



State of Utah
Department of Environmental Quality

Utah Toxic Release Inventory
Reporting Year 2012
Data Summary Report

Division of Environmental Response and Remediation
December 2013

TABLE OF CONTENTS

| | |
|---|-----------|
| List of Figures | ii |
| List of Tables | ii |
| Executive Summary | 1 |
| Introduction..... | 1 |
| Duplicate Amounts Reduction Calculation | 2 |
| Excluded Data..... | 2 |
| 2012 TRI Summary..... | 2 |
| Total Releases | 3 |
| Releases to Air (on-site)..... | 3 |
| Releases to Land (on-site)..... | 3 |
| Releases to Surface Water (on-site)..... | 3 |
| Transfers to POTWs | 4 |
| Total Off-site Transfers..... | 4 |
| Persistent Bioaccumulative Toxic (PBT) Chemicals – Dioxin & Dioxin-Like Compounds ... | 4 |
| About the TRI Program | 5 |
| What is the Toxic Release Inventory? | 5 |
| Who Must Report to TRI? | 5 |
| What Type of Information Must Be Reported? | 5 |
| What Types of Chemicals are Subject to Reporting? | 5 |
| What Are the Benefits and Uses of TRI Data? | 6 |
| What Are the Limitations of the Data? | 6 |
| What Cautions Should Be Used in Interpreting TRI Data? | 6 |
| Changes to the Regulations..... | 7 |
| How Can the Public Obtain TRI Information? | 7 |
| Release Details: Figures and Tables Illustrating RY 2012 TRI Data | 8 |
| General Statistics | 8 |
| Facility Locations..... | 9 |
| Industrial Sectors | 10 |
| Total Releases | 10 |
| Releases to Air | 14 |
| Releases to Land..... | 16 |
| Mining..... | 17 |
| Kennecott Facilities | 17 |
| Waste Disposal Facilities | 19 |
| Electric Utilities | 22 |
| Releases to Surface Water..... | 24 |
| Transfers to Publicly Owned Treatment Works | 25 |
| Utah Facility Transfers to other Off-Site Locations..... | 26 |
| Persistent Bioaccumulative Toxic (PBT) Chemicals | 30 |
| Summary..... | 31 |

List of Figures

- Figure 1 Quantity of Utah TRI Submissions 1988-2012
- Figure 2 Utah 2012 TRI Facility Locations & Wasatch Front
- Figure 3 2012 Utah TRI Facilities– Quantity Reporting by Industrial Sector
- Figure 4 Utah TRI Total Releases 1988-2012
- Figure 5 Utah TRI Total Releases to Air 1988-2012
- Figure 6 U.S. Magnesium LLC TRI Releases to Air 1988-2012
- Figure 7 Kennecott Utah Copper Mine, Concentrators, and Power Plant TRI Releases to Land 1988-2012
- Figure 8 Kennecott Utah Copper Smelter & Refinery TRI Releases to Land 1988-2012
- Figure 9 Clean Harbors Grassy Mountain, LLC TRI Releases to Land 1988-2012
- Figure 10 Energy Solutions LLC TRI Releases to Land 1988-2012
- Figure 11 Utah 2012 TRI Chemical Transfers by Final Disposition Type
- Figure 12 Utah 2012 TRI Chemicals Transferred to Other States
- Figure 13 Utah 2012 TRI Total On-site Releases by Media

List of Tables

- Table 1 Top 10 Facilities - Total On-Site and Off-Site Releases
- Table 2 Top 10 Chemicals - Total On-Site and Off-Site Chemical Releases
- Table 3 Top 10 Facilities - Total On-Site Releases
- Table 4 Top 10 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 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

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 for a finite list of chemicals defined by the statute concerning releases and transfers into the environment and the 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 Reporting Year (RY) 2012. 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 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.

Beginning with RY 2006, Utah started participating in the State Data Exchange (SDX) Network-National Environment Information Exchange Network. This partnership provides DEQ the mechanism to receive TRI data directly from EPA, and beginning with RY 2006 SDX is the exclusive source of TRI data for the State of Utah. Data is transmitted electronically to a state server where it is permanently retained.

It is traditionally the practice of EPA to “freeze”¹ TRI data several months after the annual July 1st submission deadline. TRI data 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 then transmitted in real-time to the Utah data-server. DEQ does not freeze the Utah data set. Information offered in this report reflects the presentation of all data within the DEQ data management system received at the time this summary report was prepared.

For RY 2012, EPA transmitted a total of 775 chemical submission forms, 721 Form-R submissions and 54 Form-A submissions, from 171 facilities. Thirty-one Form-R submissions from six facilities could not be uploaded to our system for compilation, as explained below in the Excluded Data section of this report.

¹ Freeze – TRI data submissions or revisions submitted after the date on which EPA sets a freeze on the dataset are not used in the final statistical calculations published in the annual EPA TRI report.

Duplicate Amounts Reduction Calculation

EPA incorporates a correction calculation 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.² The Utah system was modified to perform a similar correction calculation beginning in RY 2010 data and for this reason totals related to select categories (e.g. total off-site transfers) show more consistent values with those reported by EPA since RY 2010.

Excluded Data

Several logistical issues exist that prevent the Utah system from matching the EPA data set exactly. At the present time there are several facility data files that cannot be loaded into the Utah system. These facilities exist as pairs where each facility of a pair is related. Each facility of the pair submits TRI separately, however, each paired facility submits under the same TRI Facility Identification number. The Utah system does not currently accommodate for this circumstance and as a result of this conflict, the data submitted by these facilities cannot be loaded into the DEQ data management system. Based on a reconciliation of EPA and Utah data, EPA received a total of 806 chemical submissions from a total of 177 facilities. Utah was able to load 775 of the 806 chemical submissions (Form-R) for 171 facilities. One new regulation was implemented during the 2012 report year cycle. Facilities located in Indian Land now submit to EPA and Tribal authorities and Utah does not receive these data submissions. One facility in Utah, the Bonanza Power Plant located in Vernal, Utah was affected by this rule. A brief summary of the releases reported by this facility is presented, but the data are not included in the statistical calculations, tables or charts presented in this report.

EPA publishes TRI data available on the internet for all past report years. These datasets serve as an independent source to cross-check past years. The latest report year data is made available after release of the TRI National Analysis report.

2012 TRI Summary

This report presents data submitted from facilities that are subject to the TRI reporting criteria for releases that occurred for the current report year of January 1 to December 31, 2012. The deadline for reporting these data was July 1, 2013.

Totals provided in the Executive Summary section narrative of this report are an approximation of the actual release values that have been rounded to simplify presentation. Significant figures are used only when necessary to distinguish a difference that would not be apparent in whole number values. Specific amounts are presented in the tables in the detail summary portion of this report.

² 2006 State Fact Sheet (Fact Sheets are accessible at www.epa.gov/triexplorer; click tab titled “Fact Sheets”).

Data summarized in this report is representative of the forms uploaded to the Utah DEQ system. For the current reporting year, 171 facilities filed a total of 775 chemical submissions under the federal TRI program. Seven hundred twenty-one of the total 775 submissions received were Form-R submissions and 54 were Form-A submissions. A total of 138 unique chemicals or chemical categories were reported. An additional 6 facilities were submitted from EPA via TDX that were not uploaded as explained above. These six facility records show 31 submissions comprised of 27 Form-R reports and four Form-A reports.

The Wasatch Front is defined to include Weber, Davis, Salt Lake and Utah counties. The distribution of facilities in these counties is: Davis, 22; Salt Lake, 59; Utah, 16; and Weber, 17. The Wasatch Front accounts for about 67% of all facilities reporting under the TRI program and about 58% of all chemical submissions. While Tooele County has 11 facilities participating in the TRI program, these facilities submitted a total of 151 chemical reports or about 19.5% of all chemical reports submissions statewide.

Total Releases

Total on-site and off-site release amounts reported by all facilities reporting TRI in Utah for the current reporting year decreased by 3.6% from 198.4 million pounds in RY 2011 to 191.2 million pounds showing a net decrease of about 7.2 million pounds in RY 2012.

Releases to Air (on-site)

Total TRI releases to air reported by Utah facilities in the current report year decreased by 30% from 11.4 million pounds to 7.9 million pounds showing a decrease of about 3.5 million pounds. Chemicals reported in largest quantities were chlorine and hydrochloric acid (aerosol forms only) reported at 4.2 million pounds and 2.1 million pounds respectively.

Releases to Land (on-site)

For the current report year, total chemical releases to land decreased by 1.6%. Total releases to land decreased from 183 million pounds to 180 million pounds resulting in a net decrease of 3 million pounds. The largest quantities reported for chemicals were for metals compounds of lead, copper, zinc, barium, arsenic and chromium.

Kennecott facilities comprise the largest single-source quantity reported for releases to land. The combined release reported by Kennecott facilities for releases to land showed a slight decrease, from 168.6 million pounds to 168.2 million pounds.

