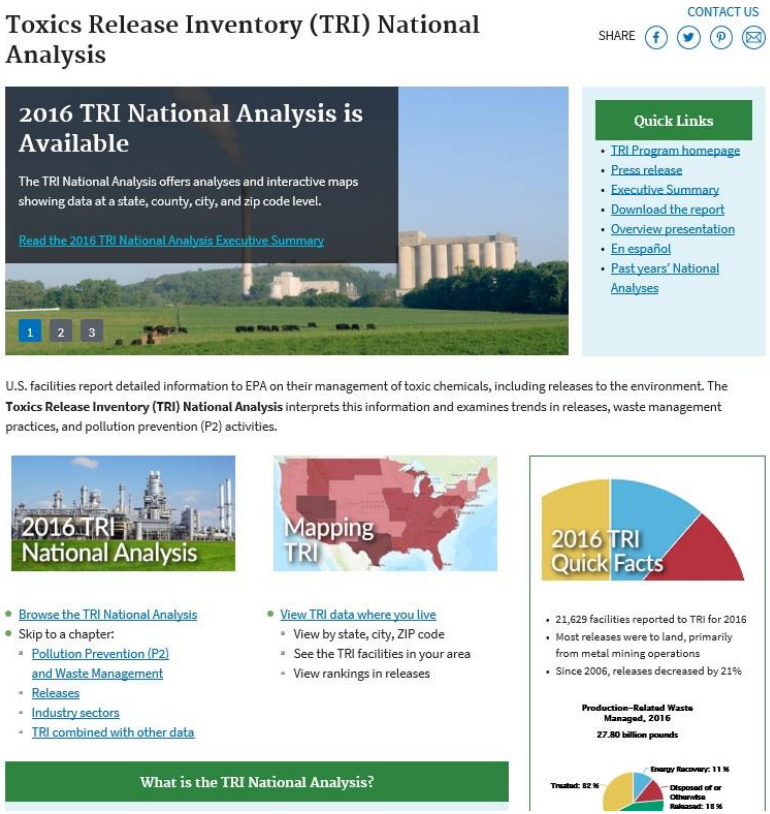
Introduction to the
Toxics Release Inventory and the 2016 TRI National Analysis Report



Overview

- Introduction to TRI
- Reporting Year 2016 TRI National Analysis
- Updated web-based report
- Custom data visualization
- Using TRI Explorer to analyze TRI data
- Questions & Discussion

Why was the Toxics Release Inventory created?

Bhopal memorial for those killed and disabled by the 1984 toxic gas release

Bhopal, India **December 1984**

- Methyl isocyanate gas released at a Union Carbide chemical plant
- Thousands died the first night
- Thousands more have died due to long-term health effects
- Survivors continue to suffer with permanent disabilities

Institute, West Virginia **August 1985**

- Chemical release at a similar facility in the U.S.
- Over 100 people hospitalized

Increased concern in the U.S. about chemical accident preparedness and availability of information on toxic chemical releases from industrial facilities

What is the Toxics Release Inventory (TRI)?

- TRI tracks the waste management of certain toxic chemicals that pose a threat to human health and the environment.
- TRI includes information on:

Releases

Waste transfers

Recycling

Pollution prevention

And much more!

What is a “release”?

- A **"release"** refers to different ways that toxic chemicals from industrial facilities enter the:


Air

Water

Land

- The likelihood of residents coming into contact with toxic chemicals depends on the type of release and other factors

For more information, see “*Factors to Consider When Using TRI Data”* at: https://www.epa.gov/toxics-release-inventory-tri-program/factors-consider-when-using-toxics-release-inventory-data

Which facilities must report to TRI?

1. Facility must be in a TRI-covered industry sector or category, including:

Manufacturing

Coal/Oil electricity generation

Certain Mining Facilities

Hazardous Waste Management

Federal Facilities

2. Facility must have the equivalent of at least 10 full-time employees
3. Facility must manufacture, process or use more than a certain amount of a TRI toxic chemical per year

What information do facilities report to TRI?

- On-site releases of TRI chemicals to:
  - Air
  - Water
  - Land

- Transfers of chemical waste to off-site locations

- Other waste management:
  - Recycling
  - Treatment
  - Energy Recovery

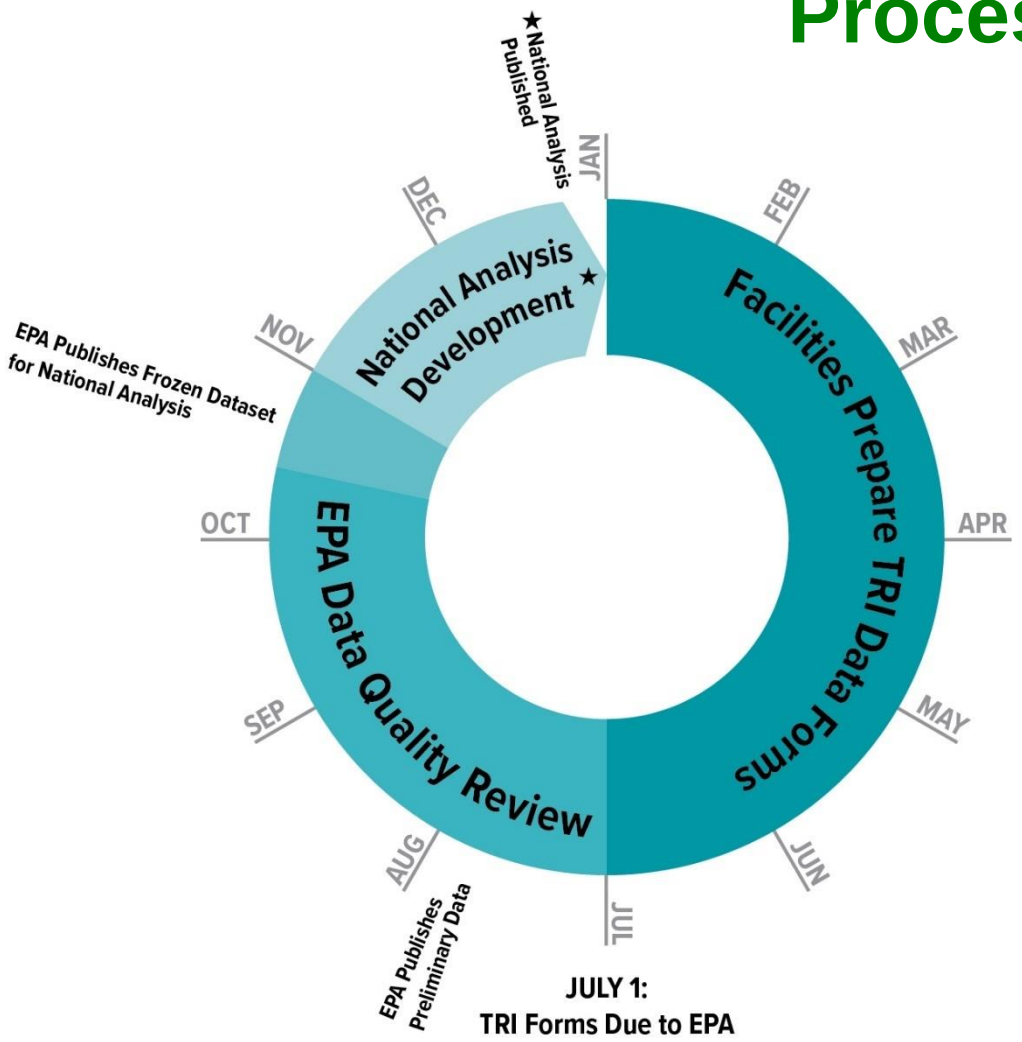
- Pollution prevention activities (www.epa.gov/tri/p2)

Considerations When Using TRI

- TRI covers an important subset of toxic chemicals managed at U.S. facilities, but doesn't cover all chemicals or facilities
- Data reflect annual totals and don't indicate the frequency or duration of a release
- Quantities reflect chemicals released into air and water and managed through recycling, energy recovery, treatment and disposal
- Toxicity level varies among the chemicals on the TRI list
- TRI doesn't include information about public exposure to chemicals
- TRI facility operations and releases are regulated under other EPA programs with requirements designed to limit human and environmental harm

For more information, see *"Factors to Consider When Using TRI Data"* at: https://www.epa.gov/toxics-release-inventory-tri-program/factors-consider-when-using-toxics-release-inventory-data

Annual TRI Cycle and Data Quality Process



- Facilities submit their TRI forms for each calendar year to EPA by July 1st of the following year
- The preliminary TRI dataset is released in July
- EPA conducts data quality checks and compliance assistance activities from July - October
- The TRI National Analysis (EPA's official annual TRI report) is published in January

TRI Preliminary Dataset

- Most recent TRI data available in July in Envirofacts and downloadable data files
- Dataset ~ 95% complete in July
- Opportunity to see most recent data prior to National Analysis publication
- Can be used to begin looking at facility-level data
- Dataset updated several times during summer and fall as EPA processes late TRI submissions and revisions, and performs data quality checks

TRI National Analysis

Toxics Release Inventory (TRI) National Analysis

CONTACT US

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2016 TRI National Analysis is Available

The TRI National Analysis offers analyses and interactive maps showing data at a state, county, city, and zip code level.

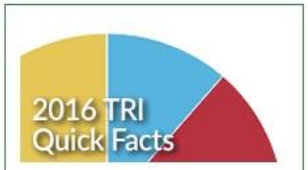
Read the 2016 TRI National Analysis Executive Summary

1 2 3

Quick Links

- TRI Program homepage
- Press release
- Executive Summary
- Download the report
- Overview presentation
- En español
- Past years' National Analyses

U.S. facilities report detailed information to EPA on their management of toxic chemicals, including releases to the environment. The **Toxics Release Inventory (TRI) National Analysis** interprets this information and examines trends in releases, waste management practices, and pollution prevention (P2) activities.



