**KENNECOTT UTAH COPPER MINE,
CONCENTRATORS, & POWER PLANT
TRI Releases to Land
(Millions of Pounds)
1998-2007**

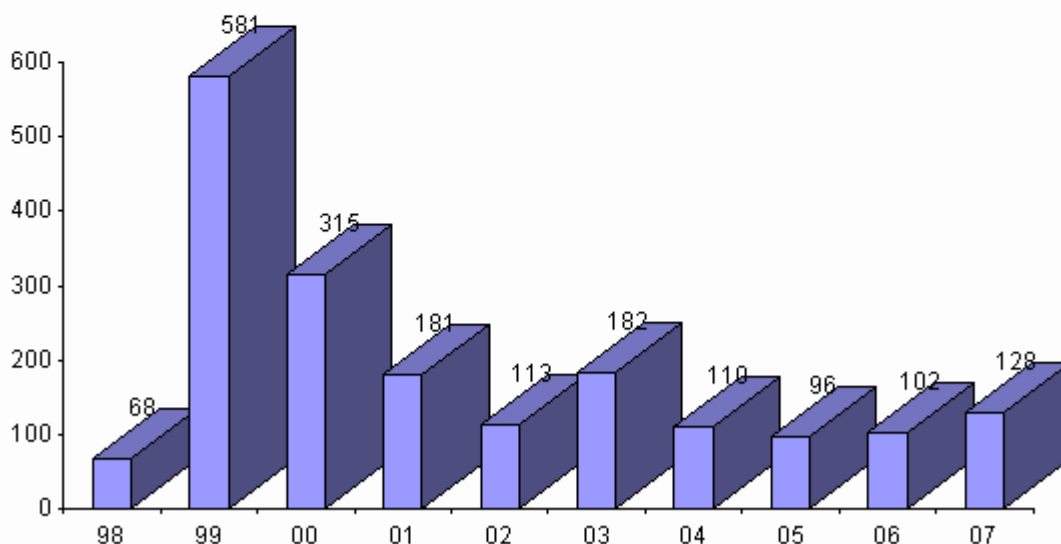


Figure 7

Chemical groups representing the highest total releases to land in 2007 from the KUC-Mine reported are copper compounds (73.1 million pounds) and lead compounds (54.6 million pounds). The amount reported for these two chemical groups make up 99.3% of all releases to land by this facility.

The total releases to land reported by KUC-MCPP decreased by 13.1% going from 148.0 million pounds¹³ in 2006 to 128.6 million pounds in 2007. Naturally occurring fluctuations in the concentration of TRI constituents in the overburden removed and ore mined are also observed on an annual cycle and cause variations in the data.

¹³ Number was adjusted from 102.5 million lbs., see DC ITEM 1 and DC ITEM 2 under Data Corrections.

Kennecott Copper Smelter and Refinery – Figure 8 shows the trend in releases to land originating from the KUC-Smelter facility.