Releases to Surface Water (on-site)

Total releases to surface water decreased by 79% from 492,000 pounds to 105,000 pounds showing a decrease of 387,000 pounds. The RY 2011 report noted a single large release of 383,000 pounds of nitrate compounds to surface water made by Swift Beef, a facility in Cache County, Utah. A review of the historical data shows this was a one-time release.

Chevron Products Company reported a release of approximately 91,600 pounds contributing just under 88% of the total release statewide. Two Kennecott facilities (mine and smelter/refinery) combined reported slightly under 12,300 pounds for a variety of TRI chemicals representing about 12% of the statewide release total. About 93% of the chemicals reported by Kennecott facilities consist of a variety of metals compounds. The aggregate amounts reported from these three facilities comprise about 99.7% of the total quantities released to surface waters statewide.

Transfers to POTWs

Publicly Owned Treatment Works (POTWs) are wastewater treatment plants. Transfers reported to POTWs decreased by 8.5% from 1.8 million pounds down to 1.6 million pounds with a decrease of about 152,500 pounds. Nitrate compounds constitute about 82% of the total chemicals transferred to POTWs. The remaining percentages are comprised of nitric acid (about 7.7%), ammonia (about 5.2%), and glycol ethers (about 2.2%). A combination of metals compounds and organic chemicals make up the remaining portions.

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.

Total 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 off-site had a slight increase of 0.27% from 17.93 million pounds to 17.98 million pounds. Metals and nitrate compounds topped the list of chemicals transferred off-site.

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

The total amount of PBT dioxin & dioxin-like compounds reported showed an 88.24% increase from 7,291.26 grams last year to 13,723.62 grams reported out for the current reporting year. This shows an increase of 6,432.36 grams. The total release amount on-site reported by all facilities was 13,685.46 grams. The distribution of onsite releases by media is 13,665.28 grams to land, 20.07 grams to air; and 0.10 grams to water. The total release off-site amount was 38.16 grams.

The total release amount reported by US Magnesium for dioxin and dioxin-like chemicals on-site and off-site is 13,700.07 grams. The total amount reported by US Magnesium comprises 99.8% of the total amount released by all facilities.

ABOUT THE TRI PROGRAM

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 Emergency Planning and Community Right to Know Act (EPCRA) 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 Code §63K-3-301. 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 for the previous calendar year. This report is a summary of data submitted to the UDEQ for EPCRA Reporting Year RY 2012.

Who Must Report to TRI?

A facility must report to TRI if it:

- Conducts operations within specified Standard Industrial Classification (SIC) Codes or North American Industrial Classification System (NAICS) 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?

There are over 600 chemicals and chemical categories subject to reporting under TRI based on acute or chronic human health or environmental effects. TRI program specific chemicals are listed under Title 40 of the Code of Federal Regulations 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 as described below:

- The public can use TRI data to identify potential concerns.
- Government agencies 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.
- Data may be reviewed and downloaded from <http://www.epa.gov/tri/tridata/index.html>

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 are allowed to report ranges of 1-10, 11-499, and 500-999 pounds. In such cases, the mid-point of the range was entered 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 used for estimating 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. Conversely a small release could have a relatively high concentration and be more toxic than a larger release.
- *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

There were several changes in the Toxic Release Inventory program for RY 2012.

- On Monday October 17, 2011 EPA announced (Federal Register / Vol. 76, No. 200 p. 64022) that it was lifting the Administrative Stay of Emergency Planning and Community Right to Know Act (EPCRA) section 313 toxic chemical release reporting requirements for hydrogen sulfide (Chemical Abstracts Service Number (CAS No.) 7783-06-4. This action was effective on October 17, 2011 such that the first reports on hydrogen sulfide were due on July 1, 2013 for RY 2012.
- The EPA has revised the manner for applying the threshold planning quantities (TPQ) for extremely hazardous substances (EHS) that are non-reactive solid chemicals in solution. The revision allows a facility to apply a 0.2 factor to the amount of solid chemical on site and in solution before determining if the quantity equals or exceeds the lower published TPQ. This rule became effective on April 23, 2012.
- On Thursday April 19, 2012 the EPA announced (Federal Register / Vol. 77, No. 76, p. 23409) the requirement of facilities located in Indian Country to report TRI data to tribal governments beginning in RY 2012. Under this new rule, data submissions are no longer provided to the state.
- TRI regulations can be reviewed on-line at the following websites:
<http://www.epa.gov/lawsregs/laws/epcra.html> or <http://www.epa.gov/fedrgstr>.

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 GRAMA (Government Records Access Management Act) request to:

Utah Division of Environmental Response and Remediation
 195 North 1950 West, 1st Floor
 P.O. Box 144840
 Salt Lake City, Utah 84114-4840
 Or e-mail a completed GRAMA request form to errgrama@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 specialized reports require less than one hour's time to create. Please call UDEQ (801-536-4100) for current hourly rates for these services.

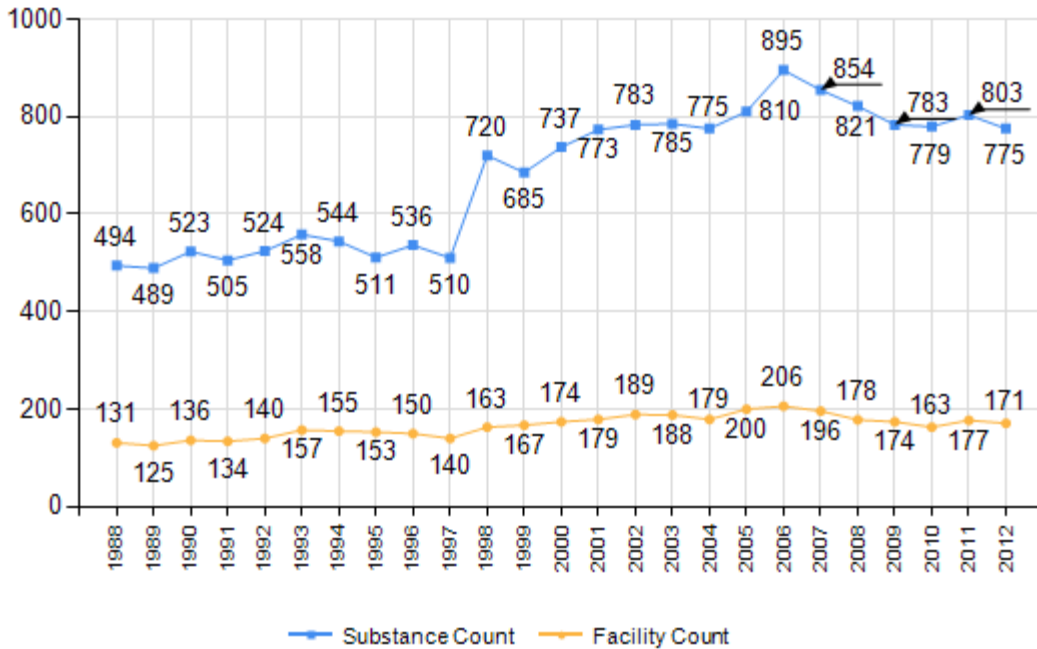
RELEASE DETAILS: FIGURES AND TABLES ILLUSTRATING RY 2012 TRI DATA

The following pages contain the relevant figures and tables that summarize the TRI data for RY 2012. These graphics and tables are compilations made from the data submitted by various facilities in Utah. Data are presented under headings that describe general categories discussed in this report.