- Browse the TRI National Analysis
- Skip to a chapter:
  - Pollution Prevention (P2) and Waste Management
  - Releases
  - Industry sectors
  - TRI combined with other data

- View TRI data where you live
  - View by state, city, ZIP code
  - See the TRI facilities in your area
  - View rankings in releases

- 21,629 facilities reported to TRI for 2016
- Most releases were to land, primarily from metal mining operations
- Since 2006, releases decreased by 21%

Production-Related Waste Managed, 2016

27.80 billion pounds

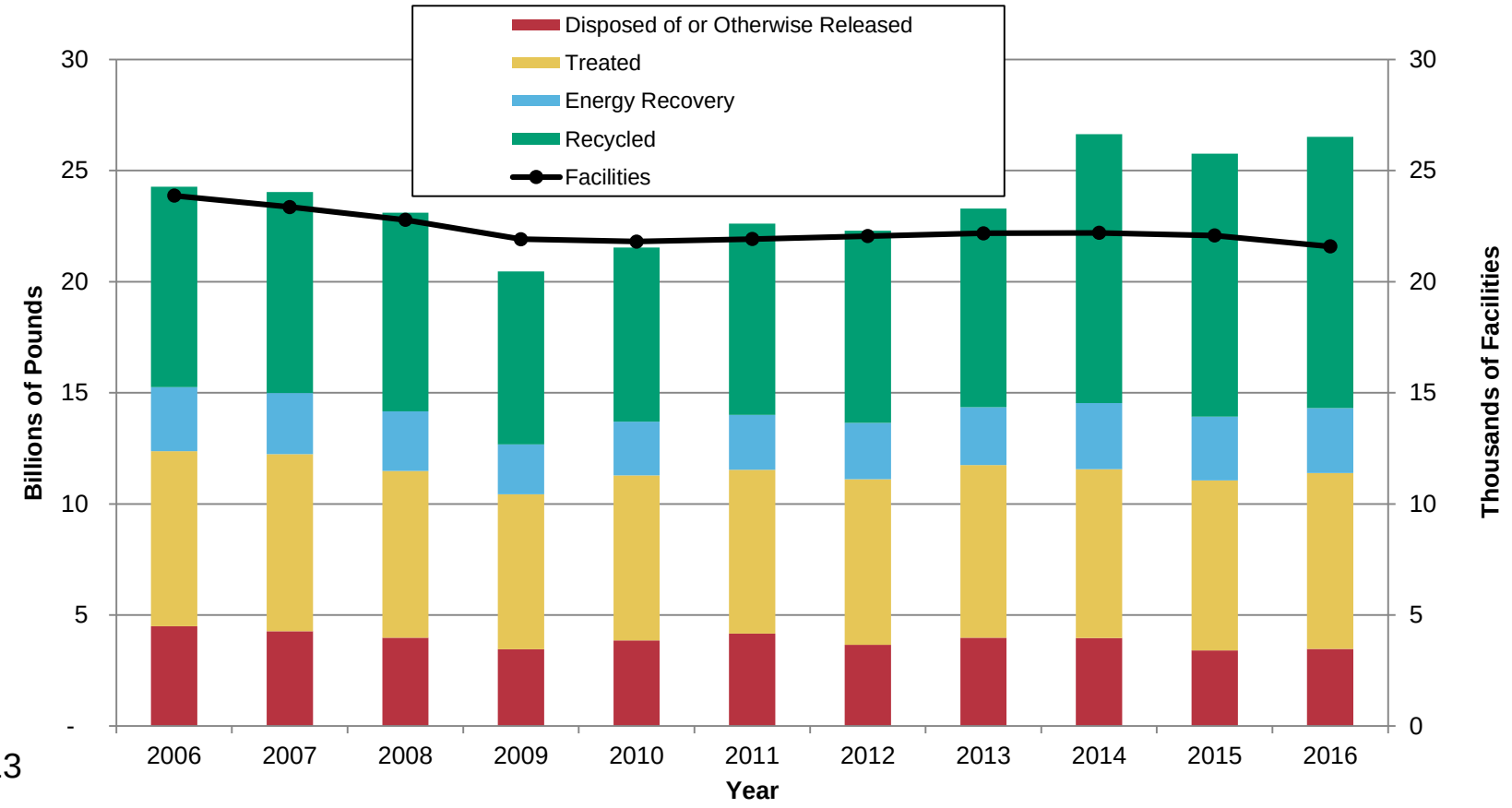
What is the TRI National Analysis?

Summary of the 2016 TRI National Analysis

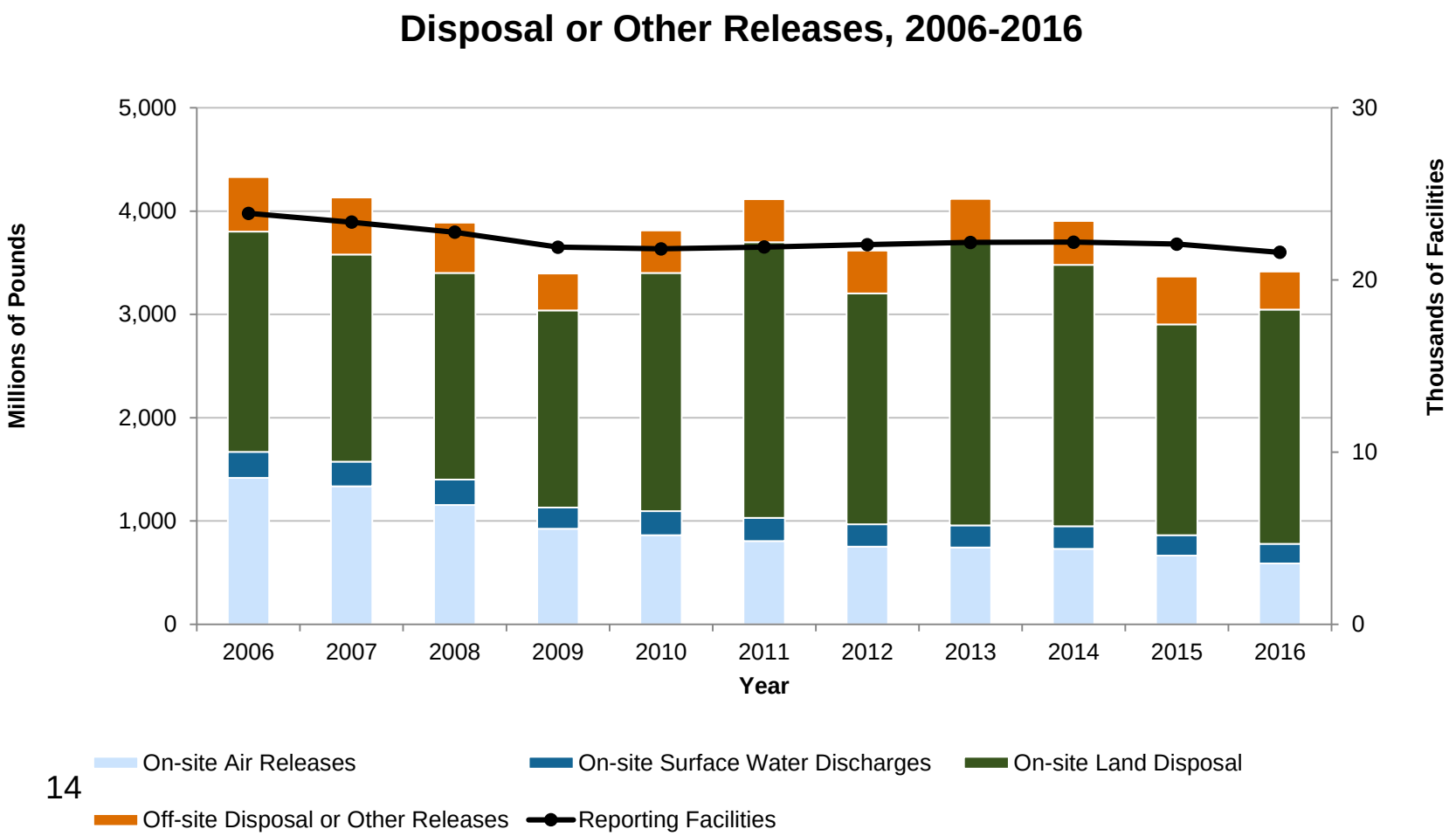
- Total production-related waste increased 2% from 2015-2016
  - All waste management activities increased by 2% - 3%
  - Of 27.8 billion pounds of waste managed, 24.3 billion pounds (87%) were not released due to preferred waste management practices like recycling
- Total disposal or other releases increased 1% from 2015-2016
  - Land disposal increased – Metal mines
  - Air releases decreased – Electric utilities and paper manufacturing
  - 2016: Of the 3.1 billion lb released on-site, 2.3 billion pounds (74%) were released to land, 610 million pounds (20%) to air, and 191 million pounds (6%) to water
- New this year:
  - Explore off-site transfers via an embedded QlikSense dashboard
  - Demonstrate the synergy of TRI and CDR (2016 now available) for TSCA chemicals
  - Enhanced visualization of EasyRSEI hazard and relative potential risk information via Qlik
  - Expanded access to tribal information via new Qlik dashboard
  - Highlighting TRI as an international model
  - Analysis of mercury release trend at electric utilities
  - Highlight the pollution prevention achievements by the pharmaceutical sector

