



Tapping into Toxics with EPA's TRI data on facilities' waste

**Presented by Abby Burton
ERG on behalf of EPA Region 9
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Presentation Overview

- How TRI can help you
- Background and History
- Which Facilities Report to TRI
- Using TRI to understand facility operations
- Tools and Resources
- Demo of TRI Tools



Why is TRI relevant to my work?

- TRI data provide information about facility activities
 - TRI provides data on facility operations and chemicals handled
- TRI data can be used for targeting



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 accidentally released from a facility. Thousands died.
- **Institute, West Virginia** August 1985
 - Chemical release at a similar facility in the U.S.
- Increased concern in the U.S. about chemical accident preparedness and availability of information on chemicals used in industrial facilities
- In 1986, **Emergency Planning and Community Right-to-Know Act (EPCRA)**. Section 313 established the Toxics Release Inventory.

What is TRI?

- TRI is a public database of the quantities of toxic chemicals that are released and managed as waste in the U.S. each year. TRI includes information on:



Releases



Waste transfers



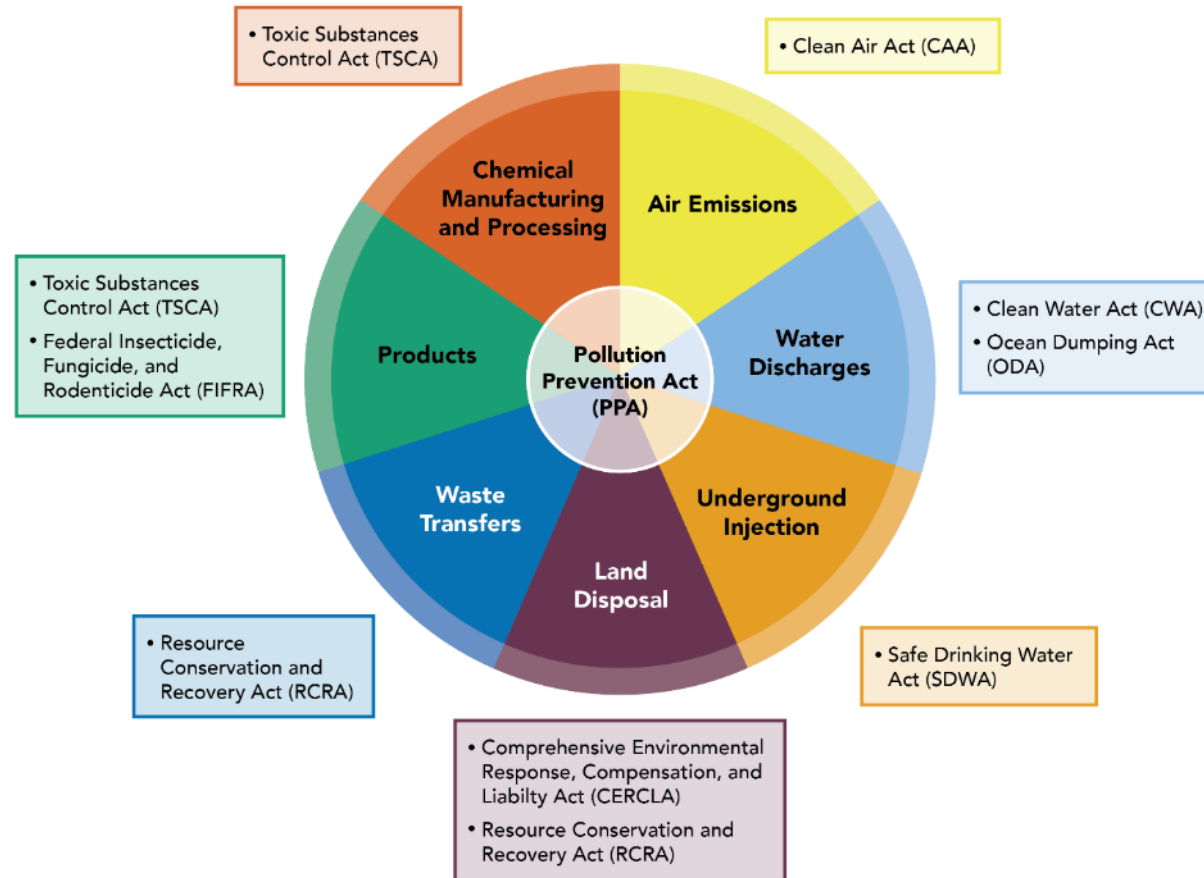
Recycling & Treatment



Pollution prevention

- TRI is chemical-specific

How does TRI fit in to EPA programs?



Which facilities must report to TRI?