GENERAL STATISTICS

FIGURE 1

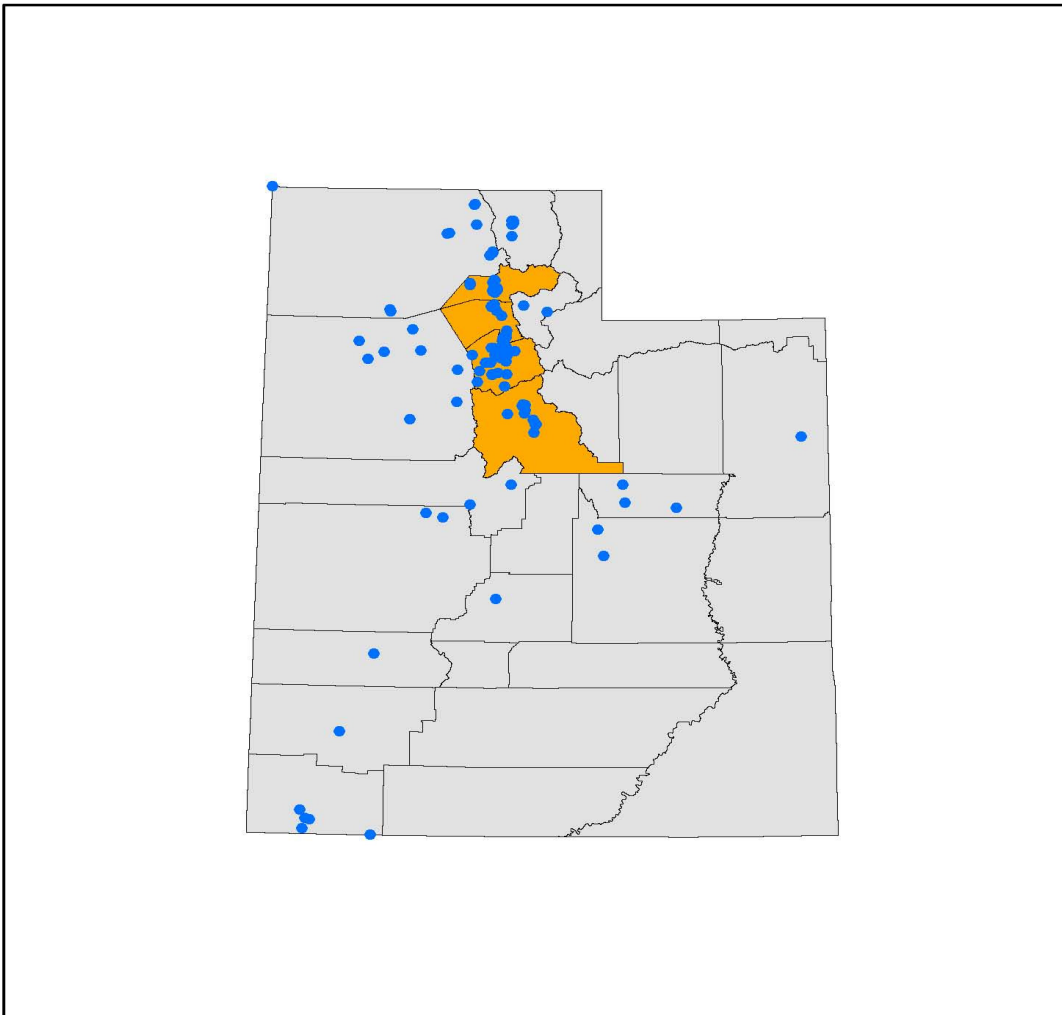
**Quantity of Utah TRI Submissions
1988 - 2012**



Facility Locations

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. In RY 2012 facilities along the Wasatch Front comprised 67% of all facilities in Utah.

FIGURE 2
Utah 2012 TRI Facility Locations & Wasatch Front

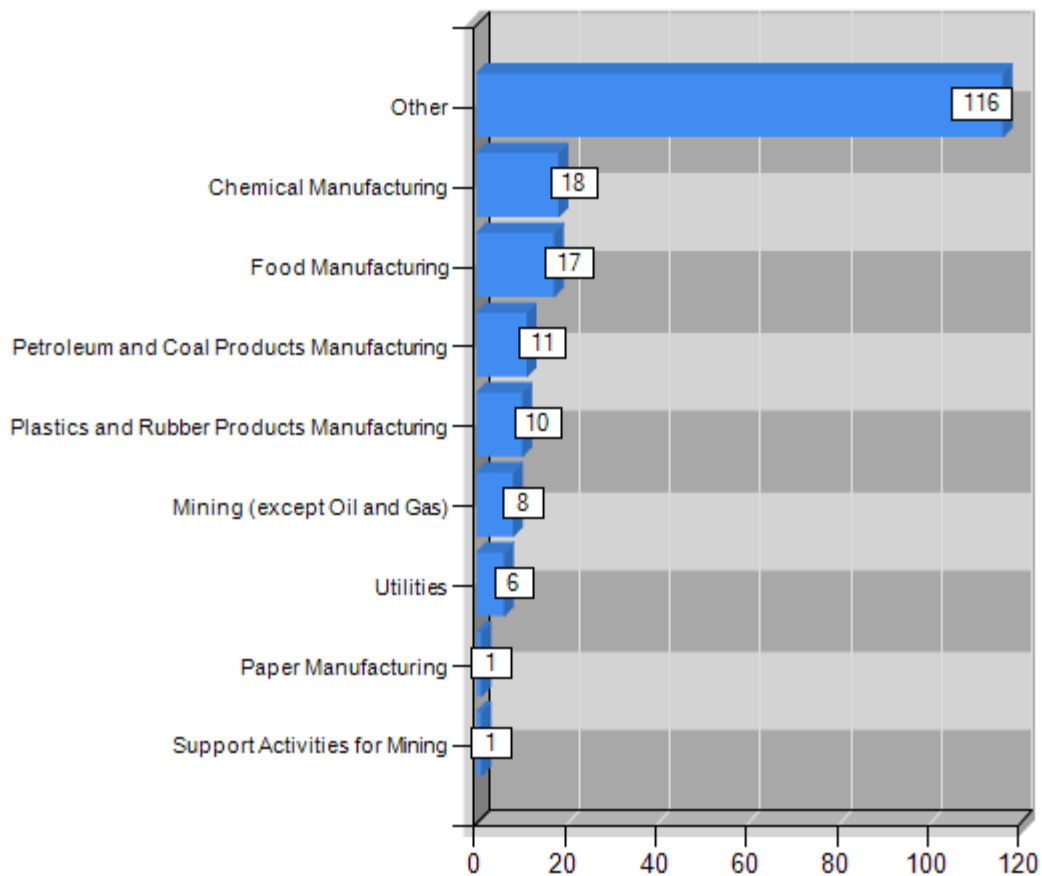


Industrial Sectors

This figure shows a breakdown of industrial sectors reporting TRI data.

FIGURE 3

**2012 Utah TRI Facilities
Quantity Reporting by Industrial Sector**



Additional industrial sectors (not all) that comprise the “Other” category are: manufacturing in nonmetallic mineral production, primary metals, fabricated metal products, machinery, computer and electronic products, electrical equipment, appliance and component products, transportation equipment, merchant wholesalers, truck transportation, administrative and support services, waste management and remediation services and national security and international affairs.

TOTAL RELEASES

The following section shows figures and tables related to TRI total releases in Utah.

FIGURE 4

**Utah TRI Total Releases
(Millions of Pounds)
1988 - 2012**

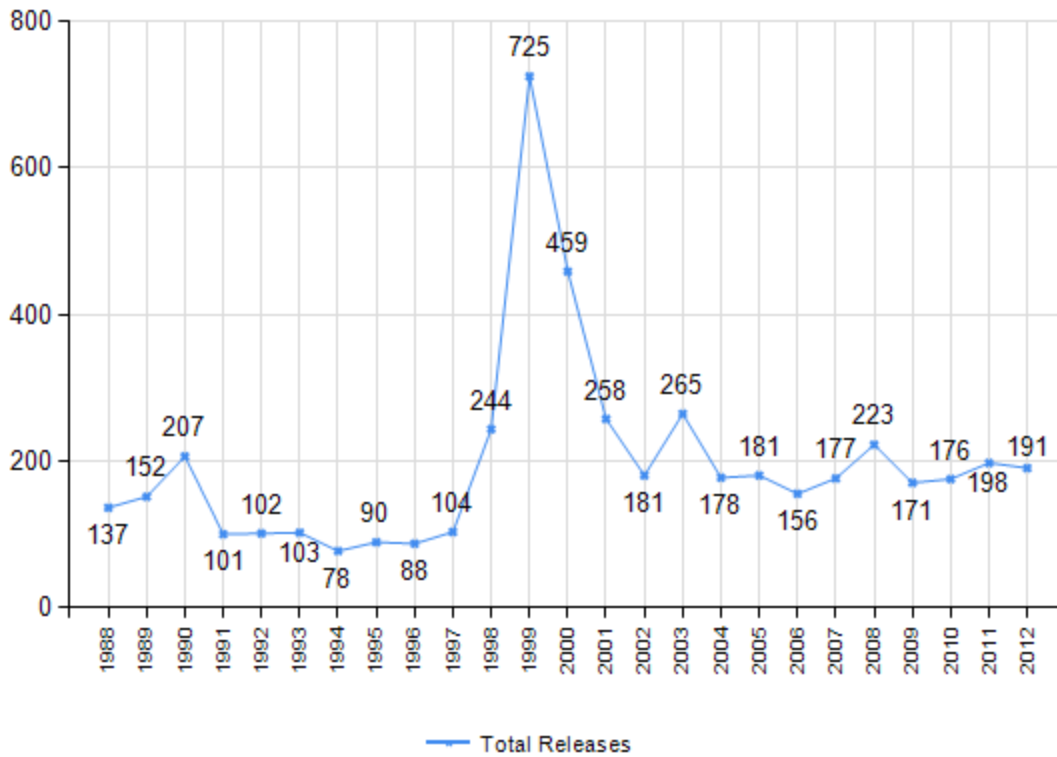


TABLE 1

TOP 10 FACILITIES
Total On-site and Off-site Releases

| Facility Name | Pounds/Year |
|---|-------------|
| 1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT | 149,343,648 |
| 2 KENNECOTT UTAH COPPER SMELTER & REFINERY | 19,055,292 |
| 3 US MAGNESIUM, LLC | 5,630,564 |
| 4 CLEAN HARBORS GRASSY MOUNTAIN, LLC | 3,301,447 |
| 5 ENERGY SOLUTIONS LLC | 2,201,876 |
| 6 INTERMOUNTAIN POWER GENERATING STATION | 1,520,983 |
| 7 PACIFICORP - HUNTINGTON PLANT | 1,490,731 |
| 8 PACIFICORP HUNTER PLANT | 1,198,121 |
| 9 BRUSH RESOURCES INC, MILL | 1,090,289 |
| 10 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION | 931,537 |