Waste Management Trends in the 2016 National Analysis

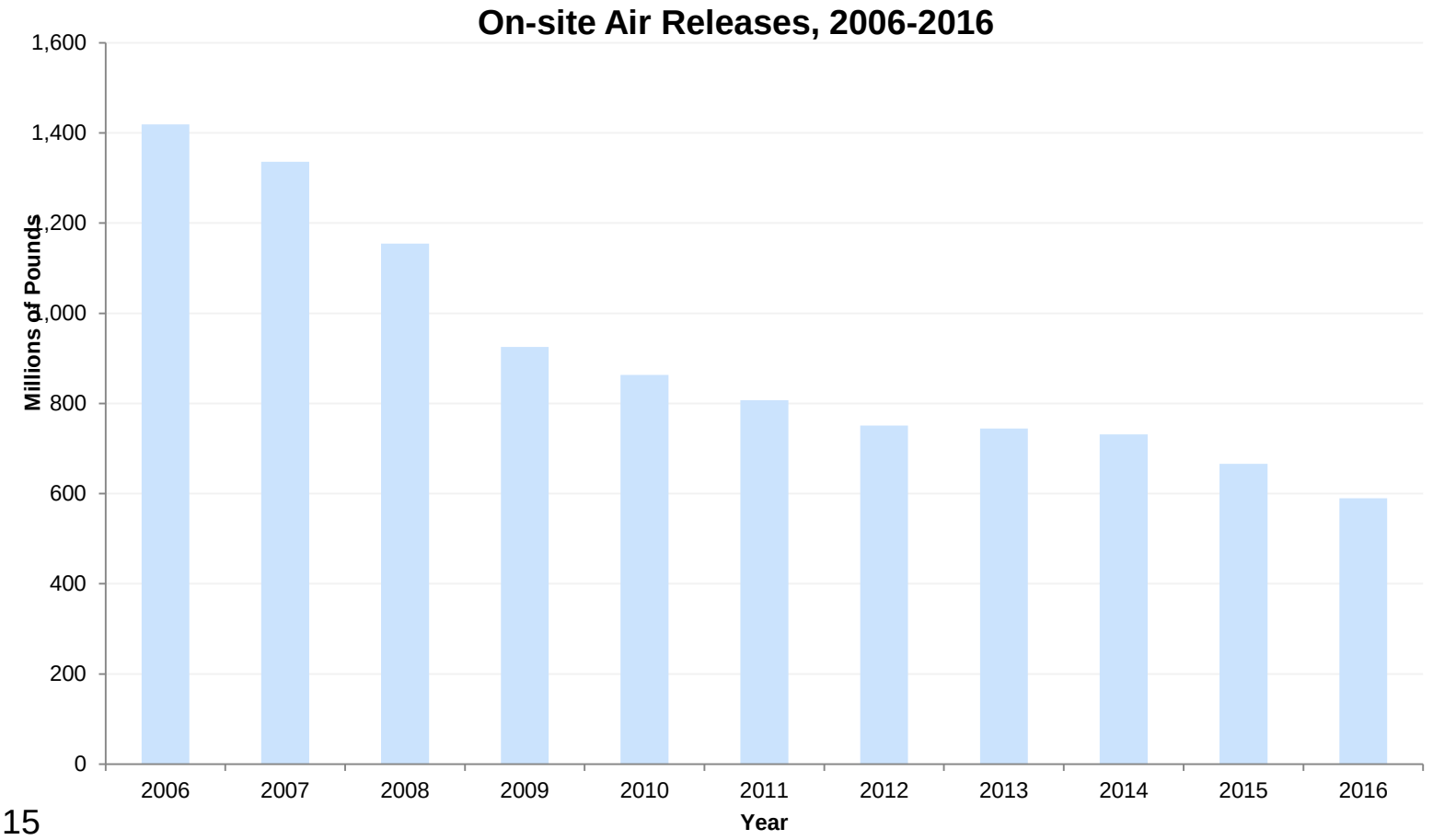
Production-Related Waste Managed, 2006-2016



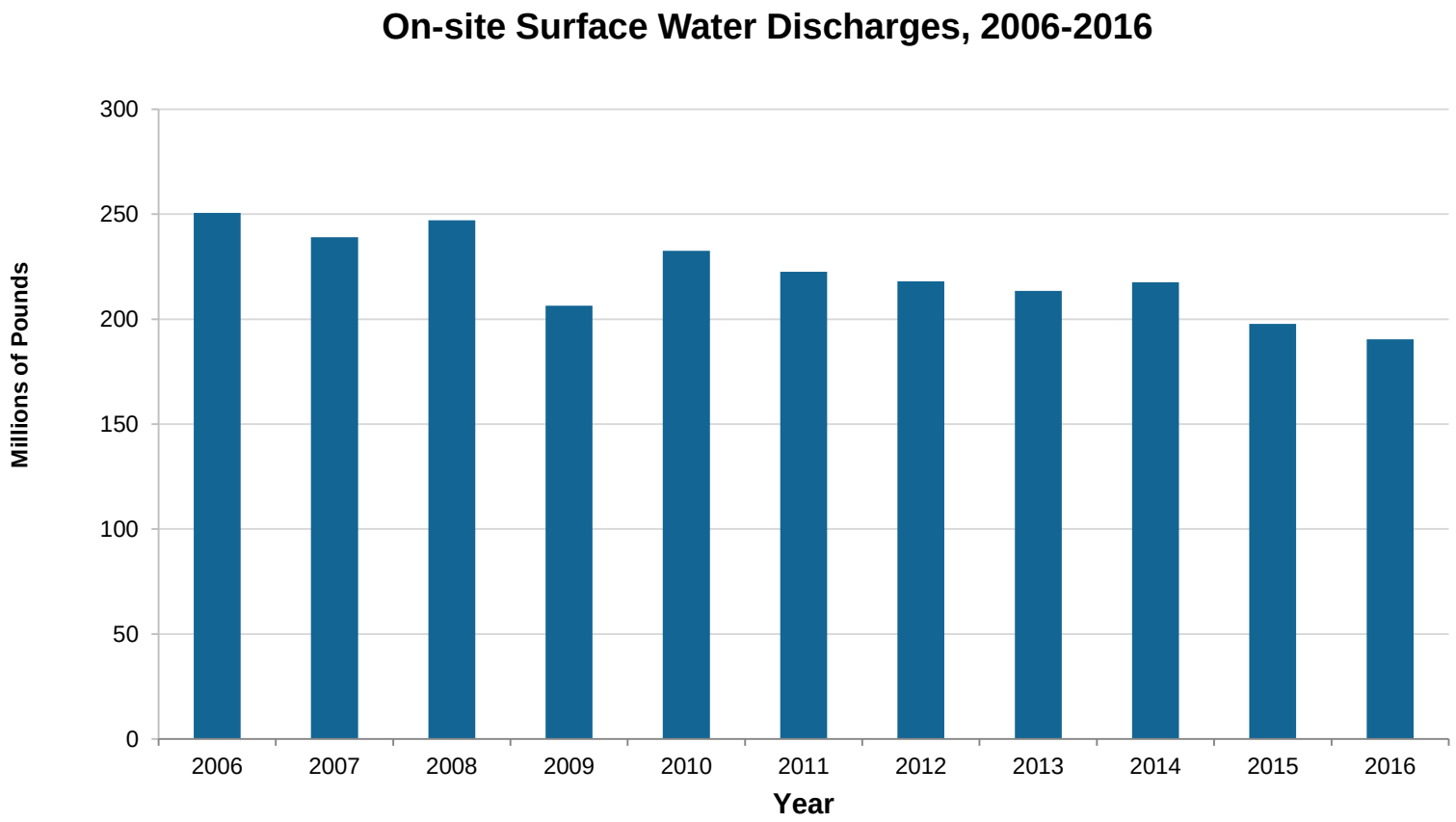
Chemical Release Trends in the 2016 National Analysis