- Facility must be in a TRI-covered industry sector, including:



Manufacturing



Coal/Oil Electricity
Generation



Certain Mining
Facilities



Hazardous
Waste
Management



Federal
Facilities

Additional Requirements

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



Chemical Thresholds

A facility meeting the first two applicability criteria for reporting must file a TRI Report for TRI-listed chemical* if the facility:

THRESHOLDS

Manufactured (including imported)

more than 25,000 pounds of the chemical in the reporting year

OR

Processed

more than 25,000 pounds of the chemical in the reporting year

OR

Otherwise Used

more than 10,000 pounds of the chemical in the reporting year

*These thresholds apply to most of the 800+ TRI-listed chemicals but do not apply to the Chemicals of Special Concern or to PFAS.

TRI Chemicals and Chemical Categories

- TRI is *chemical-specific*
- Current list contains over 800 individual chemicals and chemical categories. Listed chemicals include:
 - **Individual chemicals**
 - **Chemical categories**
 - **PFAS**
- Section 313 chemical list and more information available at:

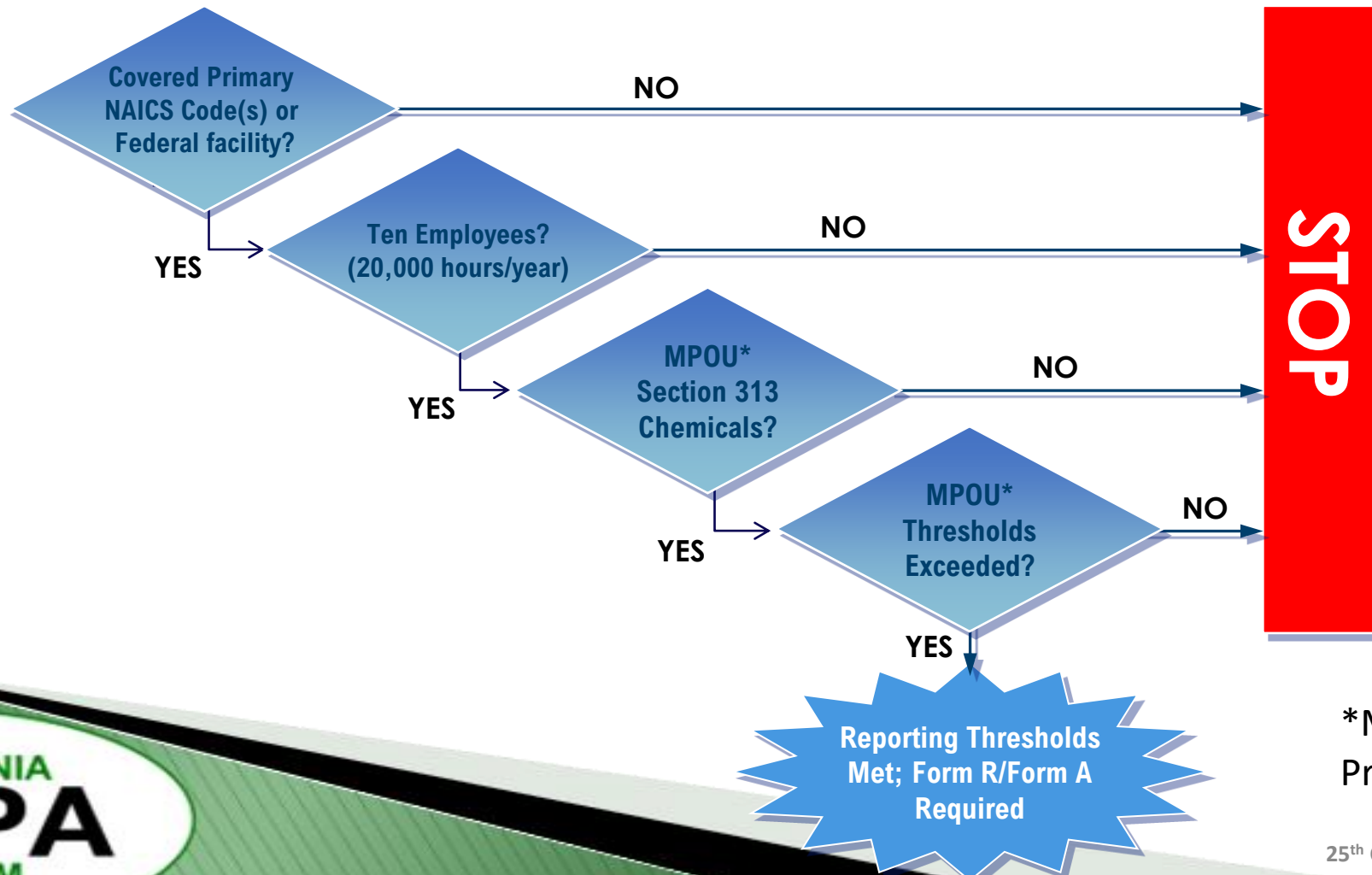
<https://www.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals>