TABLE 2

Top 10 Chemicals - Total On-site and Off-site Chemical Releases
(Reported in an amount equal to or greater than 1 million pounds)

| Chemical Name | Pounds/Year |
|----------------------|-------------|
| 1 Lead Compounds | 110,033,402 |
| 2 Copper Compounds | 52,076,141 |
| 3 Zinc Compounds | 5,392,098 |
| 4 Chlorine | 4,157,289 |
| 5 Barium Compounds | 2,778,286 |
| 6 Arsenic Compounds | 2,595,243 |
| 7 Hydrochloric acid | 2,085,899 |
| 8 Ammonia | 1,587,905 |
| 9 Chromium Compounds | 1,505,001 |
| 10 Nitrate compounds | 1,325,900 |

TABLE 3

Top 10 Facilities - Total On-site Releases
(Equal to or greater than 1/2 million pounds)

| Facility Name | Lbs/Year |
|--|-------------|
| 1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT | 149,314,373 |
| 2 KENNECOTT UTAH COPPER SMELTER & REFINERY | 19,051,300 |
| 3 US MAGNESIUM, LLC | 5,630,562 |
| 4 CLEAN HARBORS GRASSY MOUNTAIN, LLC | 3,293,528 |
| 5 ENERGY SOLUTIONS LLC | 2,201,876 |
| 6 INTERMOUNTAIN POWER GENERATING STATION | 1,520,983 |
| 7 PACIFICORP - HUNTINGTON PLANT | 1,490,635 |
| 8 PACIFICORP HUNTER PLANT | 1,198,040 |
| 9 BRUSH RESOURCES INC, MILL | 1,090,289 |
| 10 WESTERN ZIRCONIUM | 883,287 |

TABLE 4

Top 10 Chemicals - Total On-site Chemical Releases

| Chemical Name | Lbs/Year |
|----------------------|-------------|
| 1 Lead Compounds | 109,663,767 |
| 2 Copper Compounds | 51,980,966 |
| 3 Zinc Compounds | 4,624,272 |
| 4 Chlorine | 4,157,289 |
| 5 Barium Compounds | 2,712,962 |
| 6 Arsenic Compounds | 2,594,811 |
| 7 Hydrochloric acid | 2,085,890 |
| 8 Ammonia | 1,587,877 |
| 9 Chromium Compounds | 1,298,619 |
| 10 Aluminum oxide | 1,108,731 |

RELEASES TO AIR

FIGURE 5

**Utah TRI Total Releases to Air
(Millions of Pounds)
1988 - 2012**

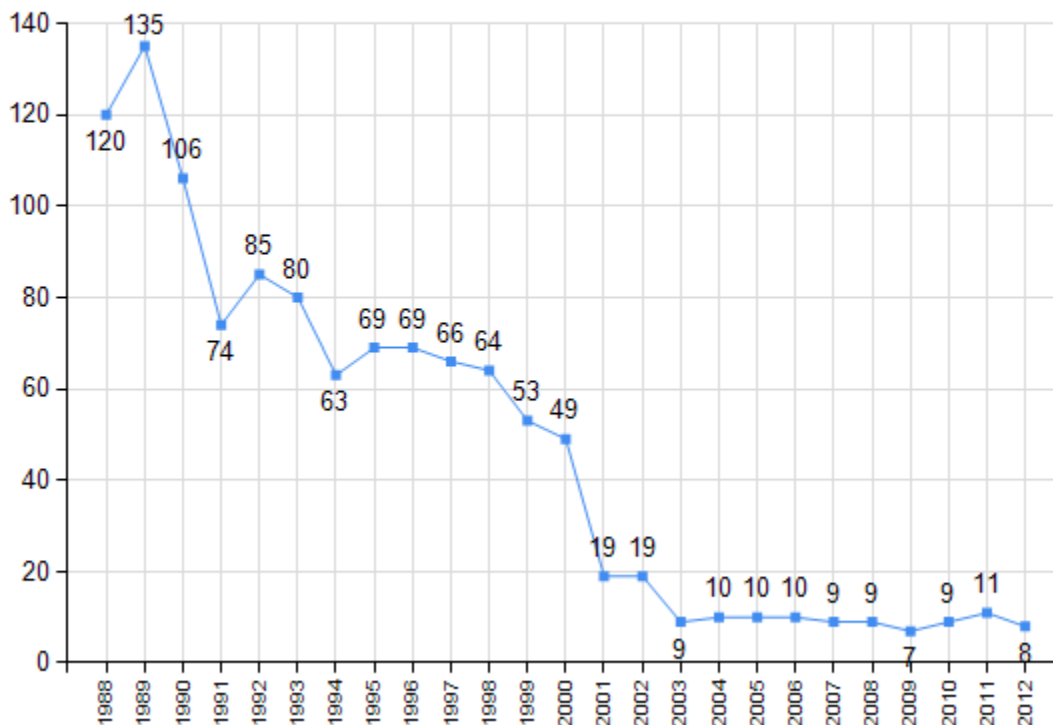


TABLE 5

Top 10 Facilities - Total Releases to Air

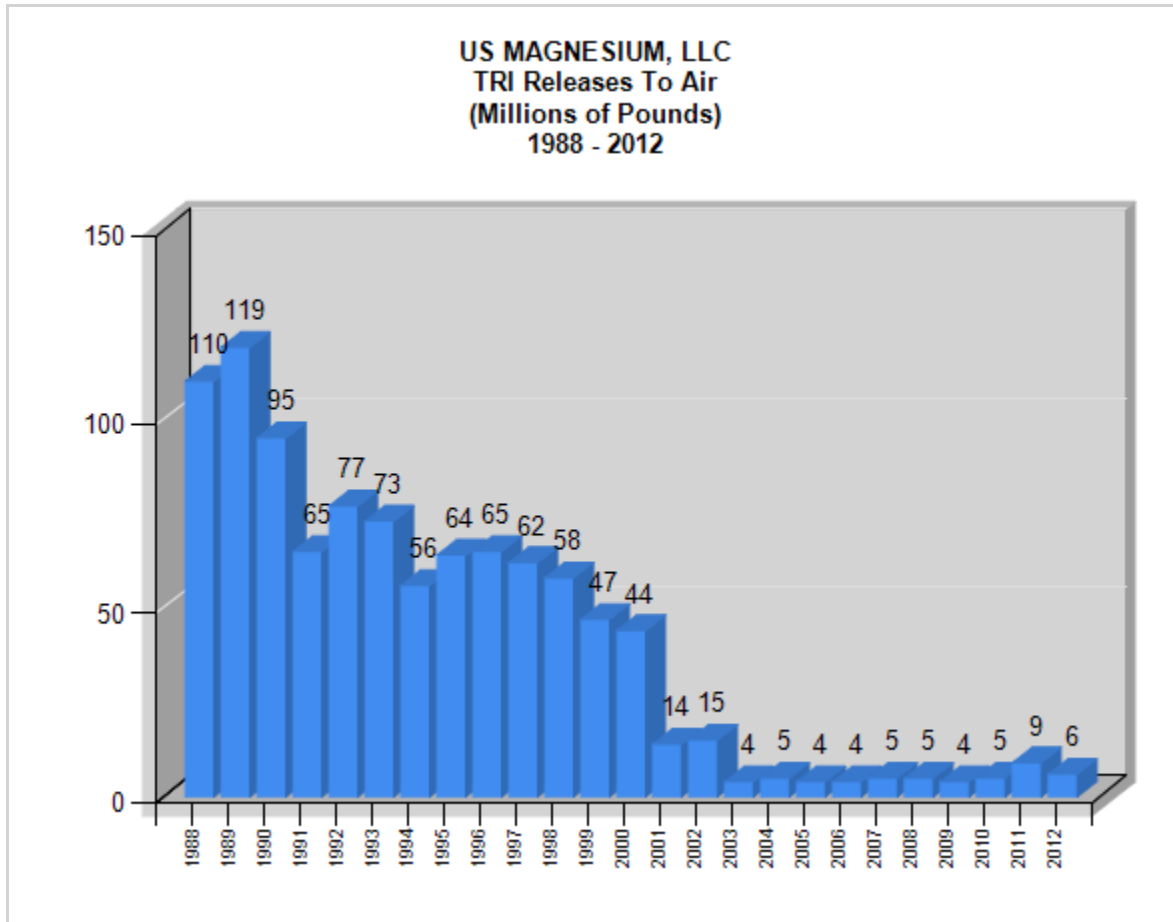
| Facility Name | Lbs/Year |
|---|-----------|
| 1 US MAGNESIUM, LLC | 5,627,877 |
| 2 PACIFICORP - CARBON PLANT | 502,424 |
| 3 HEXCEL CORPORATION | 209,845 |
| 4 BRUSH RESOURCES INC, MILL | 192,655 |
| 5 TESORO REFINING AND MARKETING COMPANY | 154,311 |
| 6 U.S. DOD USAF OGDEN AIR LOGISTICS CENTER | 137,238 |
| 7 PACIFICORP HUNTER PLANT | 132,600 |
| 8 INTERMOUNTAIN POWER GENERATING STATION | 119,527 |
| 9 PACIFICORP - HUNTINGTON PLANT | 106,302 |
| 10 KENNECOTT UTAH COPPER SMELTER & REFINERY | 92,220 |