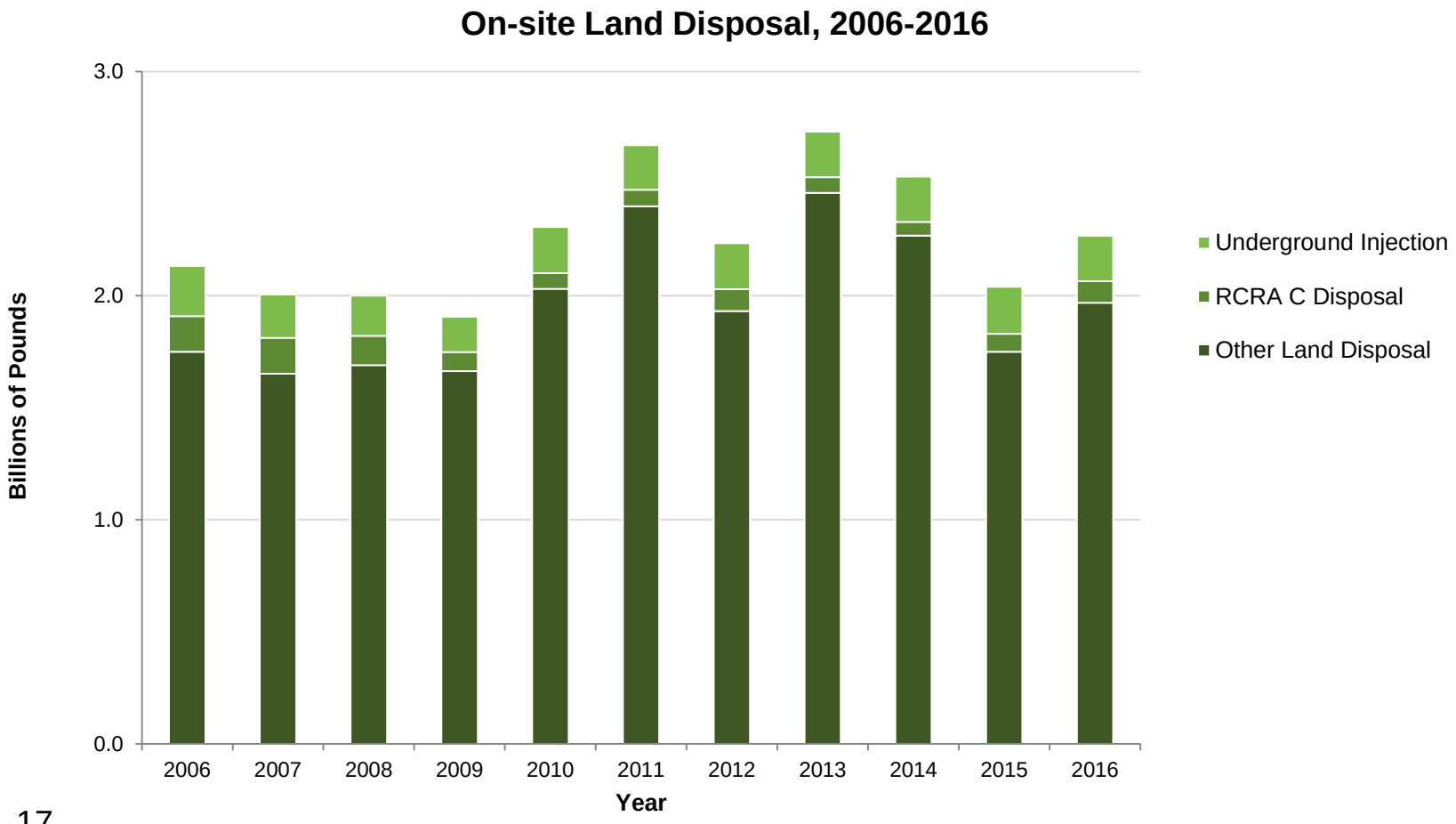
Trends – Air Releases



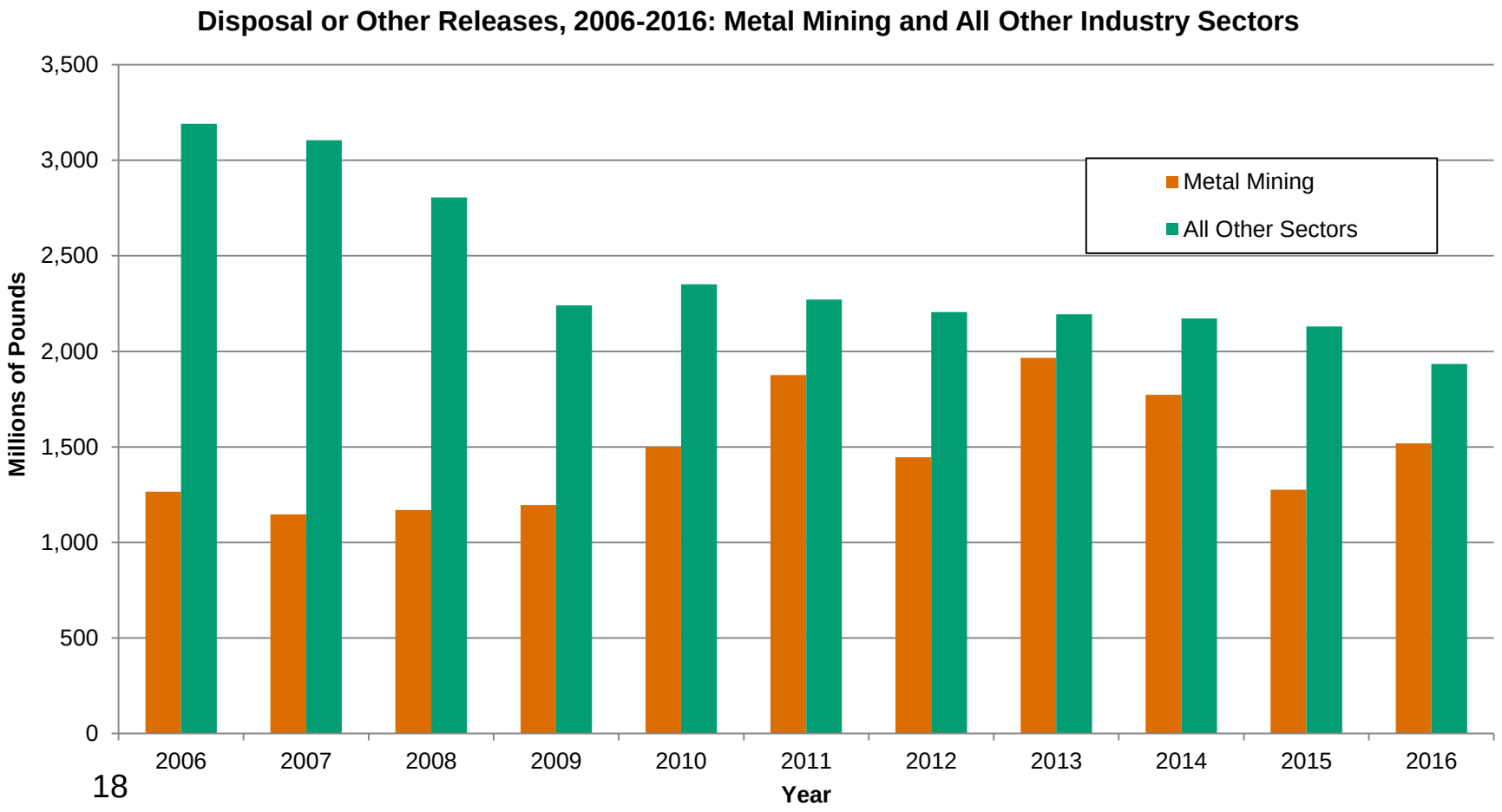
Trends – Water Releases



Trends – Land Releases

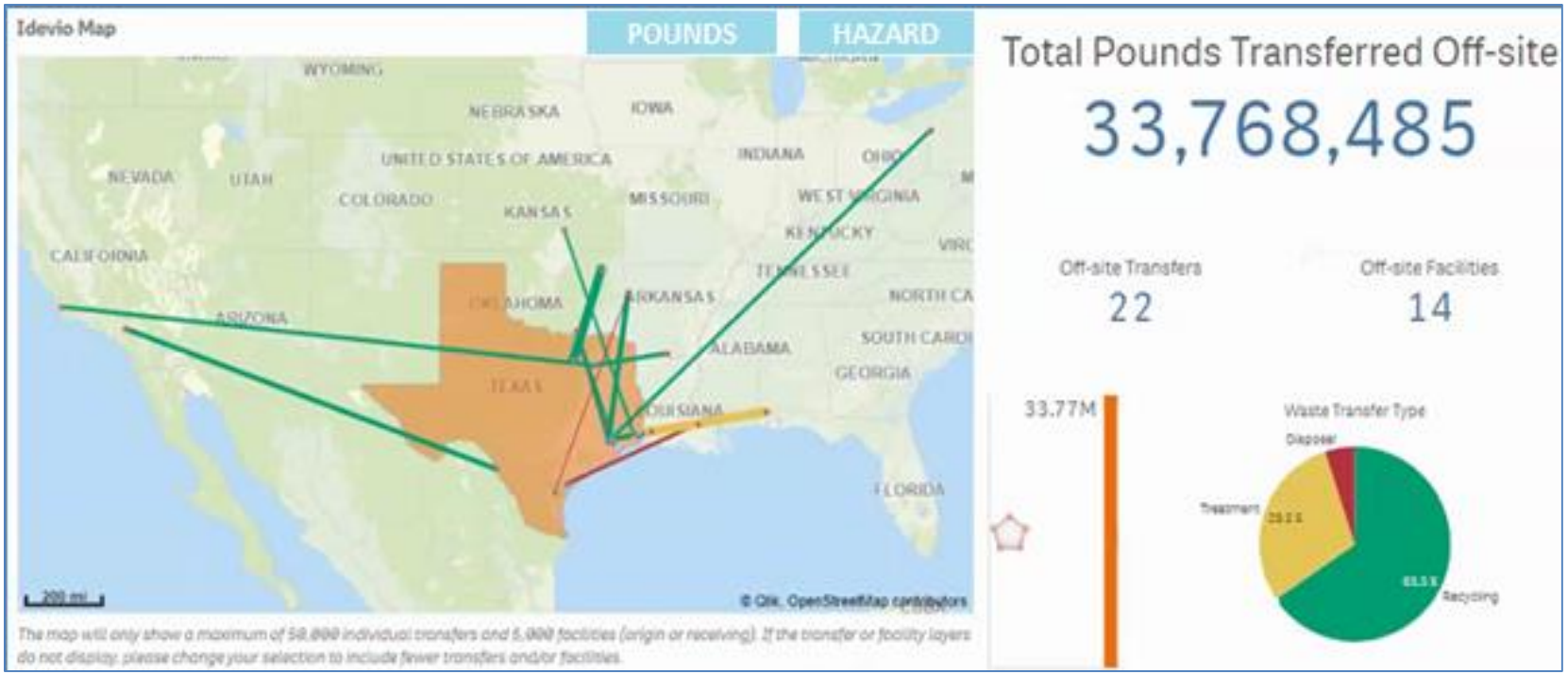


Trends – Metal Mining & Other Industry Sectors



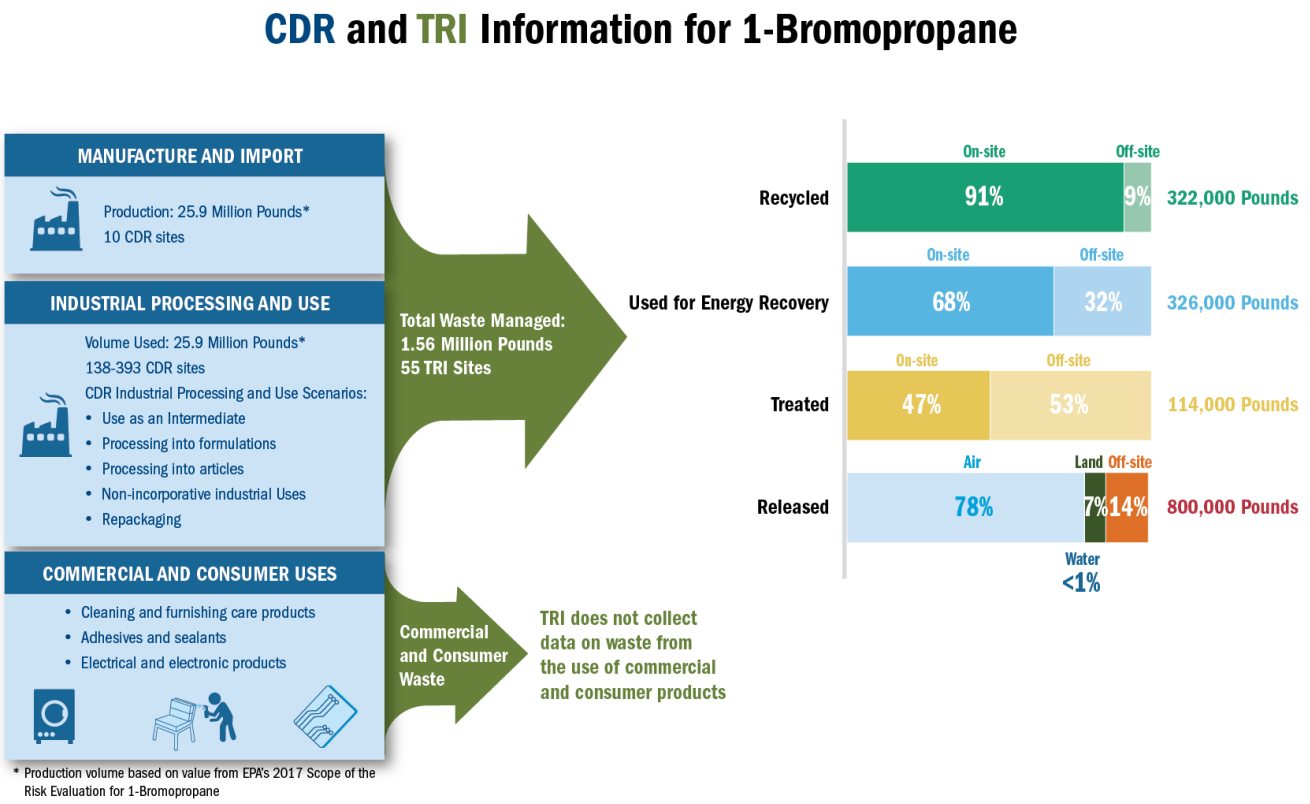
New Feature: QlikSense Transfers

- New: Embedded Qlik frame for TRI transfers
  - In the Waste Management section
  - Allows users to view the transfers for any chemical or sector