Exemptions

- TRI regulations **provide exemptions** for specific scenarios.
- Exemptions allow for a facility to **not consider quantities** of toxic chemicals in certain circumstances
- **Articles**
- ***De Minimis***
- Coal Extraction
- Intake Air and Water
- Laboratory Activities
- Janitorial or Facility Grounds Maintenance
- Metal Mining Overburden
- Motor Vehicle Maintenance
- Operators of Establishments on Leased Property
- Owners of Leased Property
- Personal Use
- Structural Component of the Facility

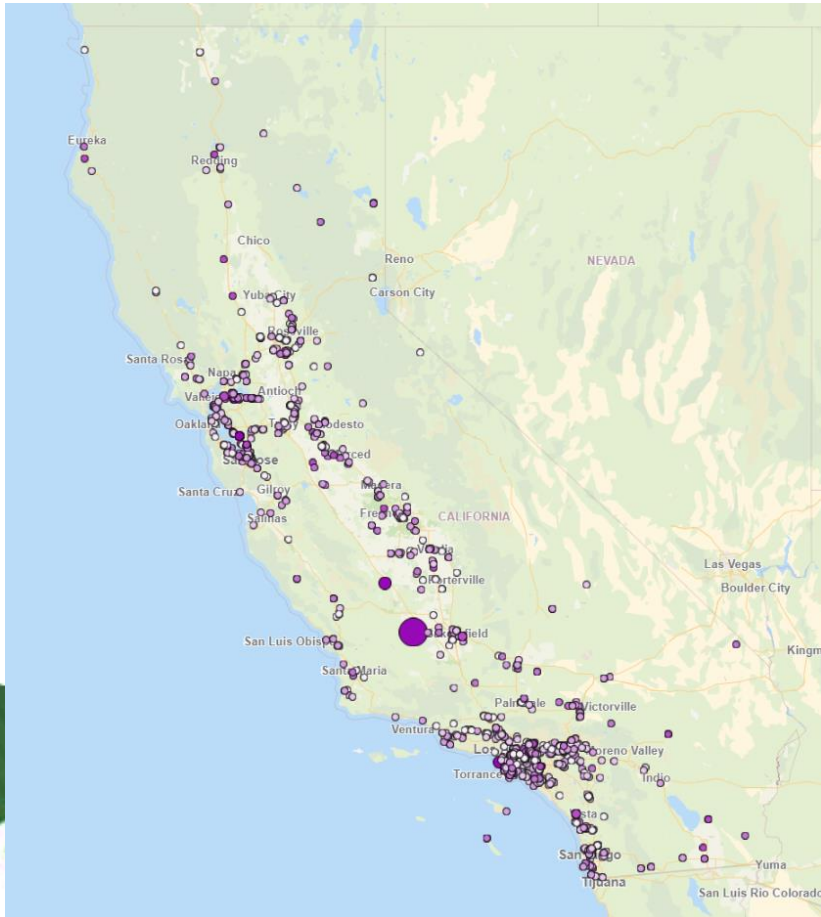
TRI Reporting Requirements Summary



*MPOU = Manufacture, Process, or Otherwise Use



TRI Reporting

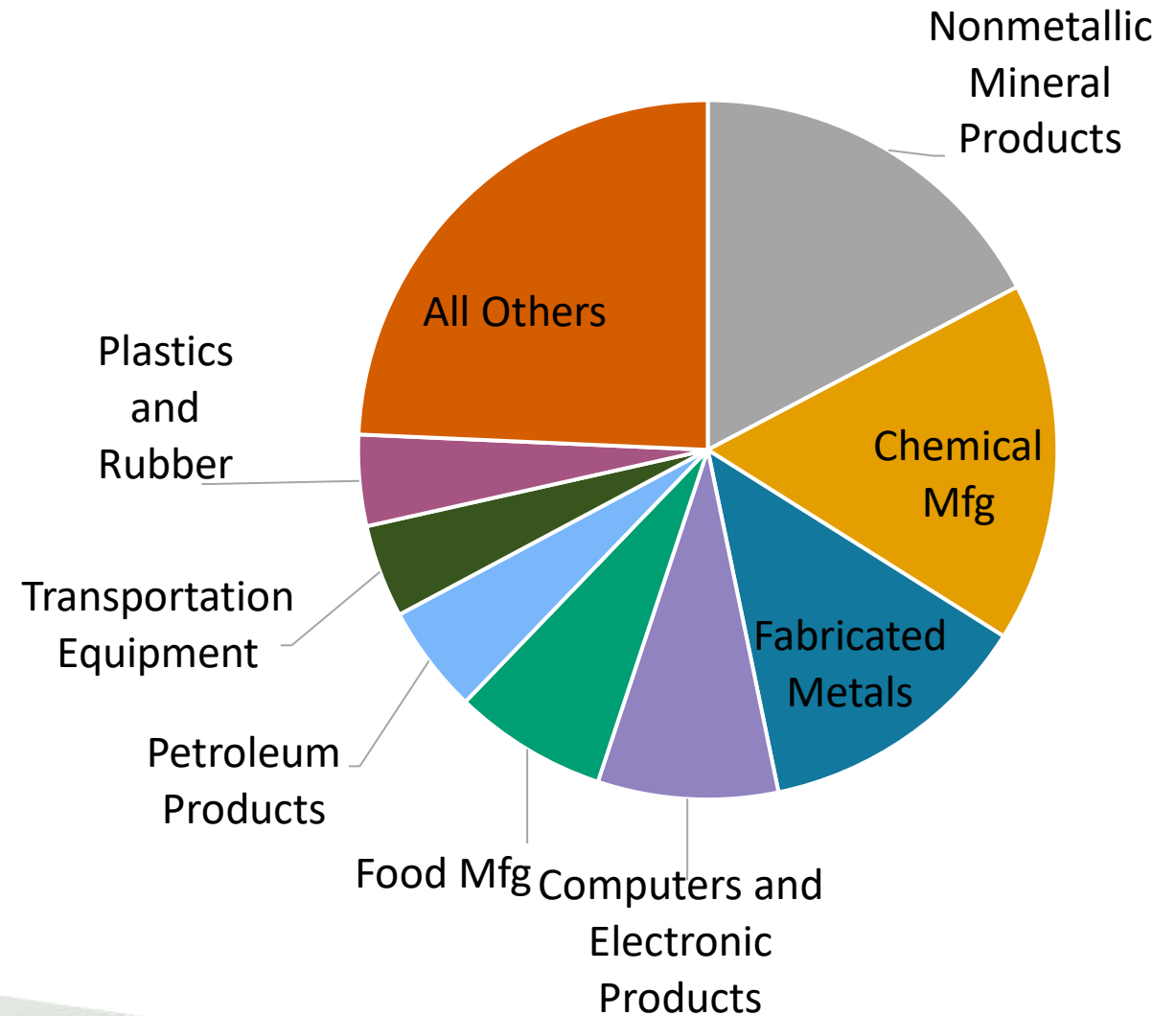


- TRI includes data from ~20,000 facilities and covers more than 800 toxic chemicals and chemical categories
 - >1,000 facilities in California
- TRI forms must be submitted by July 1st each year
 - July 1, 2023 deadline for January 1 - December 31, 2022 activities