**KENNECOTT UTAH COPPER SMELTER &
REFINERY
TRI Releases to Land
(Millions of Pounds)
1988-2007**

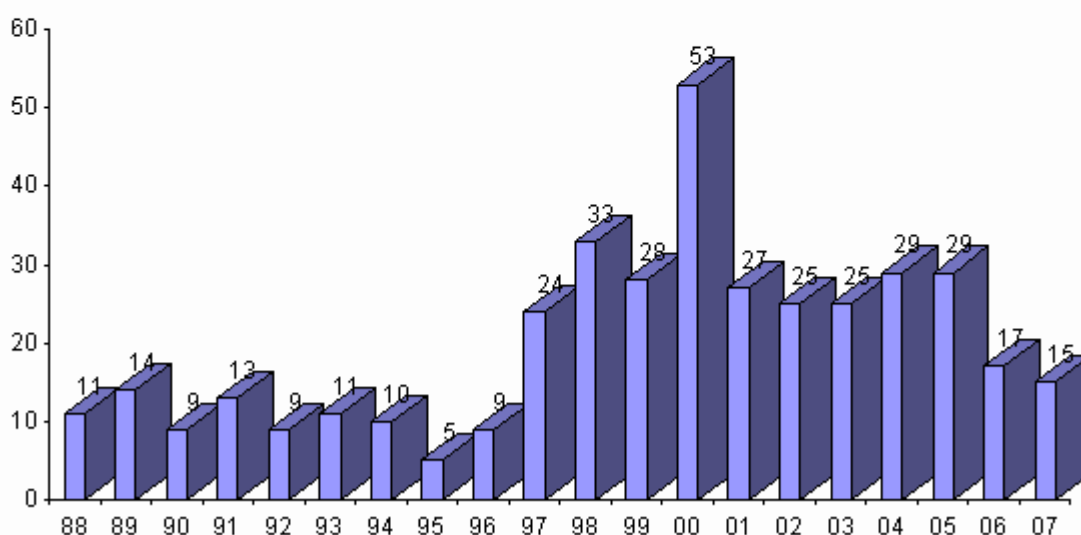


Figure 8

KUC-Smelter files a separate TRI report apart from the KUC-Mine facility. The two facilities have been filing separately since 1987. Releases to land reported by the Smelter decreased by 8.2% from 17.0 million pounds in 2006 to 15.6 million pounds reported in 2007. It is normal to observe fluctuations in the natural concentration of all mineral constituents as different portions of the ore body are being mined.¹⁴

Chemical groups representing the highest total releases to land in 2007 from the Smelter (above 1 million pounds) are arsenic compounds (2.7 million pounds), copper compounds (4.5 million pounds), lead compounds (2.7 million pounds), and zinc compounds (4.0 million pounds).

Waste Disposal Facilities

Waste disposal facilities that treat, store, and/or dispose of hazardous waste are subject to EPCRA Section 313 reporting requirements. Subtitle C of the Resource Conservation and

¹⁴ Communication with Kennecott 2/26/08.

Recovery Act and the Utah Solid and Hazardous Waste Act provide regulations for these facilities. The EPA TRI definition of a *release* to land includes the placement of TRI chemicals into landfills, including landfills specifically constructed under requirements of RCRA and Utah Law to contain the waste inside the landfill and prevent a release outside the landfill area.

Facilities reporting releases to land in this category for 2007 include:

- Clean Harbors Aragonite, LLC
- Clean Harbors Grassy Mountain, LLC
- Energy Solutions of Utah, LLC

Table 9 shows the amounts released to land for each facility respectively in 2007.

TABLE 9
Waste Disposal Facility Releases to Land

<u>Facility Name</u>	<u>Lbs/Year</u>
1 ENVIROCARE OF UTAH, LLC.	2,646,557
2 CLEAN HARBORS GRASSY MOUNTAIN, LLC	2,612,986
3 CLEAN HARBORS ARAGONITE, LLC.	1,149,146

Virtually 100% of the releases reported by these facilities were reported as releases to land.

Table 10 lists the top 10 TRI chemical totals released to land from waste disposal facilities. Releases to land are comprised of metals compounds. Compounds of lead, chromium and copper with lesser amounts of polychlorinated biphenyls asbestos and of a variety of other metals, and metals compounds were reported in RY2007.

TABLE 10
Top 10 Chemicals - Releases to Land
From Waste Disposal Facilities

<u>Chemical Name</u>	<u>Lbs/Year</u>
1 LEAD COMPOUNDS	1,482,666
2 CHROMIUM COMPOUNDS	814,030
3 COPPER COMPOUNDS	508,018
4 POLYCHLORINATED BIPHENYLS (PCBS)	387,931
5 LEAD	354,990
6 ASBESTOS	326,181
7 ZINC COMPOUNDS	324,650
8 CADMIUM	284,105
9 CHROMIUM	254,837
10 NICKEL COMPOUNDS	227,793