  - Promotes user interactivity in exploring TRI data



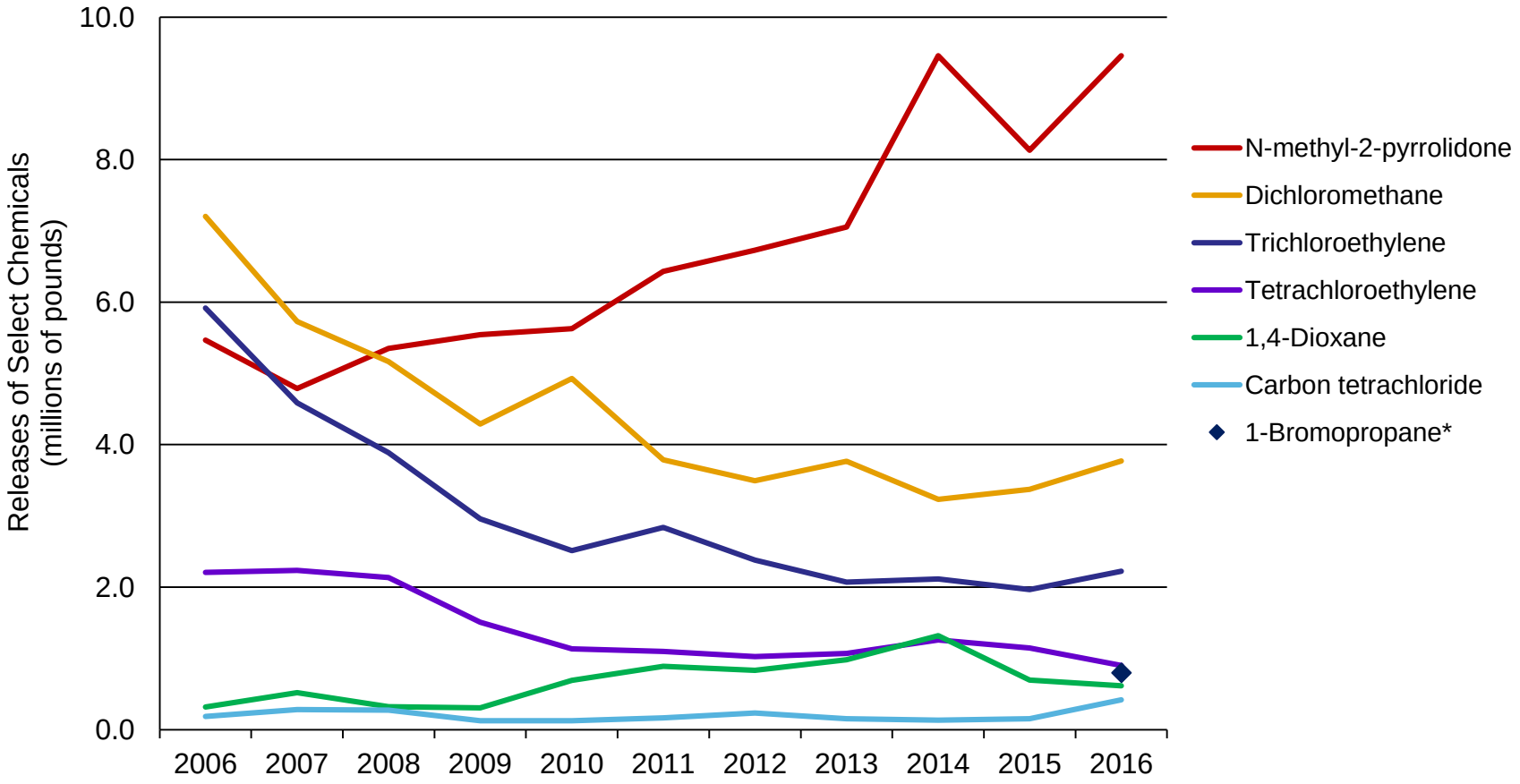
New Analysis: TRI and TSCA

- Information on TSCA workplan chemicals covered by TRI
- CDR data (2015 data now available) complement TRI data
- Illustrates complementary CDR and TRI data for 1-bromopropane (a TSCA work plan chemical)



New Analysis: TRI and TSCA

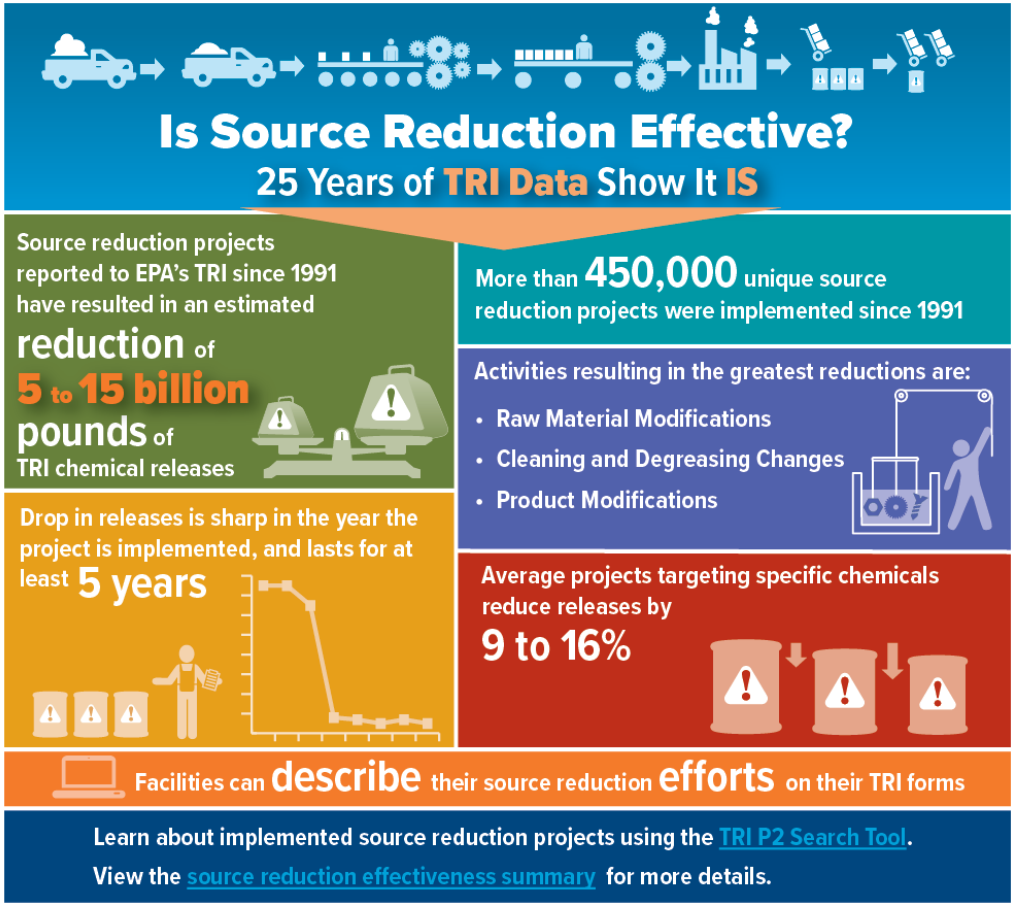
Releases of TRI Chemicals Undergoing TSCA Risk Evaluation



*1-Bromopropane was reported for the first time in 2016.