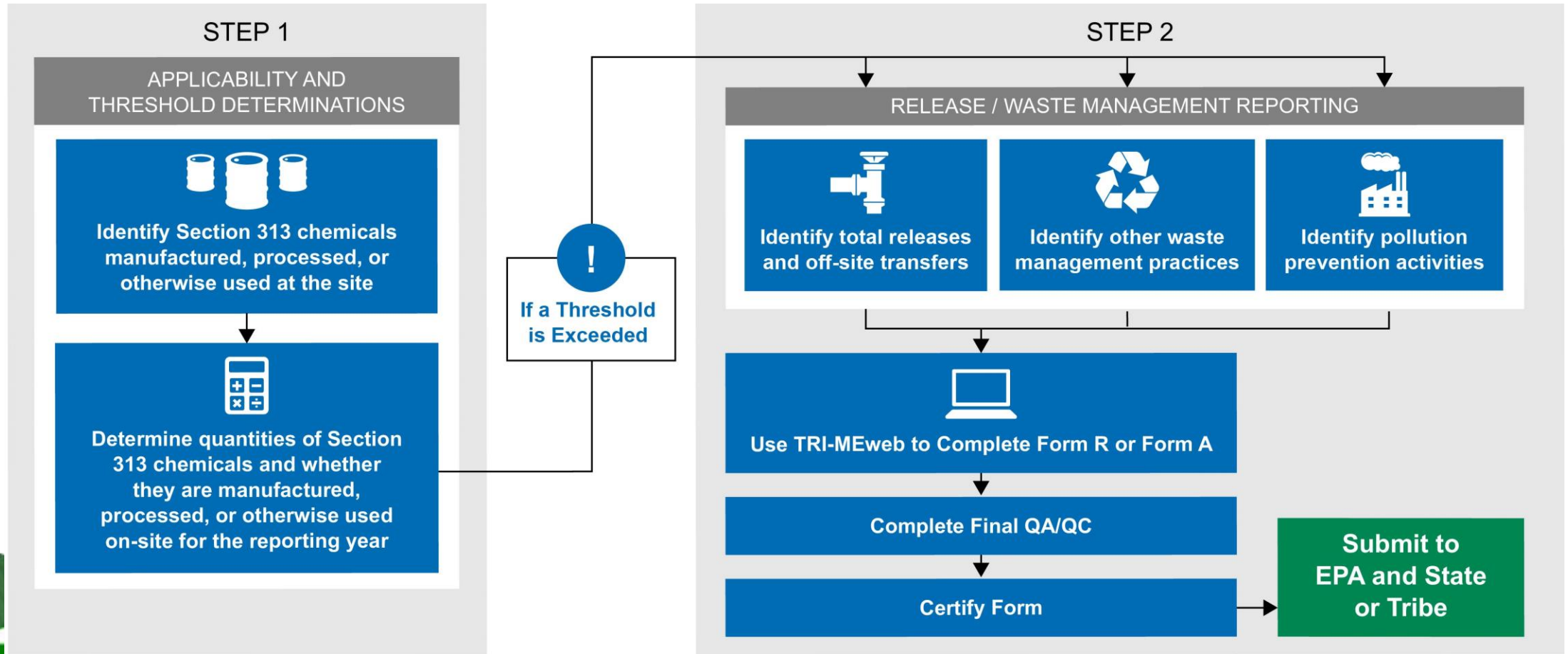
California Quick Facts

- 1,000+ facilities, 180+ chemicals
- Top sectors for releases and waste:
 - Petroleum Products (refineries)
 - Hazardous Waste (TSDFs)
 - Chemical Manufacturing
 - Primary Metals
 - Food Manufacturing

California Facilities by Sector



TRI Reporting – 2 Part Process



The TRI Data – Key points

- TRI release data is independent of compliance with other laws
- Data is limited to certain facilities and certain chemicals
- Reporting zero releases is possible
 - Reporting is triggered based on what is used, not what's released





What data are reported?



Facility Information

- Facility name, address, etc.
- Parent Company
- Public Contact
- Sector

| | | | |
|-----------------|---|-----------------|--------------------|
| Facility Name | CYTEC SOLVAY COMPOSITE MATERIALS ANAHEIM | TRI ID | 92806BSFST1440N |
| Address | 1440 N KRAEMER BLVD ANAHEIM, CA, 92806 | FRS ID | 110000480952 |
| Mailing Name | CYTEC SOLVAY COMPOSITE MATERIALS ANAHEIM | DUNS Number | 874748937 |
| Mailing Address | 1440 N KRAEMER BLVD ANAHEIM, CA, 92806 | Parent Company | SOLVAY HOLDING INC |
| County | ORANGE | Public Contact | JESSICA V. |
| EPA Region | 9 | Phone | (657) 253- |
| Latitude | 33.86194 | Tribe | NA |
| Longitude | -117.86123 | BIA Tribal Code | NA |
| NAIC(S) | 325520 Adhesive Manufacturing | Industry Sector | 325 Chemicals |
| Last Form | 2021 | | |



*You can navigate within the map with your mouse

Form R Content (Chemical-specific)

- On-site releases of TRI chemicals to **Air, Water, Land**
- On-site waste management: **Treatment, Recycling, Energy Recovery**
- Transfer of chemical waste to off-site locations



Uses of the Chemical at the Facility

Section 3. Activities and Uses of the Toxic Chemical

3.1 Manufacture the Toxic Chemical:

| | | |
|-------------------------------|------------------------|------------------------------------|
| <u>Produce</u> : YES | <u>Import</u> : NO | <u>On-Site Use/Processing</u> : NO |
| <u>Sale/Distribution</u> : NO | <u>Byproduct</u> : YES | <u>Impurity</u> : NO |

3.3 Otherwise Use the Toxic Chemical:

| | |
|----------------------------------|-----|
| <u>Chemical Processing Aid</u> : | NO |
| <u>Manufacturing Aid</u> : | NO |
| <u>Ancillary or Other Use</u> : | YES |

Sub-Uses:

Z306

Waste treatment

3.2 Process the Toxic Chemical:

| | |
|--------------------------------|----|
| <u>Reactant</u> : | NO |
| <u>Formulation Component</u> : | NO |
| <u>Article Component</u> : | NO |
| <u>Repackaging</u> : | NO |
| <u>Impurity</u> : | NO |
| <u>Recycling</u> : | NO |