TABLE 6

Top 10 Chemicals - Total Releases to Air

| Chemical Name | Lbs/Year |
|----------------------|-----------|
| 1 Chlorine | 4,157,289 |
| 2 Hydrochloric acid | 2,085,890 |
| 3 Ammonia | 495,450 |
| 4 Hydrofluoric acid | 263,321 |
| 5 Sulfuric acid | 188,477 |
| 6 Hydrogen cyanide | 113,216 |
| 7 Hexane | 93,763 |
| 8 Methylene chloride | 91,881 |
| 9 Styrene | 55,178 |
| 10 Xylene (mixed) | 51,739 |

FIGURE 6



RELEASES TO LAND

TABLE 7

Top 10 Facilities - Total Releases to Land

| Facility Name | Lbs/Year |
|--|-------------|
| 1 KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT | 149,296,934 |
| 2 KENNECOTT UTAH COPPER SMELTER & REFINERY | 18,952,951 |
| 3 CLEAN HARBORS GRASSY MOUNTAIN, LLC | 3,293,430 |
| 4 ENERGY SOLUTIONS LLC | 2,201,876 |
| 5 INTERMOUNTAIN POWER GENERATING STATION | 1,401,455 |
| 6 PACIFICORP - HUNTINGTON PLANT | 1,384,332 |
| 7 PACIFICORP HUNTER PLANT | 1,065,439 |
| 8 BRUSH RESOURCES INC, MILL | 897,634 |
| 9 WESTERN ZIRCONIUM | 855,560 |
| 10 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION | 482,298 |

TABLE 8

Top 10 Chemicals - Total Releases to Land

| Chemical Name | Lbs/Year |
|------------------------|-------------|
| 1 Lead Compounds | 109,655,697 |
| 2 Copper Compounds | 51,957,587 |
| 3 Zinc Compounds | 4,611,037 |
| 4 Barium Compounds | 2,710,113 |
| 5 Arsenic Compounds | 2,592,318 |
| 6 Chromium Compounds | 1,294,428 |
| 7 Aluminum oxide | 1,108,654 |
| 8 Ammonia | 1,091,605 |
| 9 Asbestos | 823,492 |
| 10 Manganese Compounds | 777,974 |

Mining

Five mining facilities reported under the TRI program for reporting year 2012:

- Brush Resources, Inc., Mill
- Kennecott Barneys Canyon Mining Company
- Kennecott Utah Copper Mine, Concentrators & Power Plant
- Kennecott Utah Copper Smelter & Refinery
- Lisbon Valley Mining Company

Kennecott Facilities

Kennecott Utah Copper (KUC) operates through three facilities:

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

Primary operations for these facilities include gold ore, copper ore and nickel ore mining, smelting and refining. The MCPP 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 MCPP facility extracts millions of tons of overburden, waste rock, and ore during annual operations. Ore is concentrated and transported by pipeline to the smelter, which produces copper and gold. Sulfuric acid is also produced during the process.

FIGURE 7

**KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT
TRI Releases To Land
(Millions of Pounds)
1988 - 2012**

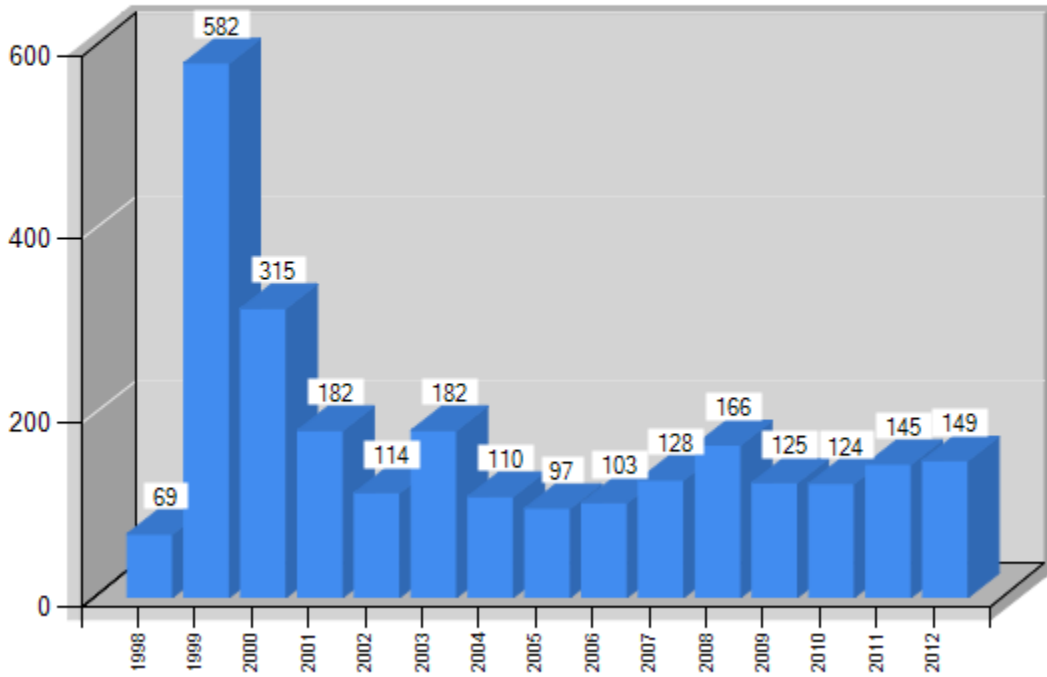
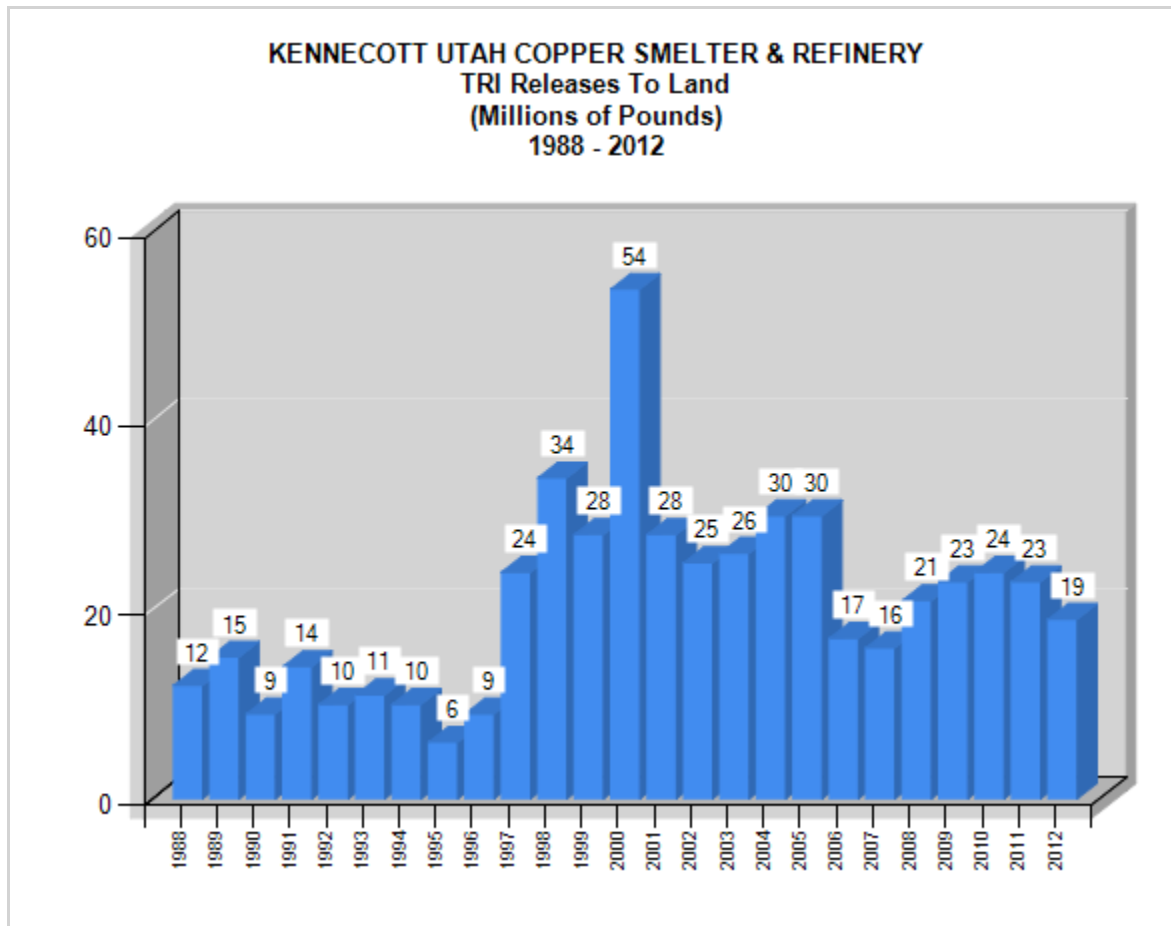


FIGURE 8



Waste Disposal Facilities

TABLE 9

Waste Disposal Facility Releases to Land

| Facility Name | Lbs/Year |
|--------------------------------------|-----------|
| 1 CLEAN HARBORS GRASSY MOUNTAIN, LLC | 3,293,430 |
| 2 ENERGY SOLUTIONS LLC | 2,201,876 |

The Clean Harbors Aragonite (CHA) facility is also a Treatment Storage and Disposal facility. It does not appear in this table because all chemical quantities are reported as off-site transfers and off-site releases.