**CLEAN HARBORS GRASSY MOUNTAIN, LLC
TRI Releases to Land
(Millions of Pounds)
1998-2007**

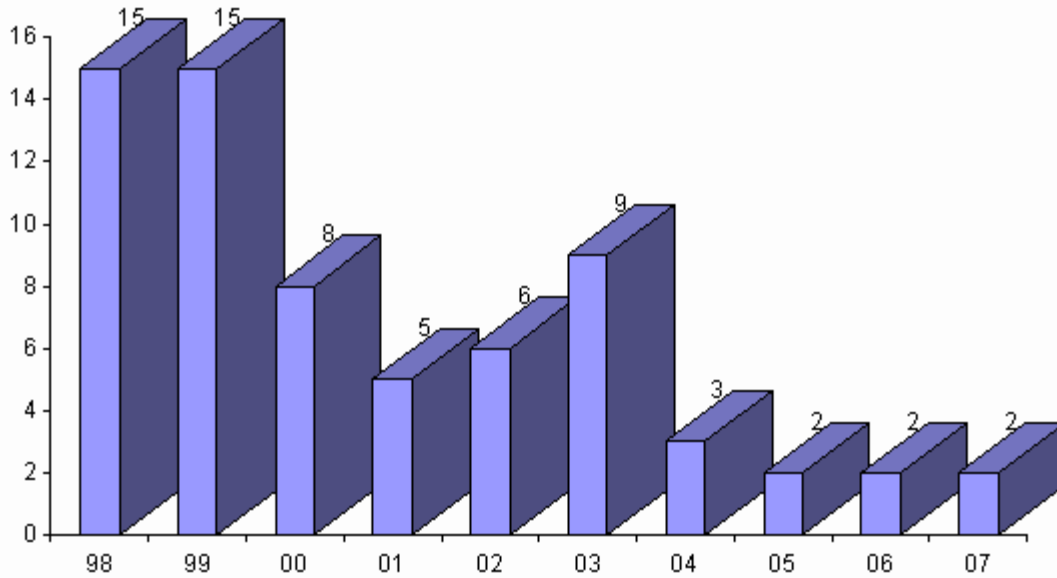


Figure 9

Figure 9 shows the trend of releases to land reported by the Clean Harbors Grassy Mountain facility. Releases to land reported by Grassy Mountain decreased by 8.7% from 2.8 million pounds reported in 2006 to 2.6 million pounds in 2007.

**ENVIROCARE OF UTAH, LLC.
TRI Releases to Land
(Millions of Pounds)
1998-2007**

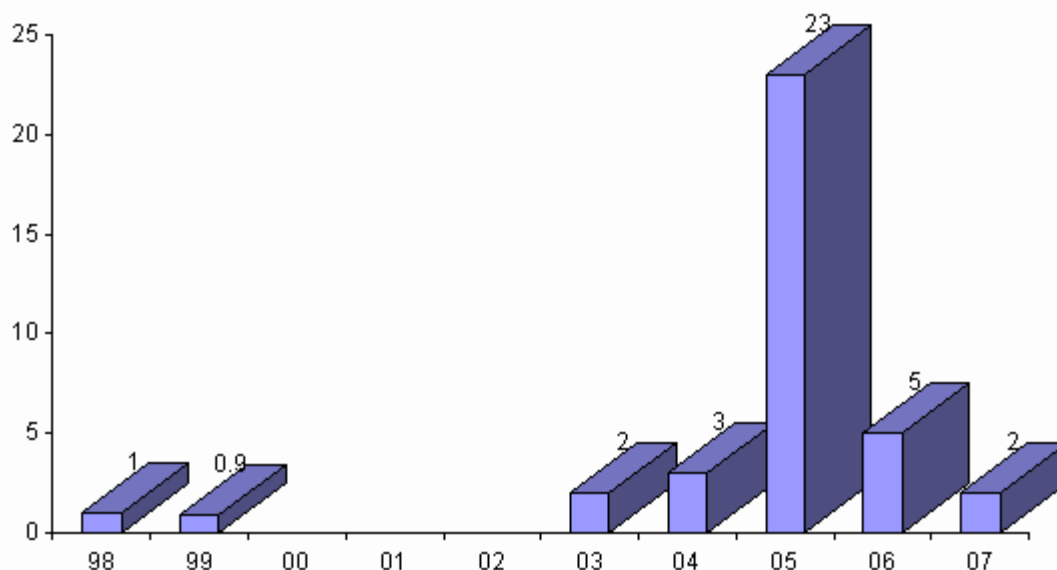


Figure 10

Figure 10 shows the trend for releases to land reported by Energy Solutions (formerly known as Envirocare). This facility reported releases to land of 2.6 million pounds in 2007 and 5.2 million pounds in 2006 to show a 48.9% decrease in total releases to land.

Releases to land by the facility comprised of chromium compounds (0.6 million lbs.), copper compounds (0.4 million pounds) and lead compounds (1.1 million lbs.). Remaining amounts reported consist of nickel compounds, zinc compounds, and a variety of asbestos, other metals and metals compounds and polychlorinated biphenyls.