Maximum On-Site Amount (Section 4)

| WEIGHT RANGE IN POUNDS | | |
|------------------------|-------------|---------------------|
| Range Code | From | To |
| 01 | 0 | 99 |
| 02 | 100 | 999 |
| 03 | 1,000 | 9,999 |
| 04 | 10,000 | 99,999 |
| 05 | 100,000 | 999,999 |
| 06 | 1,000,000 | 9,999,999 |
| 07 | 10,000,000 | 49,999,999 |
| 08 | 50,000,000 | 99,999,999 |
| 09 | 100,000,000 | 499,999,999 |
| 10 | 500,000,000 | 999,999,999 |
| 11 | 1 billion | More than 1 billion |

- Range codes indicating the maximum quantity on-site during the reporting year
- Maximum total (non-exempt) amount present at one time during reporting year
- **Based on amount in storage, process, and wastes**
- **Maximum amount on site may differ from the Tier II (HMBP)-reported maximum amount on site value**
 - *HMBP is usually by mixtures, Form R is chemical-specific*
 - *Form R includes all forms of the chemical on site (raw materials, products, wastes)*



Air and Water Releases



- Facilities use best available information
 - Monitoring is **not** required for TRI reporting
 - Facilities report stack and fugitive air emissions, surface water discharges, and transfers to POTWs

Disposal to Land On-Site

- Includes releases to:
 - Landfills (RCRA C and other)
 - Surface Impoundments (RCRA C and other)
 - Land Treatment/Application Farming
 - Other land disposal
 - Underground injection



Other Off-site Transfers

- Transfers to other off-site locations (Section 6.2)
 - Includes name, address, and RCRA ID of the receiving facility
 - Codes identify activity (waste treatment, disposal, recycling, and energy recovery)
- Facilities may refer to RCRA records



On-Site Waste Management



Waste Treatment



Energy Recovery



Recycling Methods



Waste Treatment Methods and Efficiency

- Facilities report each waste treatment method that each waste stream containing the chemical undergoes
 - Included even if method has no effect on the chemical
 - Efficiency of the waste treatment methods at eliminating the chemical from the waste stream
 - Includes destruction or physical removal
- Quantity treated on-site (**destruction only**)



Energy Recovery

- Facility reports quantity and process
- Chemical must be combustible and have a significant heating value (>5,000 BTU/lb.)
- Combustion unit is integrated into an energy recovery system (e.g., industrial furnace, industrial kiln, or boiler)

Section 7B. On-Site Energy Recovery Processes

ON SITE ENERGY RECOVERY PROCESSES

U02 - INDUSTRIAL FURNACE

Energy Recovery Codes

U01 Industrial Kiln

U02 Industrial Furnace

U03 Industrial Boiler



Recycling

- Facility reports quantity and methods used
 - **Does not count direct reuse or energy recovery**

Section 7C. On-Site Recycling Processes

| <u>ON SITE RECYCLING PROCESSES</u> |
|---|
| H10 - Metal recovery (by retorting, smelting, or chemical or physical extraction) |

On-Site Recycling Codes

H10 Metal recovery (by retorting, smelting, or chemical or physical extraction) – Metals and Metal Category Compounds only

H20 Solvent recovery (including distillation, evaporation, fractionation or extraction)

H39 Other recovery or reclamation for reuse (including acid regeneration or other chemical reaction process)



Non-production related waste

- Quantity of the chemical released into the environment or transferred off-site as a result of:
 - Remediation
 - Catastrophic events (e.g., earthquake, hurricane, fire, floods)
 - Other one-time events not associated with production processes (e.g., pipe rupture due to unexpected weather)



Source Reduction Activities

- Material Substitutions and Modifications
- Inventory and Material Management
- Operating Practices and Training
- Process and Equipment Modifications
- Product Modifications

| <u>SOURCE REDUCTION ACTIVITIES</u> | <u>METHOD 1</u> | <u>METHOD 2</u> | <u>METHOD 3</u> | <u>ESTIMATED ANNUAL REDUCTION</u> |
|--|--|-----------------|-----------------|---|
| S11 - REFORMULATED OR DEVELOPED NEW PRODUCT LINE | T06 - EMPLOYEE RECOMMENDATION (UNDER A FORMAL COMPANY PROGRAM) | | | R2 - greater than or equal to 50%, but less than 100% |

TRI Guide-ME

- Review TRI Reporting Forms and Instructions
- Browse guidance materials
- Updated chemical list
- Browse questions and answers
- Available at: <http://epa.gov/tri/guideme>



Find and Use TRI data



EPA Makes TRI Information Available

Data Access Tools

Search by: States Metropolitan Areas Watersheds Tribal

Search: State: or Zip Code: City: (Optional) County: (Optional)

Select...

