

TRI Training Module Agendas

Basic Concepts Module

1. Introduction
2. Covered Sectors
3. Thresholds (PBT and Non-PBT)
4. Reporting Exemptions
5. Threshold Determinations
6. Overview of Form R
7. Alternate Threshold Rule (Form A)
8. TRI-MEweb Introduction

Advanced Concepts Module

1. Recent TRI Program Changes
2. Advanced Reporting Guidance
3. Detailed PBT Guidance
4. Tools and Assistance
5. TRI-MEweb

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Reporting Year 2016

Emergency Planning + Community RIGHT-TO-KNOW Act (EPCRA) Section 313

EPA

Toxics Release Inventory Reporting Requirements

Basic Concepts

Do I Need to Report to TRI and How Do I Report

TRI

What is EPCRA Section 313 & TRI?

- Section 313 of EPCRA requires facilities to file a TRI report annually for each Section 313 chemical exceeding an activity threshold (manufacturing, processing or otherwise using)
 - **Section 313 chemical list contains over 650 chemicals and chemical categories**
- Facilities exceeding an activity threshold must report if they are:
 - In a “covered sector” (defined by NAICS codes); and
 - Have 10 or more employees
- Submit TRI reports to U.S. EPA, and either
 - **designated state officials, or**
 - **designated tribal office**
- TRI reports must be submitted by July 1st following the calendar year’s activities (aka Reporting Year (RY))
 - **[e.g. July 1, 2017 deadline for RY 2016 (January 1 - December 31, 2016) activities]**

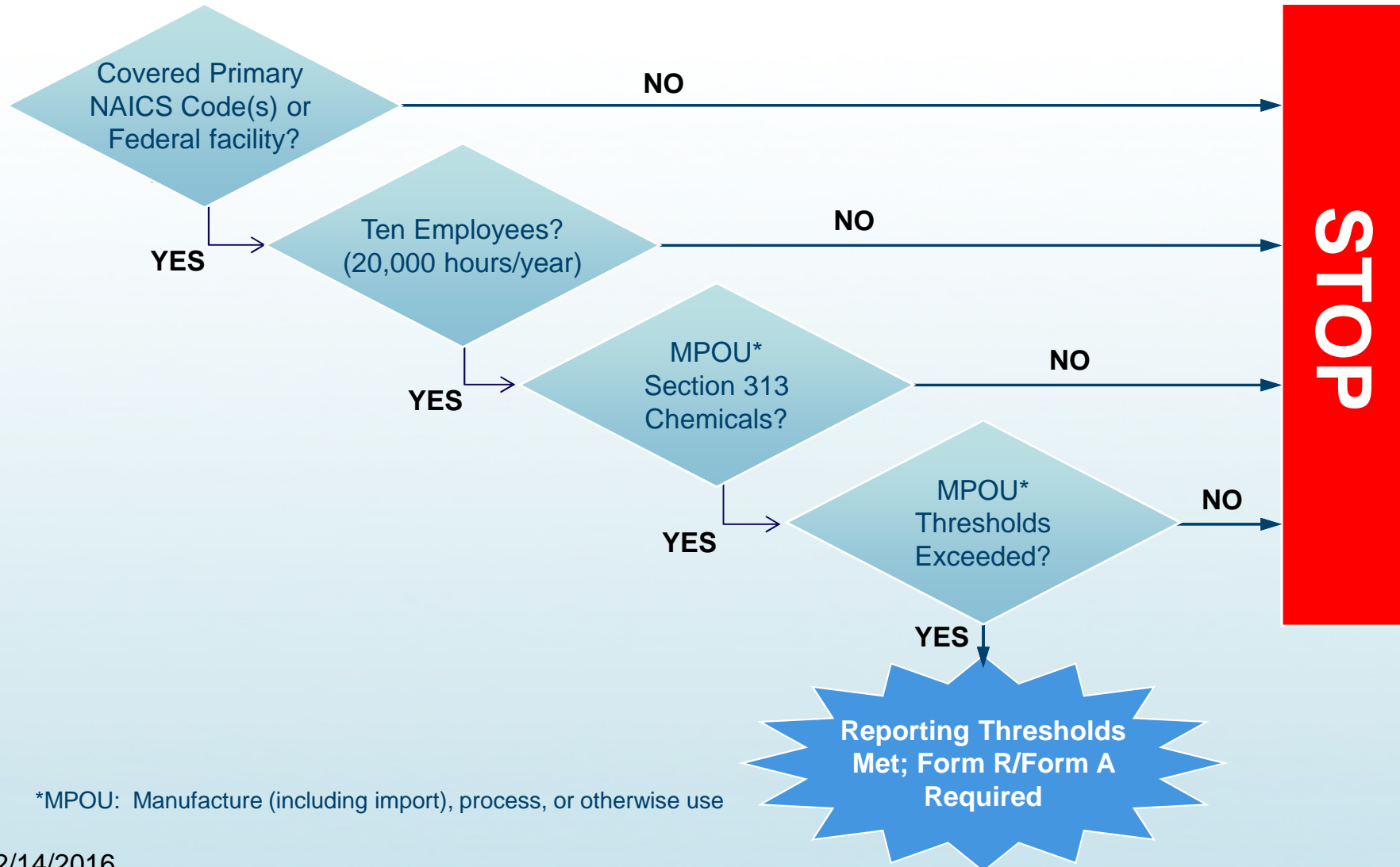
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Introduction