Electric Utilities

Electric utilities that burn fossil fuels for electric energy production have been required to submit TRI reports since 1998. Table 11 shows electric utility facilities reporting in 2007.

TABLE 11
Coal-Fired Electric Utility Releases to Land by Facility

Facility Name	Lbs/Year
1 BONANZA POWER PLANT	1,411,284
2 INTERMOUNTAIN POWER GENERATING STATION	1,373,079
3 PACIFICORP - HUNTINGTON PLANT	1,330,915
4 PACIFICORP HUNTER PLANT	781,196
5 PACIFICORP - CARBON PLANT	105,266
6 SUNNYSIDE COGENERATION ASSOCIATES	15,571

Releases to land reported by fossil fuel electric utilities totaled 5.0 million pounds in 2007. Releases to land were 5.1 million pounds¹⁵ in RY2006 representing a 1.7% decrease.

Table 12 below provides the list of chemicals released to land by the coal-fired electric utility sector.

TABLE 12
Top Ten Chemical Releases to Land
From Coal-Fired Electric Utilities

Chemical Name	Lbs/Year
1 BARIUM COMPOUNDS	3,342,593
2 MANGANESE COMPOUNDS	391,564
3 CHROMIUM COMPOUNDS	359,150
4 ZINC COMPOUNDS	200,002
5 VANADIUM COMPOUNDS	165,308
6 COPPER COMPOUNDS	160,401
7 LEAD COMPOUNDS	127,741
8 NICKEL COMPOUNDS	116,695
9 ARSENIC COMPOUNDS	73,000
10 ANTIMONY COMPOUNDS	24,300

RELEASES TO SURFACE WATER

TRI-reported releases to surface water in Utah are a small percentage of total releases reported under TRI. Since only a small percentage of industries in Utah are required to submit TRI reports, this report identifies only a portion of the total chemical discharges to surface water bodies. However, in addition to TRI reports, many facilities are also required to submit discharge monitoring reports to the Utah Division of Water Quality which provide additional information on chemical concentrations and chemical amounts released to surface water.

In 2007, facilities reporting TRI chemical releases to surface waters reported a total of 94,400 pounds. Releases decreased by 6.3% from the 100,700 pounds reported in 2006. Table 13 provides the list of the top 3 facilities that released TRI chemicals to surface waters for this reporting year. The amount released by each subsequent facility is 130 lbs. or less.

¹⁵ Number was adjusted from 3.2 million lbs., see DC ITEM 3 under Data Corrections.

TABLE 13
Top 3 Facility Releases to Surface Water

Facility Name	Lbs/Year
1 CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY	83,062
2 KENNECOTT UTAH COPPER SMELTER & REFINERY	5,926
3 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	4,971

Table 14 provides the top 10 chemicals released to surface water in 2007.

TABLE 14
Top 10 - Chemical Releases to Surface Water

Chemical Name	Lbs/Year
1 NITRATE COMPOUNDS	82,005
2 XYLENE (MIXED)	1,200
3 ZINC COMPOUNDS	1,073
4 CHROMIUM COMPOUNDS	1,003
5 SILVER COMPOUNDS	1,000
6 VANADIUM COMPOUNDS	1,000
7 MANGANESE COMPOUNDS	1,000
8 THALLIUM COMPOUNDS	1,000
9 ANTIMONY COMPOUNDS	1,000
10 NICKEL COMPOUNDS	990

Releases to surface waters reported by Chevron Products Company comprise 88.0% of total releases to surface waters. Chevron reported 81,000 pounds of nitrate compounds or 98% of the total nitrates releases. Kennecott facilities, KUC Mine, Concentrators and Power Plant, and KUC Smelter and Refinery reported slightly less than 5,000 pounds (5.3%) and slightly over 5,900 pounds (6.3%) respectively of the total releases to surface waters. Nitrate compounds comprised 86.9% of the total releases to surface waters for this reporting year.

TRANSFERS TO PUBLICLY OWNED TREATMENT WORKS

POTWs are publicly owned wastewater treatment plants designed to treat sanitary sewage. They may also receive industrial wastewater. TRI “transfers to POTWs” identify the annual total amount of TRI chemicals discharged to POTW facilities.