- Alabama
- Alaska
- American Samoa
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia
- Florida
- Georgia
- Guam
- Hawaii
- Idaho
- Illinois
- Indiana
- Iowa
- Kansas

Map of the United States with state boundaries and a search overlay.

ON SITE RELEASES TOTALS

Source: Pounds Released

| | | |
|-------|-------|-------|
| 2015 | 2014 | 2013 |
| 1,817 | 1,817 | 1,817 |
| 1,817 | 1,817 | 1,817 |

ON SITE RELEASES BY CHEMICAL

| CHEMICAL | (Pounds Released) | Health Effects |
|-----------------------|-------------------|----------------|
| CERTAIN GLYCOL ETHERS | 133,010 | Cancer |
| 1,4-DIOXANE | 22,910 | Cancer |
| BENZENE | 122.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 312.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 296.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 122.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 52.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 41.0 | Cancer |
| 1,1-DICHLOROETHYLENE | 5.0 | Cancer |

POLLUTION PREVENTION

Facility has permits/records for:

- Air
- Water
- Land

COMPLIANCE

3 Year Compliance Status (quarterly) (April - March)

- Compliance
- Significant Non-Compliance
- Non-Compliance
- Status Unknown/Unavailable

Note: Search results will display location-specific information for the TRI National Program for 2015. Data are current as of October 2015.

Multi-topic Factsheets

2015 TRI Factsheet: State - Massachusetts

2015 Dataset (released September 2016)

The Toxics Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. Certain industrial facilities in the U.S. must report annually how much of each chemical is recycled, combusted for energy recovery, treated for destruction, and disposed of or otherwise released on and off-site. This information is collectively referred to as production-related waste management.

Map of TRI Facilities in Massachusetts

Quick Facts for 2015

| Massachusetts | United States |
|---------------------------------|-------------------------------------|
| Number of TRI Facilities: | 403 / 21,817 |
| Total Production-Related Waste: | 96.3 million lbs / 32.1 billion lbs |
| Management: | |
| Recycled: | 3.3 million lbs / 3.4 billion lbs |
| Energy Recovery: | 1.4 million lbs / 2.8 billion lbs |
| Treatment: | 1.3 million lbs / 680.6 million lbs |
| On-site Release: | 12.8 million lbs / 39.1 million lbs |
| Off-site Release: | 20.8 million lbs / 2.2 billion lbs |
| Total Off-site: | 4.9 million lbs / 53.1 million lbs |

Total On-site Releases by Environment MA, 2003 - 2015

The following charts represent releases of TRI-covered chemicals to the environment in a manner that is not listed in the air or water, placed in some type of land disposal, or land.

Top Five Facilities by Total Disposal MA, 2015

Production-related waste managed in MA, 2003 - 2015

Top Five Chemicals Released to Air and Water MA, 2015

AIR: 1.3 thousand pounds

- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%

WATER: 12.8 thousand pounds

- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%
- 1,1-DICHLOROETHYLENE: 100%

Note: **Gaseous Chemical
Note: Total graphs were created using the 2003 TRI chemical releases list.

National Analysis Report

Toxics Release Inventory (TRI) National Analysis

This year's Analysis makes TRI data more accessible to communities

The 2020 Analysis includes mapping enhancements for community mapping, including those with environmental justice concerns.

View the Community Profile mapping option

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.

Resources:

- National Analysis data dashboard
- Download materials



Toxics Release Inventory (TRI) Program

TRI Homepage

- www.epa.gov/tri
- TRI website for reporting materials and guidance, links to other pages



RY 2022 Reporting Season Begins

Reporting forms for calendar year 2022 are due to EPA by July 1, 2023.

- [Go to the main reporting webpage](#)
- [Log in to TRI-MEweb to submit forms](#)

What is the TRI? The Toxics Release Inventory (TRI) is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data support informed decision-making by communities, government agencies, companies, and others. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI.

[TRI Site Map](#) | [El Inventario de Emisiones Tóxicas](#)

Get TRI Email & Text Updates

Enter your email

sign up

What is the TRI?