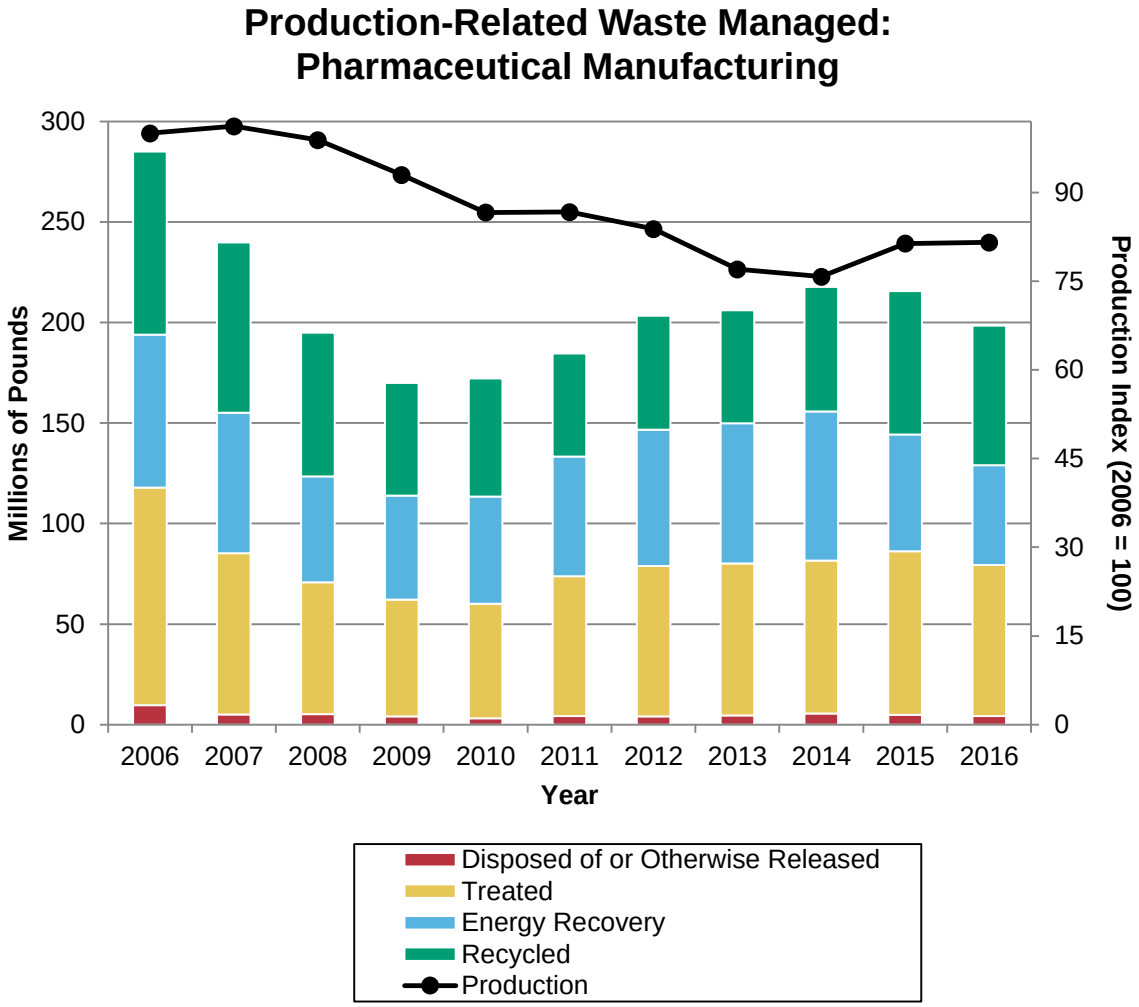
New Feature: Infographic on Source Reduction

- TRI source reduction impacts quantified



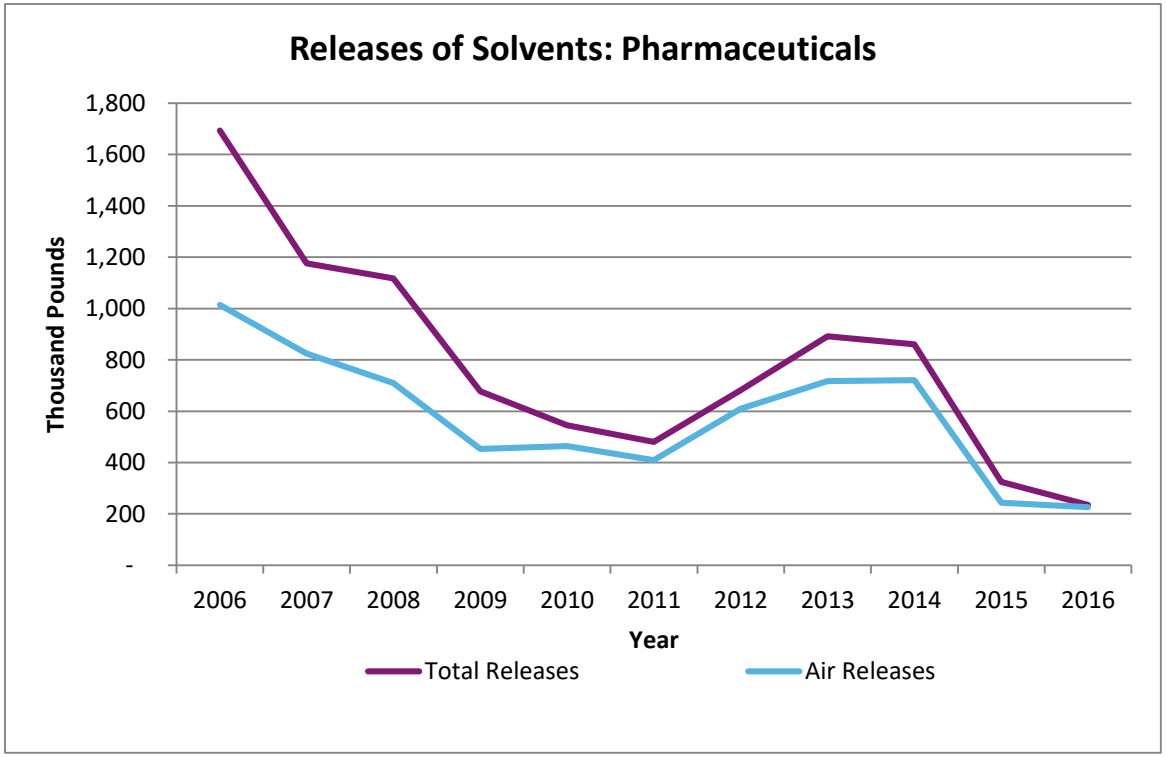
New Analysis: Pharmaceutical Sector

- Releases have decreased by 56% since 2006
- PRW has decreased by 30% since 2006
- Reductions driven by reduced use of and waste from solvents

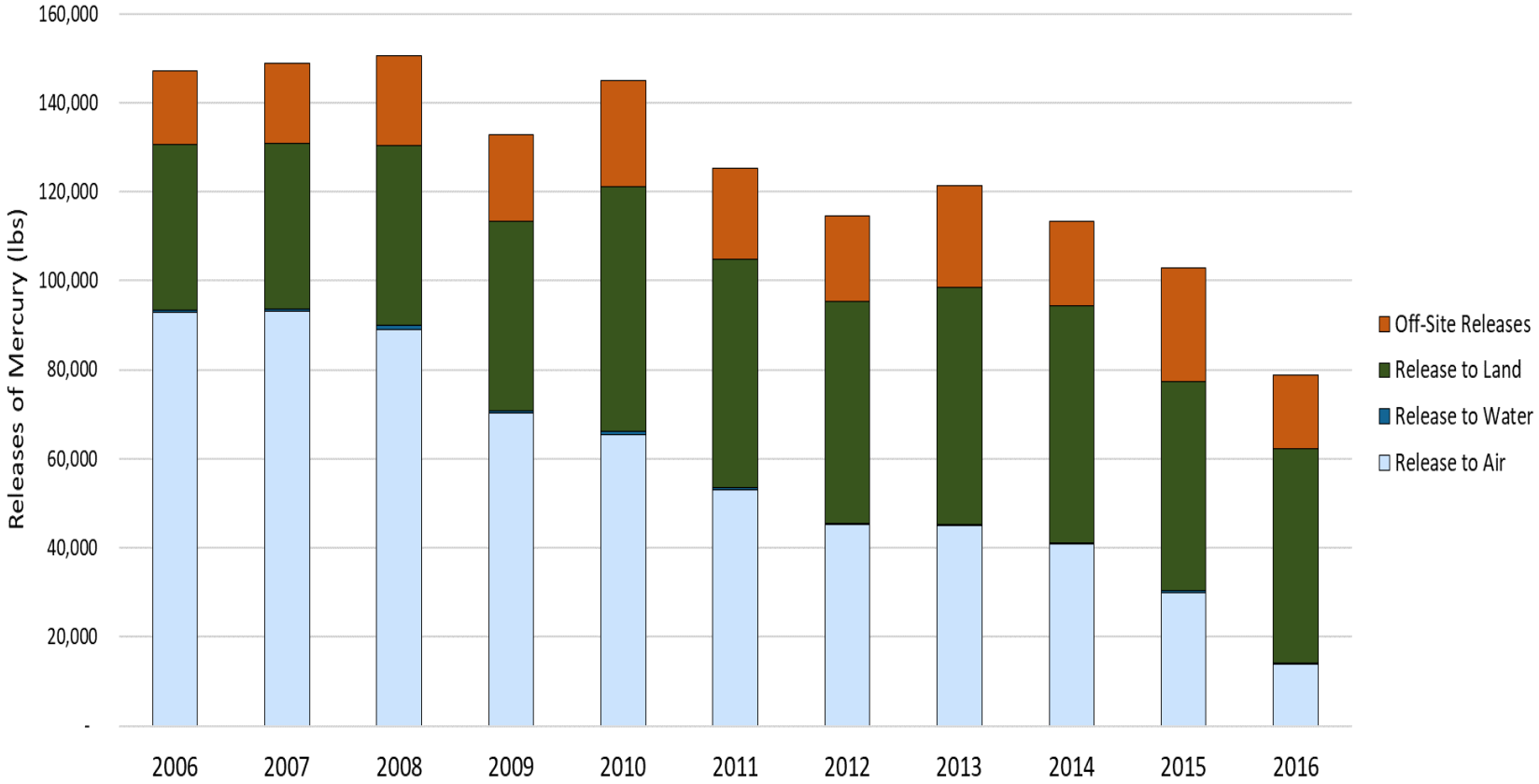


New Analysis: Pharmaceutical Sector

- Releases of 20 key solvents have decreased by 86% since 2006
- Dichloromethane is the primary solvent released
- Organic solvents are used extensively in the sector as reaction media and in separation and purification of synthesis products