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

| | Chemical Name | Lbs/Year |
|----|----------------------------------|-----------|
| 1 | Aluminum oxide | 1,108,654 |
| 2 | Lead Compounds | 826,444 |
| 3 | Asbestos | 823,492 |
| 4 | Polychlorinated Biphenyls (PCBs) | 600,052 |
| 5 | Chromium Compounds | 541,481 |
| 6 | Nickel Compounds | 257,877 |
| 7 | Arsenic | 237,081 |
| 8 | Copper Compounds | 184,488 |
| 9 | Zinc Compounds | 109,046 |
| 10 | Sodium dimethyldithiocarbamate | 100,672 |

FIGURE 9

**CLEAN HARBORS GRASSY MOUNTAIN, LLC
TRI Releases To Land
(Millions of Pounds)
1988 - 2012**

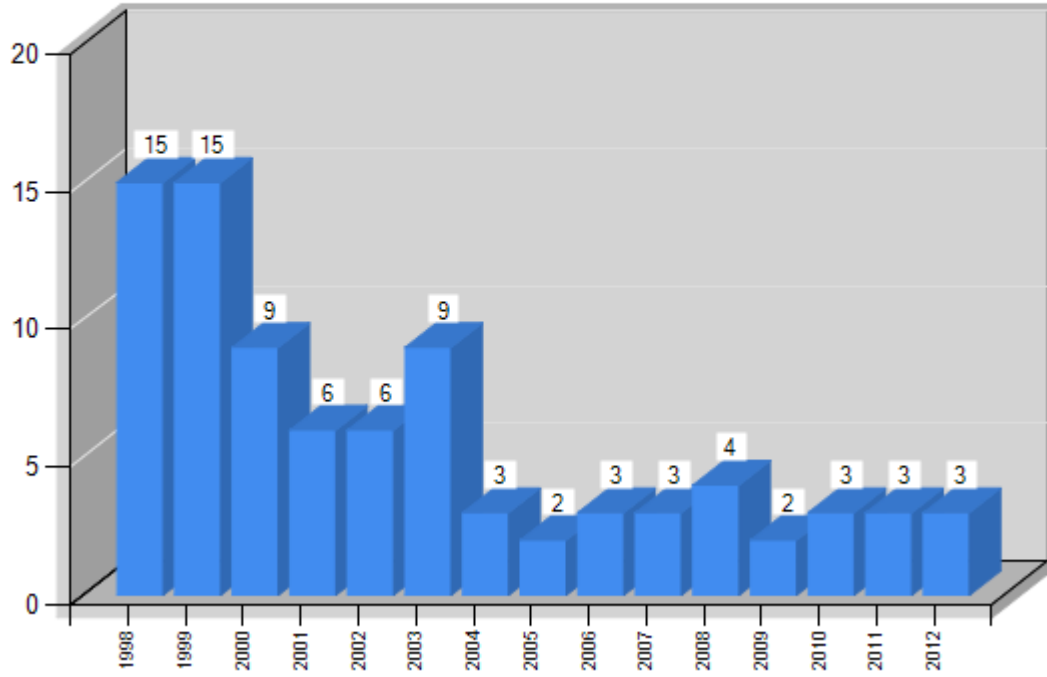
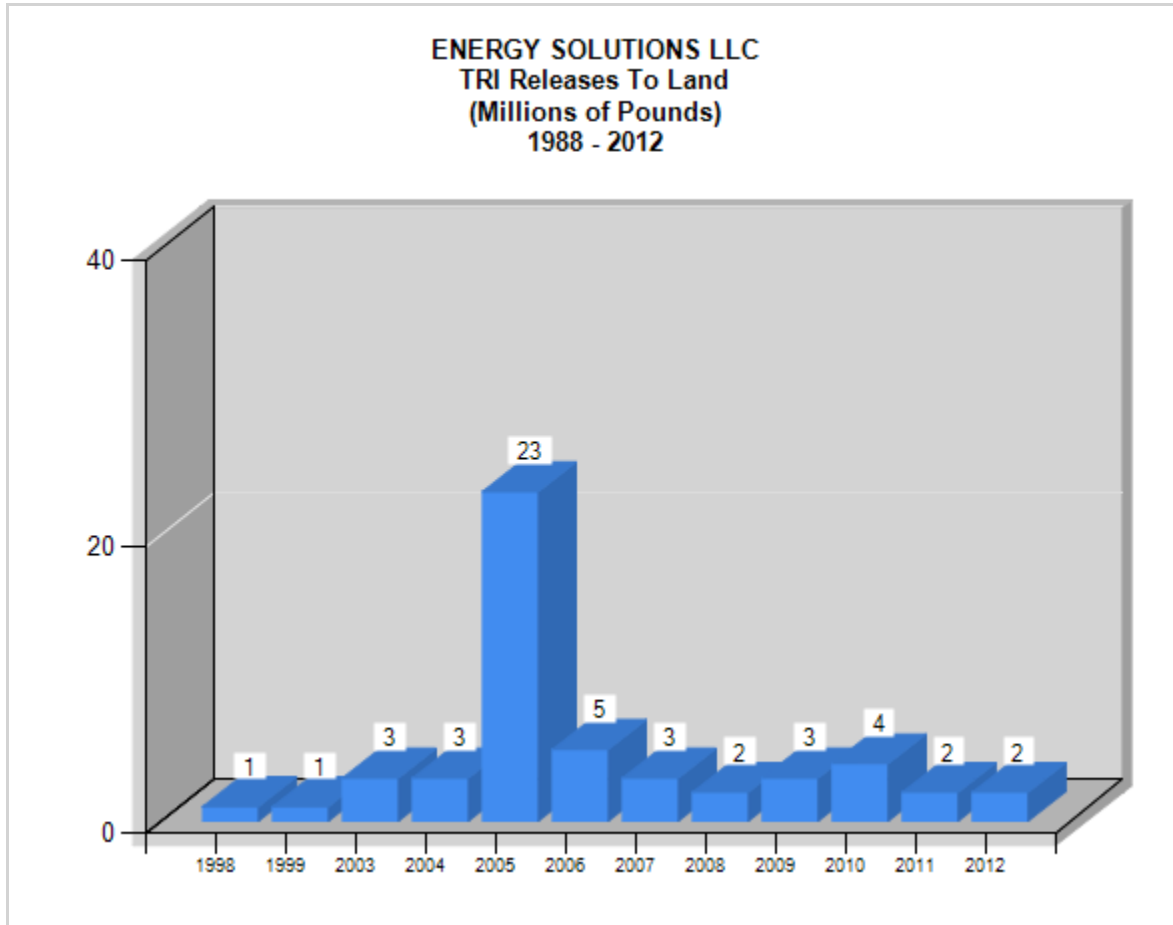


FIGURE 10



Electric Utilities

TABLE 11

Coal-Fired Electric Utility Releases to Land by Facility

| Facility Name | Lbs/Year |
|--|-----------|
| 1 INTERMOUNTAIN POWER GENERATING STATION | 1,401,455 |
| 2 PACIFICORP - HUNTINGTON PLANT | 1,384,332 |
| 3 PACIFICORP HUNTER PLANT | 1,065,439 |
| 4 PACIFICORP - CARBON PLANT | 97,287 |
| 5 SUNNYSIDE COGENERATION ASSOCIATES | 16,225 |

TABLE 12**Top 10 Chemical Releases to Land
From Coal-Fired Electric Utilities**

| Chemical Name | Lbs/Year |
|-----------------------|-----------|
| 1 Barium Compounds | 2,442,410 |
| 2 Manganese Compounds | 342,364 |
| 3 Chromium Compounds | 342,000 |
| 4 Zinc Compounds | 190,015 |
| 5 Copper Compounds | 149,836 |
| 6 Nickel Compounds | 146,983 |
| 7 Vanadium Compounds | 135,700 |
| 8 Lead Compounds | 84,631 |
| 9 Arsenic Compounds | 61,000 |
| 10 Antimony Compounds | 20,300 |

As noted in the Executive Summary, the Bonanza Power Plant in Uintah County is located in Tribal Lands and TRI data was submitted to EPA and tribal authorities. Facility data was not incorporated into the summary data statistics in this report. Preliminary data for all facilities are available and were independently obtained from the U.S. EPA website. Total releases to various environmental media from the Bonanza Power Plant are: on-site air 39,083 pounds; on-site land 1,533,796 pounds; total on-site: 1,572,879 pounds; total on-and off-site release 1,591,567 pounds. There were no reported releases to surface waters, transfers to POTWs, or other transfers off-site. Primary constituent chemicals listed in releases to air are acids and metals compounds. Primary constituent chemical releases reported to land totals and to on-site totals are metals compounds. Releases reported by this facility for PBT chemicals are presented in the PBT section of this report (Table 19, p.30).