Total releases to POTWs decreased by 8.3% from 1.3 million pounds in 2006 to 1.2 million pounds in 2007.

Table 15 identifies the top 10 facilities that released chemicals to POTWs during 2007.

TABLE 15
Top 10 - Facility Transfers to POTWs

Facility Name	Lbs/Year
1 EASTON TECHNICAL PRODUCTS	164,037
2 TYCO PRINTED CIRCUIT GROUP, LP ., LOGAN DIVISION	138,517
3 FUTURA INDUSTRIES	138,267

4	DANNON COMPANY, THE	124,090
5	JOHNSON MATTHEY	98,204
6	COMPEQ INTERNATIONAL	89,366
7	FAIRCHILD SEMICONDUCTOR	72,522
8	NESTLE USA - PREPARED FOODS DIVISION, INC.	71,743
9	SMITHS FOOD & DRUG DAIRY DIVISION OF KROGER CORPORATION	55,391
10	MICRON TECHNOLOGY, INC. - LEHI DIVISION	51,000

Table 16 lists top chemical transfers to POTWs during 2007. Nitrate compounds account for 75.1% of all releases to POTWs while ammonia accounts for 8.4% of all releases to POTWs for the year.

TABLE 16
Top 10 - Chemicals Transferred to POTWs

Chemical Name	Lbs/Year
1 NITRATE COMPOUNDS	893,035
2 AMMONIA	100,009
3 NITRIC ACID	83,130
4 GLYCOL ETHERS	68,774
5 XYLENE (MIXED)	13,894
6 TOLUENE	12,390
7 BENZENE	9,087.30
8 1,2,4-TRIMETHYLBENZENE	1,795
9 ETHYLBENZENE	1,064
10 HEXANE	750

TRI-reported releases to POTWs do not include information concerning the rate of release or concentration of chemicals in the release. However, state and federal law requires industrial facilities exceeding federally established chemical concentrations in wastewater to operate industrial pretreatment equipment to reduce such concentrations below harmful levels before discharging to the POTWs.

UTAH FACILITY TRANSFERS TO OTHER OFF-SITE LOCATIONS

Transfers to “other off-site” locations are transfers of TRI chemicals to facilities other than POTWs. Often these facilities include chemical recyclers and waste disposal sites. If the chemical is disposed of at these facilities, it is considered a release to the environment. The material transferred may or may not be classified a “hazardous waste”, but it contains a listed TRI chemical.

Table 17 lists the top 10 facilities that transferred chemicals to off-site locations in 2007. The total amount of TRI chemicals transferred off-site decreased by 24.9% from 22.8 million pounds in 2006 to 17.1 million pounds in 2007.

TABLE 17
Top 10 Facilities Transferring Chemicals Off-site

Facility Name	Lbs/Year
1 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION	8,211,649
2 CERROWIRE & CABLE CO.	2,876,570
3 CLEAN HARBORS ARAGONITE, LLC.	1,149,757
4 THATCHER COMPANY	607,665
5 HEXCEL CORPORATION	418,182
6 PACIFICORP HUNTER PLANT	293,536
7 UNIVERSAL INDUSTRIAL SALES INC	262,638
8 MICRON TECHNOLOGY, INC. - LEHI DIVISION	242,744
9 KENNECOTT UTAH COPPER SMELTER & REFINERY	219,984
10 ST. GEORGE STEEL FABRICATION, INC.	210,362

Transfers reported from the top three facilities listed in Table 17 comprise 71.5% of the entire amount of waste transferred in 2007.

Table 18 lists the top 10 chemicals transferred off-site. As indicated, zinc compounds, copper, and lead compounds comprise the bulk (66.7%) of the chemicals transferred to off-site facilities during 2007.