Report TRI Data

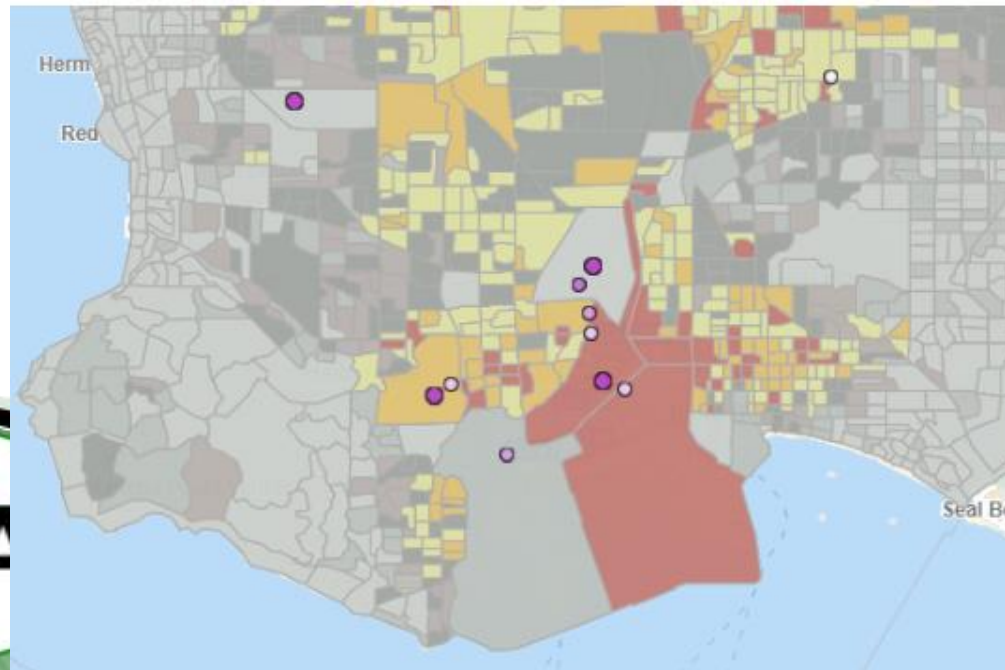


Access & Use Data



TRI Toxics Tracker

- <https://edap.epa.gov/public/extensions/TRIToxicsTracker/TRIToxicsTracker.html>
- Good for finding facilities of interest
- Search by location, chemicals reported, sector, etc.



National Percentiles for Demographic Index

| National Percentiles | Q | Percentages |
|-------------------------|---|-------------|
| 95 - 100 percentile | ▲ | ≥ 78.59 |
| 90 - 95 percentile | | < 78.59 |
| 80 - 90 percentile | | < 69.85 |
| 70 - 80 percentile | | < 56.20 |
| 60 - 70 percentile | | < 45.03 |
| 50 - 60 percentile | | < 36.06 |
| Less than 50 percentile | | < 29.06 |



Envirofacts

- <https://www.epa.gov/enviro/tri-search>
- Best tool for the details from a single form
- Displays all public data elements

PART I. FACILITY IDENTIFICATION INFORMATION (FORM R)

DOCUMENT CONTROL NUMBER: 1321219817285

Facility Registry System ID:

Section 1. Reporting Year

Reporting Year: 2021

Section 2. Trade Secret Information

2.1 Trade Secret: NO

2.2 Sanitized Copy: Unsanitized



ECHO – Enforcement and Compliance History Online

- <https://echo.epa.gov/>
- Connects all major EPA programs, some state data, and enforcement
- Start here if you have a site in mind

| Facility Name | Mapped | Street Address | City | State | FRS ID | Reports | Count of EJ Indexes Above 80th Percentile (US - Block Group) | Compliance Monitoring Activity (5 years) | Significant Violations | Quarters with Noncompliance (3 years) | Formal Enforcement Actions (5 years) |
|---|--------|---------------------------------|-------------|-------|--------------|---------|--|--|------------------------|---------------------------------------|--------------------------------------|
| A G LAYNE INCORPORATED | 📍 | 4578 BRAZIL ST. | LOS ANGELES | CA | 110000473657 | C A | 6 | 0 | No | 0 | 0 |
| AAA GLASS CORP | 📍 | 2800 EAST 12TH STREET | LOS ANGELES | CA | 110002889599 | C | 11 | 0 | No | 0 | 0 |
| ABBOTT ELECTRONICS INCORPORATED | 📍 | 2727 SOUTH LA CIENEGA BOULEVARD | LOS ANGELES | CA | 110001132845 | C I | 10 | 0 | No | 0 | 0 |
| ACE PLATING CO INC | 📍 | 719 S. TOWNE AVE. | LOS ANGELES | CA | 110000473336 | C | 9 | 0 | No | 0 | 0 |





DEMO – TRI Tools



Region 9 TRI Trainings for reporters

- Region 9 TRI Trainings for reporting facilities:
 - April 18/19
 - May 15/16
 - Basic and Advanced trainings
- Contact abby.burton@erg.com or johnson.kendall@epa.gov for registration information





Questions?

Abby Burton, ERG, abby.burton@erg.com

Presenting on behalf of EPA Region 9