RELEASES TO SURFACE WATER

TABLE 13

Top Facility Releases to Surface Water

| | Facility Name | Lbs/Year |
|---|--|----------|
| 1 | CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY | 91,617 |
| 2 | KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT | 6,143 |
| 3 | KENNECOTT UTAH COPPER SMELTER & REFINERY | 6,128 |

TABLE 14

Top 10 Chemical Releases to Surface Water

| | Chemical Name | Lbs/Year |
|----|---------------------|----------|
| 1 | Nitrate compounds | 91,000 |
| 2 | Zinc Compounds | 1,531 |
| 3 | Xylene (mixed) | 1,300 |
| 4 | Copper Compounds | 1,082 |
| 5 | Chromium Compounds | 1,031 |
| 6 | Nickel Compounds | 1,011 |
| 7 | Manganese Compounds | 1,007 |
| 8 | Antimony Compounds | 1,000 |
| 9 | Vanadium Compounds | 1,000 |
| 10 | Thallium Compounds | 1,000 |

TRANSFERS TO PUBLICLY OWNED TREATMENT WORKS

TABLE 15

Top 10 Facility Transfers to POTWs

| | <u>Facility Name</u> | <u>Lbs/Year</u> |
|----|---|-----------------|
| 1 | JOHNSON MATTHEY | 346,635 |
| 2 | DANNON COMPANY, THE | 223,316 |
| 3 | EASTON TECHNICAL PRODUCTS | 170,418 |
| 4 | MICRON TECHNOLOGY, INC. - LEHI DIVISION | 168,000 |
| 5 | TYCO PRINTED CIRCUIT GROUP, LP ., LOGAN DIVISION | 161,336 |
| 6 | SCHREIBER FOODS, INC. | 160,000 |
| 7 | NESTLE USA - PREPARED FOODS DIVISION, INC. | 104,430 |
| 8 | FAIRCHILD SEMICONDUCTOR | 51,084 |
| 9 | SMITHS FOOD & DRUG DAIRY DIVISION OF KROGER CORPORATION | 49,765 |
| 10 | MEADOW GOLD DAIRY | 46,265 |

TABLE 16

Top 10 Chemicals Transferred to POTWs

| | <u>Chemical Name</u> | <u>Lbs/Year</u> |
|----|------------------------|-----------------|
| 1 | Nitrate compounds | 1,348,849 |
| 2 | Nitric acid | 125,792 |
| 3 | Ammonia | 85,836 |
| 4 | Glycol Ethers | 36,698 |
| 5 | Toluene | 12,310 |
| 6 | Xylene (mixed) | 10,562 |
| 7 | Benzene | 8,036 |
| 8 | Zinc Compounds | 2,589 |
| 9 | 1,2,4-Trimethylbenzene | 990 |
| 10 | Manganese Compounds | 750 |

UTAH FACILITY TRANSFERS TO OTHER OFF-SITE LOCATIONS

TABLE 17

Top 10 Facilities Transferring Chemicals Off-site

| Facility Name | Lbs/Year |
|--|-----------|
| 1 NUCOR STEEL -A DIVISION OF NUCOR CORPORATION | 7,265,524 |
| 2 CERROWIRE & CABLE CO. | 1,800,024 |
| 3 CLEAN HARBORS ARAGONITE, LLC. | 1,732,752 |
| 4 ELKAY WEST | 707,647 |
| 5 THATCHER COMPANY | 616,851 |
| 6 JOHNSON MATTHEY | 452,831 |
| 7 UNIVERSAL INDUSTRIAL SALES INC | 399,205 |
| 8 HEXCEL CORPORATION | 372,135 |
| 9 PACIFIC STATES CAST IRON PIPE COMPANY | 272,002 |
| 10 DANNON COMPANY, THE | 223,316 |

TABLE 18

Top 10 Chemicals Transferred to Off-site Facilities

| Chemical Name | Lbs/Year |
|-----------------------|--------------|
| 1 Zinc Compounds | 6,936,087.30 |
| 2 Nitrate compounds | 2,116,476 |
| 3 Copper | 1,920,766 |
| 4 Lead Compounds | 809,279 |
| 5 Nickel | 709,271 |
| 6 Manganese Compounds | 707,552 |
| 7 Chromium | 631,137 |
| 8 Copper Compounds | 531,075 |
| 9 Chromium Compounds | 357,227 |
| 10 Nitric acid | 312,456 |