TABLE 18
Top 10 Chemicals Transferred to Off-site Facilities

Chemical Name	Lbs/Year
1 ZINC COMPOUNDS	7,446,856
2 COPPER	2,925,961
3 LEAD COMPOUNDS	1,050,356
4 NITRATE COMPOUNDS	870,283
5 COPPER COMPOUNDS	851,337
6 MANGANESE COMPOUNDS	638,964
7 CHROMIUM	379,298
8 CHROMIUM COMPOUNDS	286,450
9 NICKEL	251,990
10 HYDROFLUORIC ACID	223,230

Figure 11

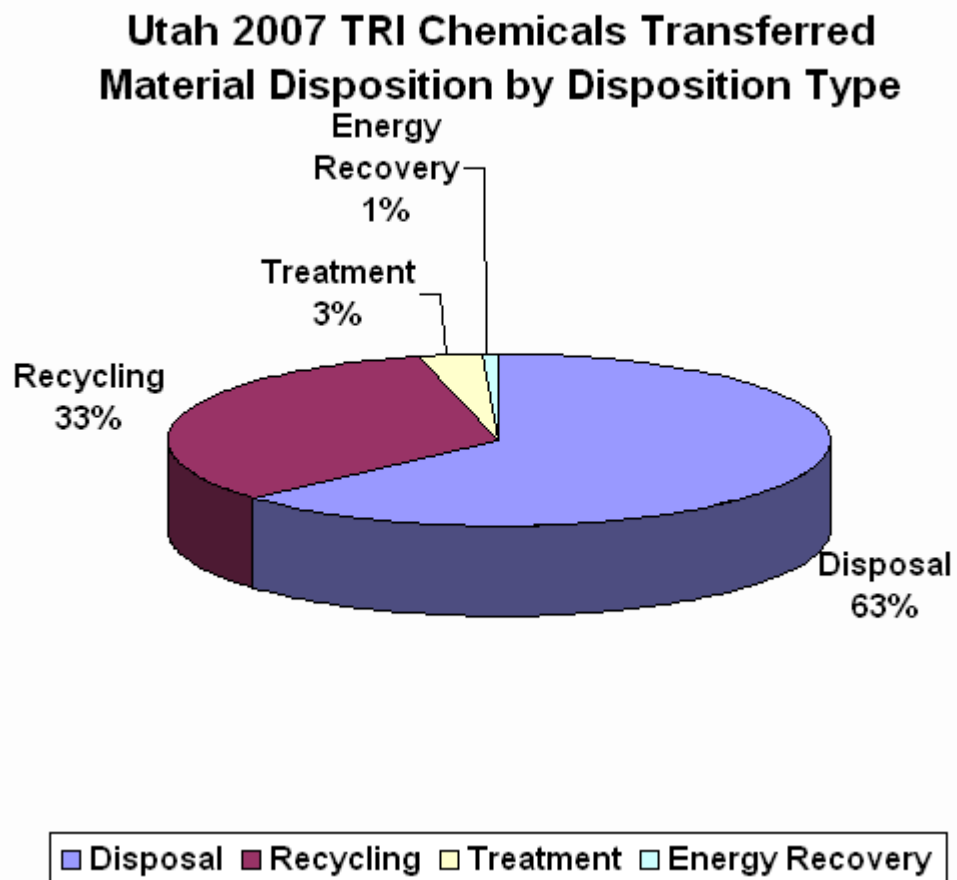


Figure 11 displays how chemicals were managed after being transferred from Utah facilities in 2007. The graphic shows that 63% of chemicals were transferred for disposal, 33% were transferred for recycling, 3% was transferred for treatment and the remaining percentage was transferred for energy recovery.