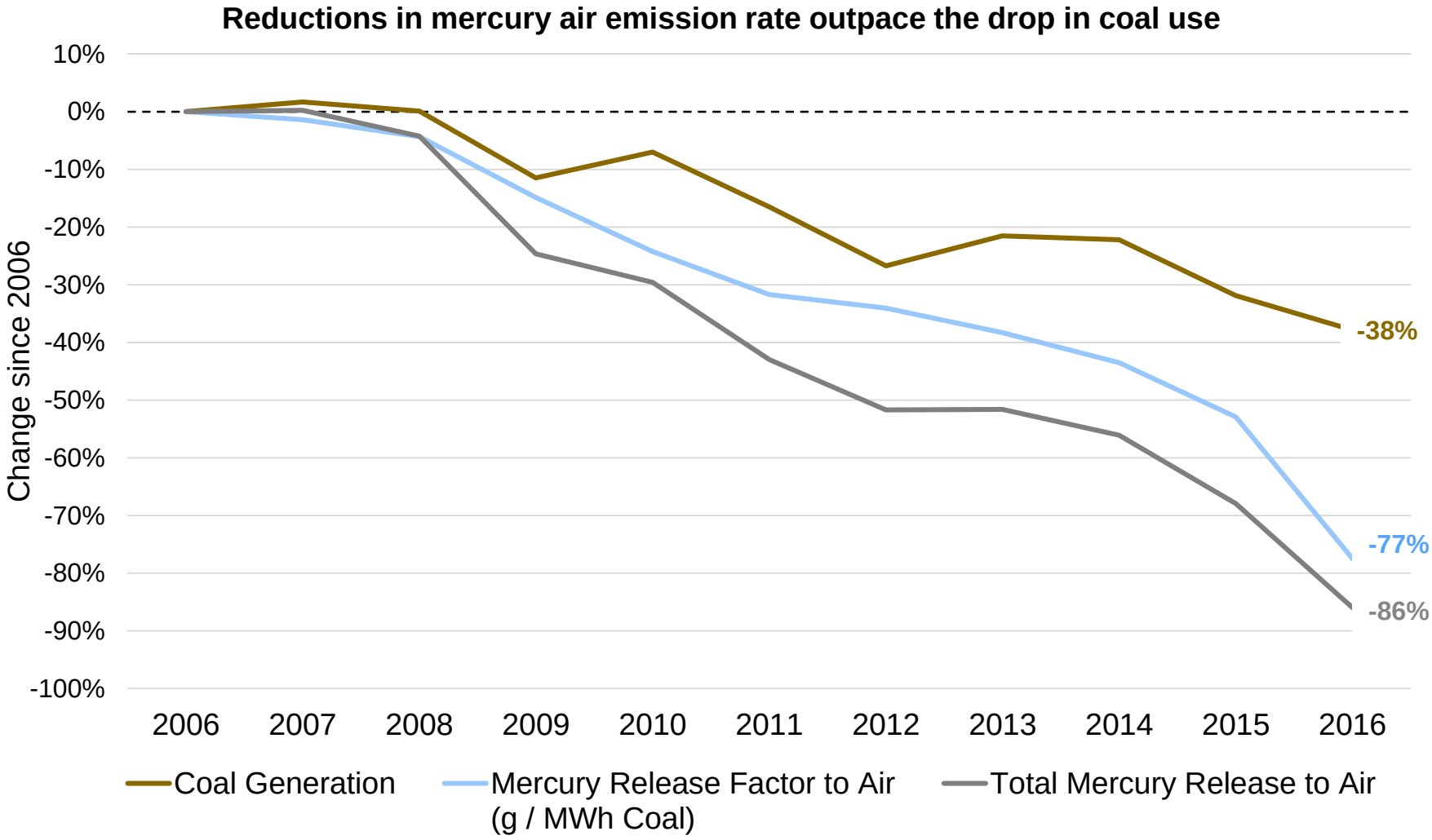


New Analysis: Mercury Emissions from Electric Utilities



Mercury releases dropped by 46% since 2006, driven by reduced air emissions

New Analysis: Mercury Emissions from Electric Utilities



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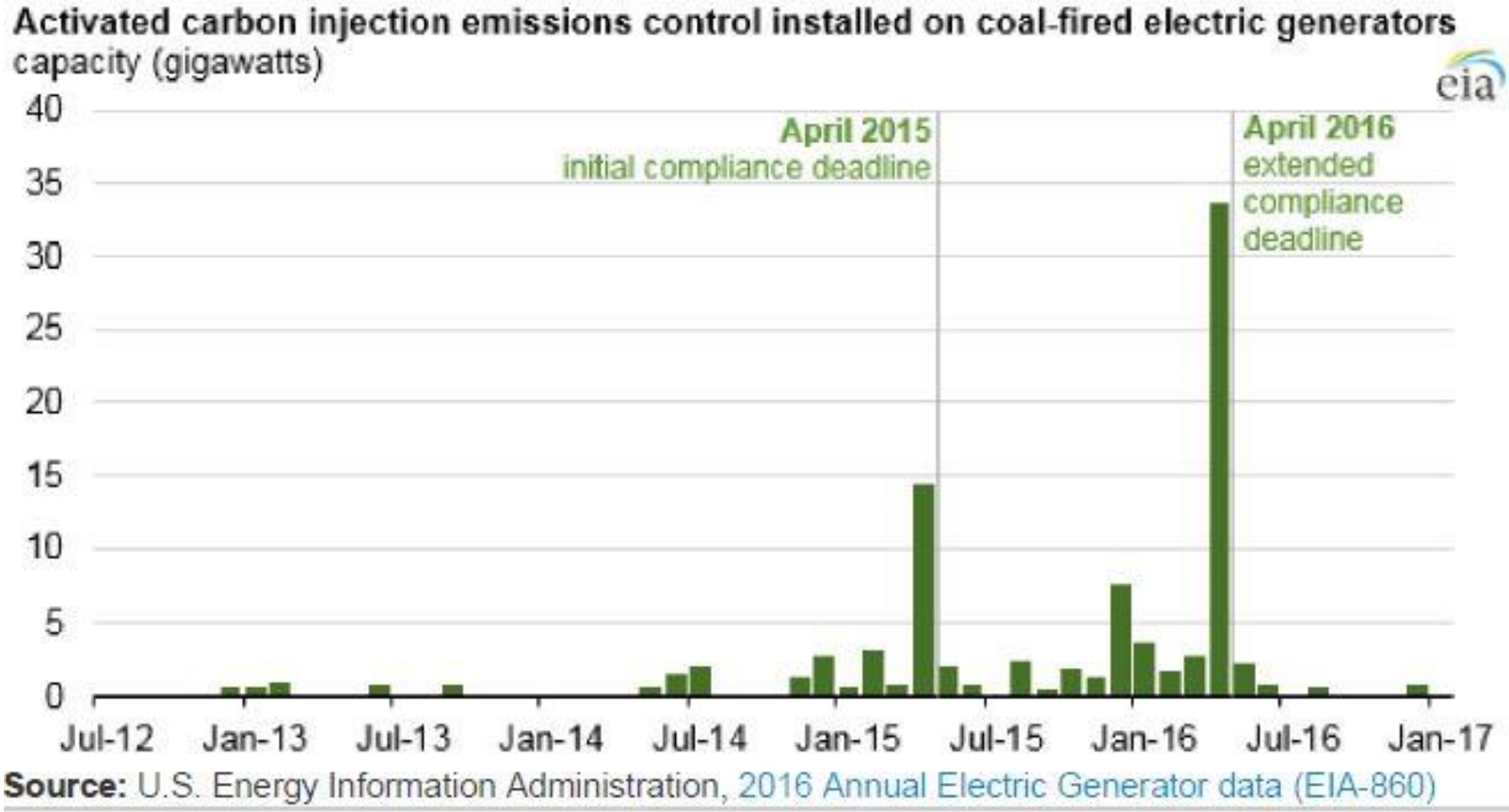