TRI

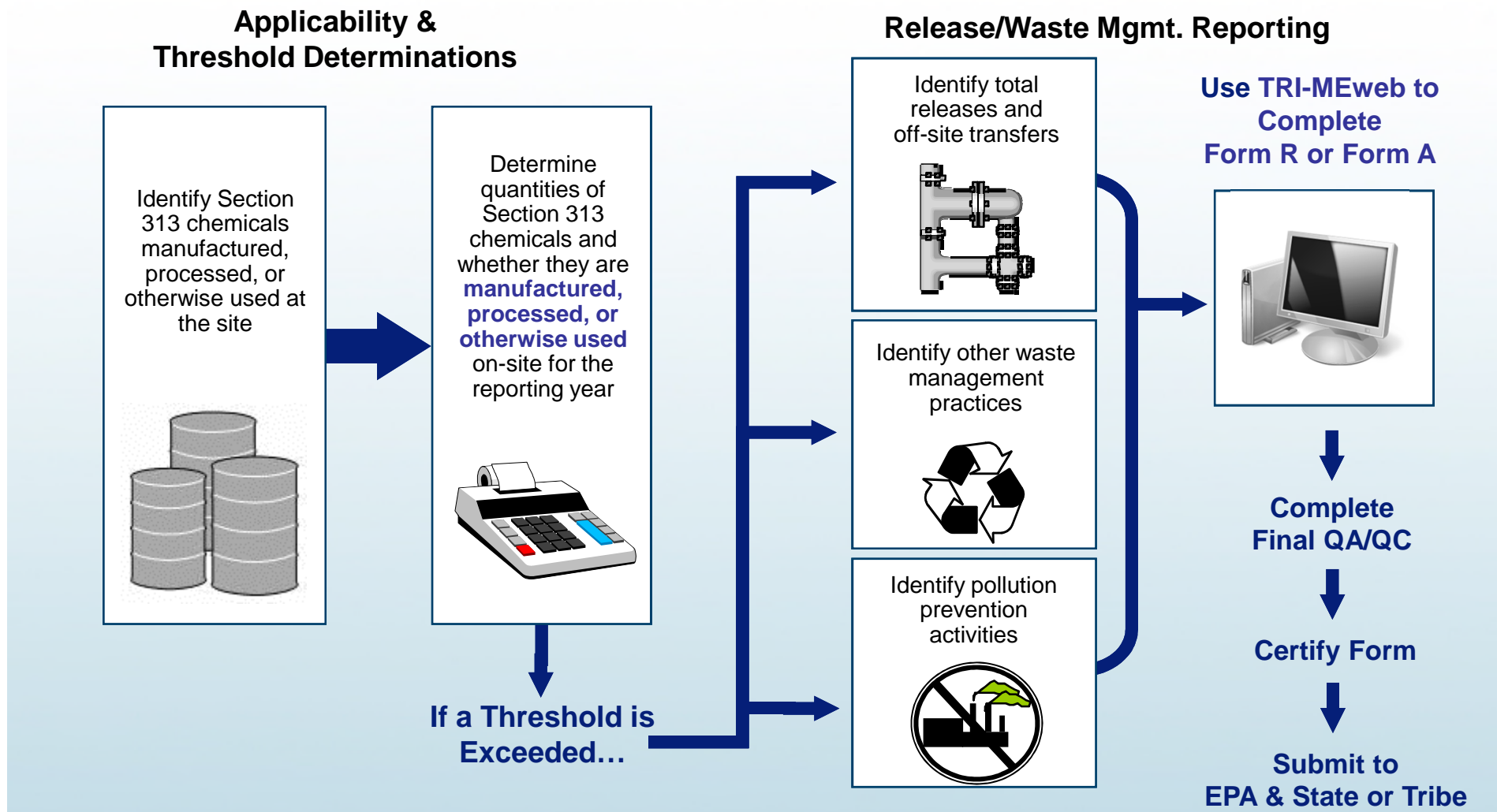
TRI Reporting Requirements



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TRI Process – 2 Part Process



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Section I: Covered Sectors

Industrial Sectors Covered

Industrial Sector	Notes
Manufacturing	Facilities engaged in the mechanical or chemical transformation of materials or substances into new products
Metal mining	Not including metal mining services, and uranium, radium, and vanadium ores
Coal mining	Not including coal mining services
Electrical utilities	Limited to facilities that combust coal and/or oil for the purpose of generating electricity for distribution in commerce
Treatment, Storage, and Disposal facilities	Limited to facilities regulated under the Resource Conservation and Recovery Act, Subtitle C, 42 U.S.C. Section 6921 et seq.
Solvent recovery services	Limited to facilities primarily engaged in solvent recovery services on a contract or fee basis
Chemical distributors	Facilities engaged in the wholesale distribution of chemicals and allied products
Petroleum bulk terminals	Facilities engaged in the wholesale distribution of crude petroleum and petroleum products from bulk liquid storage facilities

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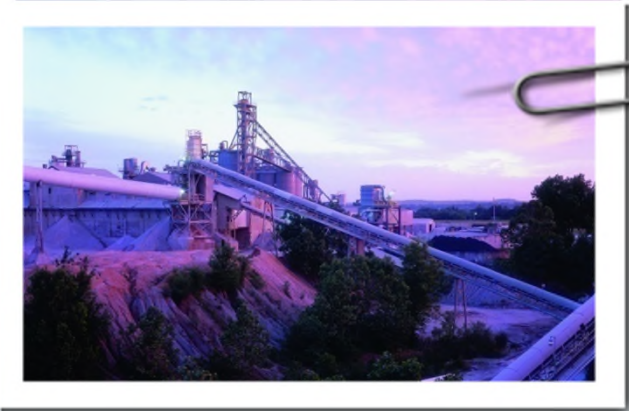
Covered NAICS Codes