Figure 12

2007 Utah TRI Chemical Transfers - Material Disposition By State

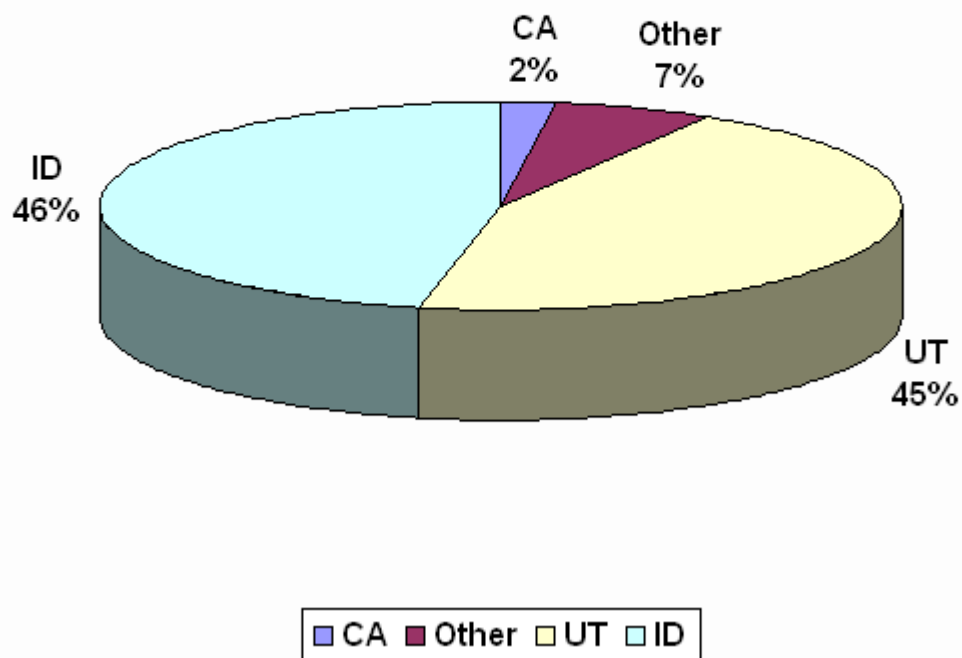


Figure 12 shows the percentages of chemicals transferred in 2007 to various states. Transfers off-site include transfers to facilities both inside and outside of Utah. Approximately 17.1 million pounds of wastes were transferred off-site in 2007. Idaho received 46%, Utah received 45%, California received 2%, and the remaining 7% was transferred to other states.

Figure 13 shows the distribution of releases by media in millions of pounds. This graph shows proportions prior to data correction. The releases to land in 2007 account for the greatest portion of releases at 159.7¹⁶ million pounds (86.5%) of all chemicals reported released. Releases to air and water made up the remaining 5% and approximately 1% respectively.

Utah 2007 TRI Total Releases By Media

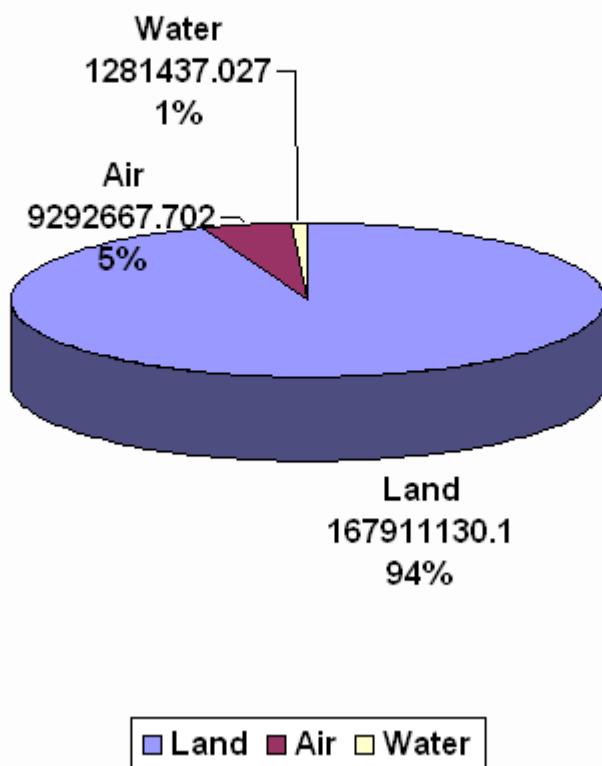


Figure 13

PERSISTENT BIOACCUMULATIVE TOXIC (PBT) CHEMICALS

In October 1999 EPA published a final rule (64 FR 58666) adding seven chemicals and two chemical compound categories to the list that meet the criteria as persistent and bioaccumulative toxic chemicals subject to reporting under EPCRA Section 313. Dioxin and dioxin-like compounds and polycyclic aromatic compounds (PACs) were the two chemical compound categories added. Under the 1999 rule, EPA also lowered the reporting thresholds for the dioxin and dioxin-like compounds chemical category to 0.1 gram.

¹⁶ Adjusted from 167.9 million pounds (see DC ITEM 2 in Data Corrections).

Table 19 shows the 17 facilities in Utah reporting releases in 2007 of dioxin and dioxin-like compounds and the amount of these chemicals released by each facility.