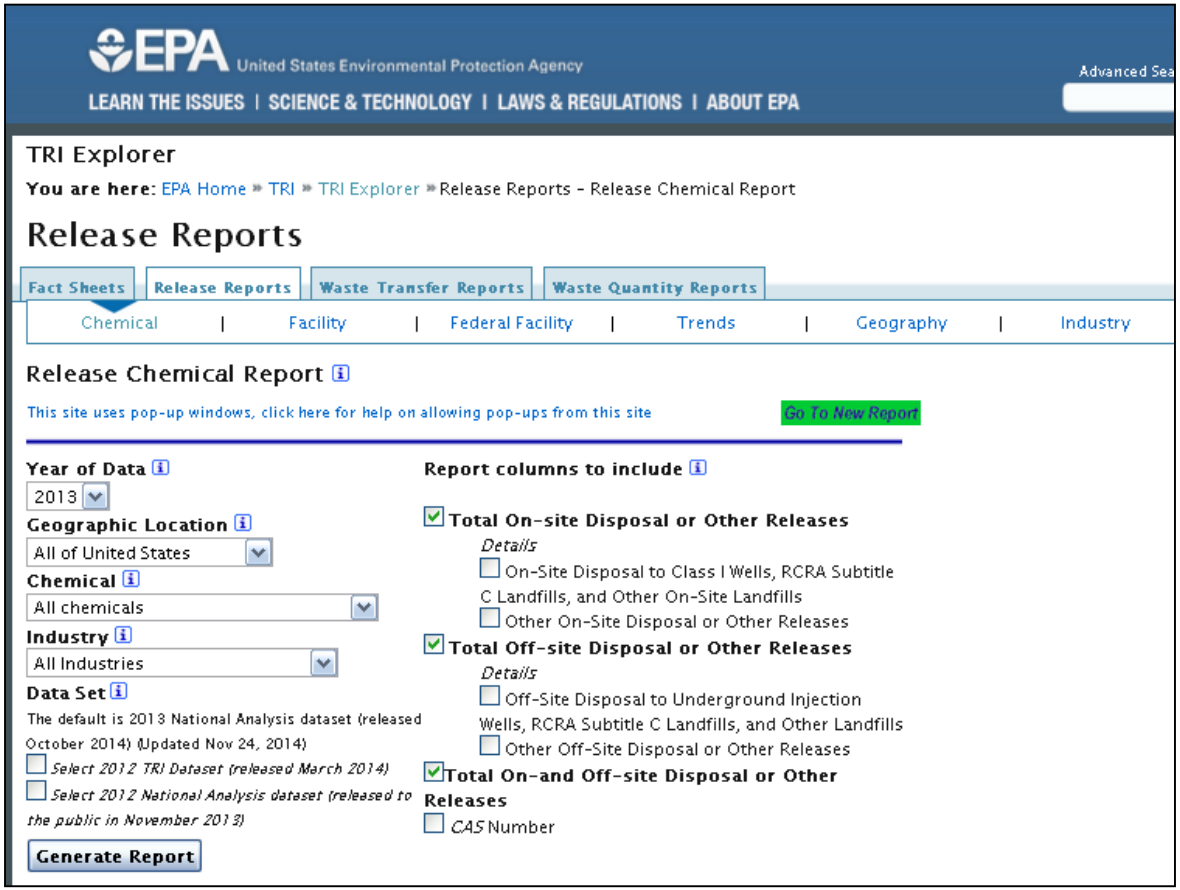
New Feature: Simplified Site Navigation

Using TRI Explorer

https://iaspub.epa.gov/triexplorer/tri_factsheet_search.searchfactsheet

Using TRI Explorer

http://iaspub.epa.gov/triexplorer/tri_release.chemical



TRI Explorer

Five Steps to generate a report

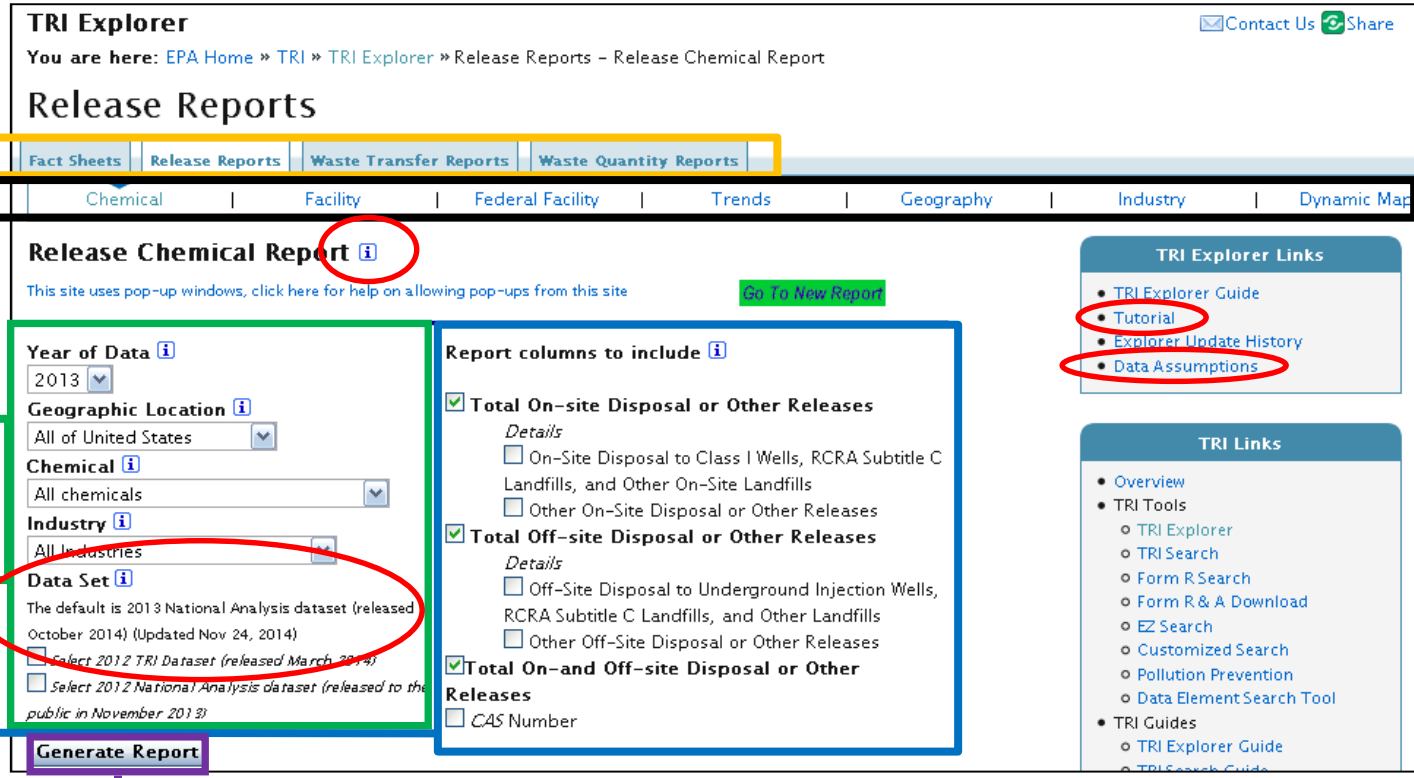
Step 1. Choose *Report Type*

Step 2. Select a *Report Grouping* (How data will be summarized)

Step 3. Choose *Filters (Optional - All filters have a default)*

Step 4. Choose *Columns* to be displayed *(All options have a default)*

Step 5. Click on the *Generate Report* button.



Red ovals identify available user aids or key references

TRI Explorer

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You are here: EPA Home » TRI » TRI Explorer » Releases: Trends Report

Releases: Trends Report

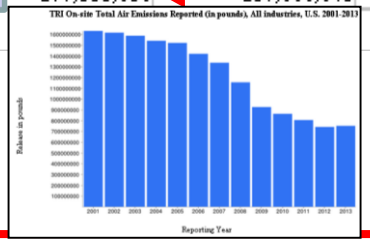
Data Source: 2013 National Analysis dataset (released October 2014) (Updated Nov 24, 2014) See Note

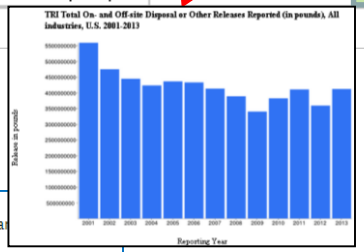
Go To New Report *Instructions for printing wide reports*

TRI On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), Trend Report for facilities in All industries, for 2001 Core Chemicals, U.S. 2001-2013

Are year to year changes comparable?

Row #	Year	Total Air Emissions	Surface Water Discharges	Total Underground Injection	Total On-site Releases to Land	Total On-site Disposal or Other Releases	Total Off-site Disposal or Other Releases	Total On- and Off-site Disposal or Other Releases
1	2001	1,630,764,160	242,228,574	215,649,594	2,999,488,336	5,089,130,665	496,923,060	5,586,053,725
2	2002	1,614,969,904	243,354,779	227,038,336	2,175,684,032	4,261,047,051	484,254,382	4,745,301,434
3	2003	1,586,697,967	230,831,052	229,183,906	1,912,950,084	3,959,663,010	482,433,101	4,442,096,111
4	2004	1,540,087,654	253,334,147	238,165,383	1,701,664,176	3,733,251,360	498,263,939	4,231,515,300
5	2005	1,519,961,421	254,656,818	235,775,608	1,829,895,117	3,840,288,964	518,574,435	4,358,863,399
6	2006	1,418,805,486	250,595,588	224,179,677	1,906,538,500	3,800,119,251	526,739,226	4,326,858,477
7	2007	1,336,066,196	239,063,508	193,642,417	1,811,468,042	3,580,240,163	548,898,993	4,129,139,156
8	2008	1,154,393,594	247,193,502	178,333,501	1,820,089,591	3,399,920,189	485,549,442	3,885,469,631
9	2009	925,175,904	206,111,098	157,497,262	1,751,390,178	3,040,176,443	358,234,218	3,398,410,661
10	2010	861,979,958	230,569,145	204,825,510	2,111,119,477	3,408,494,490	411,491,272	3,819,985,762
11	2011	804,256,424	220,290,865	196,689,695	2,468,813,101	3,690,050,085	413,420,591	4,103,470,676
12	2012	740,483,307	215,607,270	198,052,224	2,026,538,680	3,180,681,481	409,132,165	3,589,813,646
13	2013	750,534,270	211,590,696	201,686,840	2,548,184,968	3,711,996,775	405,372,591	4,117,369,366





Export this report to a text file

Create comma-separated values, compatible with spreadsheet a

Save data in comma-separated-value, CSV, file Send data into Microsoft Excel

Download all records

View other report type:

Transfers Off-site for Further Waste Management

Quantities of TRI Chemicals in Waste (waste management)

View report in other formats:

PDF (Acrobat Reader); or

RTF (Microsoft Word)

Note: The above trend report excludes quantities for hydrogen sulfide added in 2012 and additional PACs added in 2011.
Total quantities reported to TRI may be viewed in any report aggregated for a single year

Questions and Discussion