FIGURE 11

Utah 2012 TRI Chemical Transfers
by Final Disposition Type

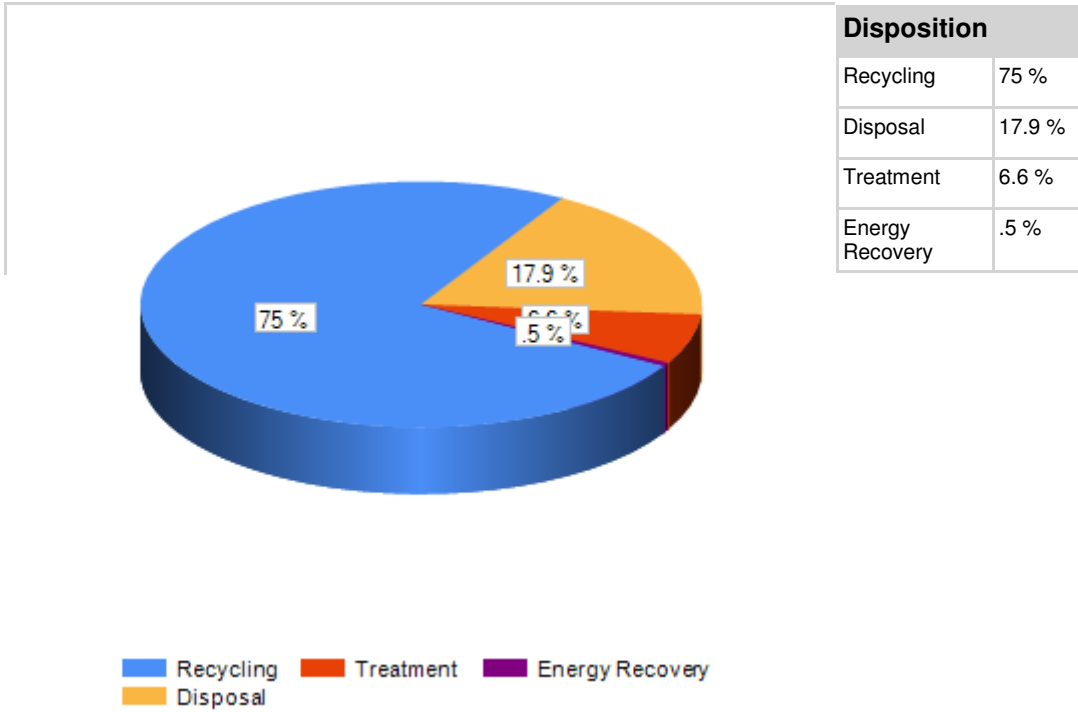


Figure 12

Utah 2012 TRI Chemicals Transferred
to Other States

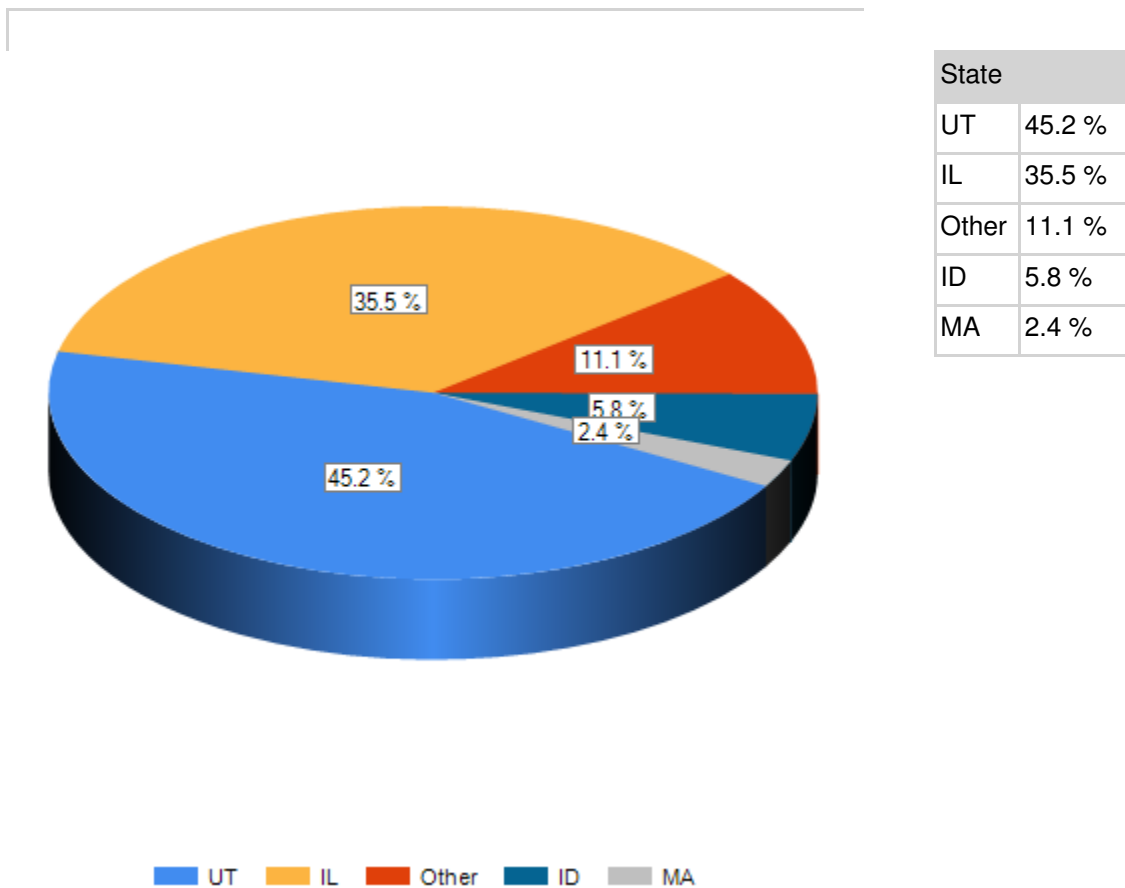
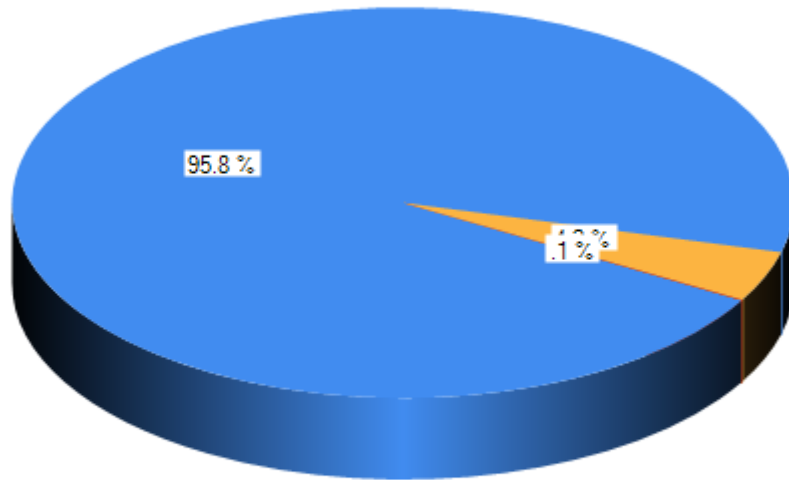


Figure 13

Utah 2012 TRI Total On-site Releases By Media



| Media | |
|-------|--------|
| Land | 95.8 % |
| Air | 4.2 % |
| Water | .1 % |

■ Land ■ Air ■ Water

PERSISTENT BIOACCUMULATIVE TOXIC (PBT) CHEMICALS

TABLE 19

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

| # | Facility | O N S I T E | | | | OFFSITE | Grand Total |
|---------------|--|-------------|--------------|------------------|-------------------|--------------|------------------|
| | | Total Water | Total Air | Total Land | Subtotal Releases | Offsite | |
| 1 | US MAGNESIUM, LLC | 0.00 | 15.83 | 13659.93 | 13,675.76 | 24.31 | 13700.07 |
| 2 | WESTERN ZIRCONIUM | 0.00 | 0.00 | 0.13 | 0.13 | 13.85 | 13.98 |
| 3 | INTERMOUNTAIN POWER GENERATING STATION | 0.00 | 1.51 | 5.22 | 6.74 | 0.00 | 6.74 |
| 4 | PACIFICORP HUNTER PLANT | 0.00 | 0.62 | 0.00 | 0.62 | 0.00 | 0.62 |
| 5 | SUNNYSIDE COGENERATION ASSOCIATES | 0.00 | 0.62 | 0.00 | 0.62 | 0.00 | 0.62 |
| 6 | PACIFICORP - HUNTINGTON PLANT | 0.00 | 0.44 | 0.00 | 0.44 | 0.00 | 0.44 |
| 7 | KENNECOTT UTAH COPPER MINE, CONCENTRATORS, & POWER PLANT | 0.00 | 0.29 | 0.00 | 0.29 | 0.00 | 0.29 |
| 8 | HOLCIM (US) INC., DEVIL'S SLIDE PLANT | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | 0.20 |
| 9 | CHEVRON PRODUCTS COMPANY- SALT LAKE REFINERY | 0.10 | 0.10 | 0.00 | 0.20 | 0.00 | 0.20 |
| 10 | CLEAN HARBORS ARAGONITE, LLC. | 0.00 | 0.20 | 0.00 | 0.20 | 0.00 | 0.20 |
| 11 | ASH GROVE CEMENT COMPANY | 0.00 | 0.10 | 0.00 | 0.10 | 0.00 | 0.10 |
| 12 | PACIFICORP - CARBON PLANT | 0.00 | 0.10 | 0.00 | 0.10 | 0.00 | 0.10 |
| 13 | TESORO REFINING AND MARKETING COMPANY | 0.00 | 0.05 | 0.00 | 0.05 | 0.00 | 0.05 |
| 14 | KENNECOTT UTAH COPPER SMELTER & REFINERY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 15 | THE PROCTER & GAMBLE PAPER PRODUCTS COMPANY | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Totals | | 0.10 | 20.07 | 13,665.28 | 13,685.46 | 38.16 | 13,723.62 |

The Bonanza Power Plant facility reported a release amount of 0.0014353 grams for dioxin and dioxin-like compounds. This represents 1.05×10^{-5} percent of the 13,723.47 grams total of dioxins reported statewide. The GraymontWestern US Inc. facility is part of a facility related pair as explained above in the section of this report titled *Excluded Data*. Graymont was not included in the statistics presented in this report. Graymont reported total aggregate releases of Dioxin and dioxin-like compounds at 0.242 grams.

SUMMARY

Trends recognized in the Toxic Release Inventory data for reporting year 2012 may be summarized as follows:

- *Total On-site and Off-site Releases* decreased by 3.6% from 198 million pounds to 191 million pounds showing a decrease of about 7 million pounds.
- *Total Releases to Air* decreased by about 30% from 11 million pounds to just under 8 showing a decrease of 3 million pounds. Chemicals ranked first and second for quantities released to air were chlorine and hydrochloric acid (aerosol forms only), respectively.
- *Total Releases to Land* decreased by 1.6 % from 183 million pounds to 180 million pounds showing a decrease of slightly less than 3 million pounds. Kennecott releases to land decreased slightly by about 391,600 pounds. Kennecott releases represent about 93.3% of total releases to land reported state-wide.
- *Total Releases to Surfaces Water* decreased by 79% from 492,000 pounds to 105,000 pounds in the current report year. Nitrate compounds comprise about 87% of the total releases and metals compounds make up about 12% of the total releases to surface waters state-wide.
- *Total Transfers to Publicly Owned Treatment Works* decreased by about 8.5% from 1.8 million pounds to approximately 1.6 million pounds for the reporting year. The greatest percentage of chemicals transferred was nitrate compounds.
- *Transfers Off-site* to treatment, storage & disposal facilities, which typically include chemical recyclers and waste disposal facilities, increased by 0.27%, but remained similar to last year's total at 18.0 million pounds.
- The most notable persistent bioaccumulative Toxic (PBT) chemical category is dioxin and dioxin-like compounds. Dioxin and dioxin-like compounds are unique in that they comprise the only chemical/chemical category in the TRI program in which the releases are reported in grams. Releases of PBT chemicals, dioxin and dioxin-like compounds, showed an increase of about 88% from 7,291.26 grams to 13,723.62 grams in the current report year.
 - The total release amount reported by US Magnesium for dioxin and dioxin-like chemicals on-site and off-site is 13,700.07 grams. This amount comprises 99.8% of the total amount released by all facilities in Utah.
 - Total on-site releases to land, air and water were 13,665.28 grams, 20.07 grams and 0.10 grams, respectively, for a total on-site release amount of 13,685.46 grams. The total off-site release reported was 38.16 grams. On-site releases to land constitute 99.6% of the total on-site and off-site amounts reported.