TABLE 19
Facilities Reporting PBT
Dioxin and Dioxin-like Compound Releases
(Units in Grams)

Facility Name	To Air	To Land	<u>TOTAL</u> Release
1 US MAGNESIUM, LLC	3.13	4332.80	4335.93
2 CLEAN HARBORS ARAGONITE, LLC.	19.13	0.00	19.13
3 WESTERN ZIRCONIUM	0.00	12.94	12.94
4 INTERMOUNTAIN POWER GENERATING STATION	2.05	7.04	9.09
5 BONANZA POWER PLANT	3.17	0.00	3.17
6 PACIFICORP HUNTER PLANT	0.68	0.00	0.68
7 SUNNYSIDE COGENERATION ASSOCIATES	0.59	0.00	0.59
8 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT	0.58	0.00	0.58
9 PACIFICORP - HUNTINGTON PLANT	0.48	0.00	0.48
10 GRAYMONT WESTERN US INC., CRICKET MTN LIME PRODUCTION	0.24	0.00	0.24
11 ASH GROVE CEMENT COMPANY	0.19	0.00	0.19
12 PACIFICORP - CARBON PLANT	0.10	0.00	0.10
13 HOLCIM (US) INC., DEVIL'S SLIDE PLANT	0.05	0.00	0.05
14 TESORO REFINING AND MARKETING COMPANY	0.03	0.00	0.03
15 HOLLY REFINING & MARKETING COMPANY-WOODS CROSS	0.00	0.00	0.00
16 CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY	0.00	0.00	0.00
17 KENNECOTT UTAH COPPER SMELTER & REFINERY	0.00	0.00	0.00
Totals	30.42	4352.78	4383.20

For reporting year 2007, 17 facilities in Utah reported a total release of 4,383.20 grams of dioxin and dioxin-like chemicals. This amount shows a 3.3% decrease from the amount 4,532.00 grams reported in RY2006. 99.3% of the total amount released was reported as releases to land with the remaining percentage reported as releases to air. The amount reported by US Magnesium comprises 98.9% of the total release amount for Utah. No dioxins were reported being released to surface water.

SUMMARY

Trends recognized in the Toxic Release Inventory data for reporting year 2007 may be summarized as follows:

- *Total On-site and Off-site Releases* decreased by 8.5%. Total releases reported for 2007 were 184.7 million pounds. Total releases reported for 2006 in Utah were 201.7 million pounds. The trend shows a reduction of 17.0 million pounds.
- *Total Releases to Air* decreased by 5.9% in 2007. Total amount of releases to air reported was 9.3 million pounds. Chemicals ranked first and second for quantities released to air were hydrochloric acid (aerosol forms only) and chlorine respectively.
- *Total Releases to Land* decreased by 7.4% from 181.3 million pounds in 2006 to 159.7 million pounds in 2007. Releases to land reported by Kennecott facilities comprise 85.9% (to land on-site only) 91.7% (to land on-site and off-site) of the total amount reported as releases to land in Utah in 2007. Kennecott releases to land decreased by 20.8 million pounds in 2007. Energy Solutions reported a decrease of 2.5 million pounds representing a decrease of 48.9%.
- *Total Releases to Surfaces Water* decreased by 5.9% from 100,000 pounds in 2006 to 94,400 pounds in 2007. Nitrate compounds reported by Chevron Products Company comprise 86.9% of the total release to surface waters statewide.
- *Total Transfers to Publicly Owned Treatment Works* decreased by 8.3% from 1.29 million pounds in 2006 to 1.19 million pounds in 2007.
- *Transfers Offsite* to treatment, storage & disposal facilities, which typically include chemical recyclers and waste disposal facilities, decreased by 24.9% from 22.8 million pounds in 2006 to 17.1 million pounds in 2007.
- The most notable PBT chemical category is dioxin and dioxin-like compounds. Dioxin and dioxin-like compounds are unique in that it is the only chemical/chemical category throughout the TRI program in which the releases are reported in grams. Releases of PBT chemicals, dioxin and dioxin-like compounds, showed a decrease by 3.3% from 4,532 grams in 2006 to 4,383 grams in 2007. PBT releases to land constitute 99.3% of while released to air make up the remaining 0.7% all dioxin and dioxin-like chemicals released.
- Overall total releases in Utah of TRI chemicals were reduced by 8.4% in reporting year 2007.