- 2012 North American Industry Classification System (NAICS) codes are used for TRI reporting.
- To determine whether your facility's primary NAICS code is covered by TRI regulations, see: www2.epa.gov/tri/my-facilitys-six-digit-naics-code-tri-covered-industry
- TRI-Covered* Industries NAICS
 - 212 Mining
 - 221 Utilities
 - 31 - 33 Manufacturing
 - All Other Miscellaneous Manufacturing (includes some sectors under NAICS 1119, 1131, 2111, 4883, 5417, 8114)
 - 424 Merchant Wholesalers, Non-durable Goods
 - 425 Wholesale Electronic Markets and Agents Brokers
 - 511, 512, 519 Publishing
 - 562 Hazardous Waste
 - Federal Facilities

* Note: For many of these NAICS codes, there are reporting exceptions.

Federal Facilities

- Federal facilities (covered by Executive Order 13423 and its implementing instructions)
 - **Required to report regardless of their NAICS code**
 - Includes military bases, federal prisons, national parks
 - **Other reporting requirements apply**
 - 10 or more full-time employees
 - Exceed manufacture, process, or otherwise use thresholds of a listed chemical
 - **The federal agency or department that owns or operates the facilities is responsible for reporting**
 - **Government owned contractor operated (GOCO) facilities**
 - Same reporting requirements as non-federal facilities
 - Counted as federal facilities in TRI data analysis

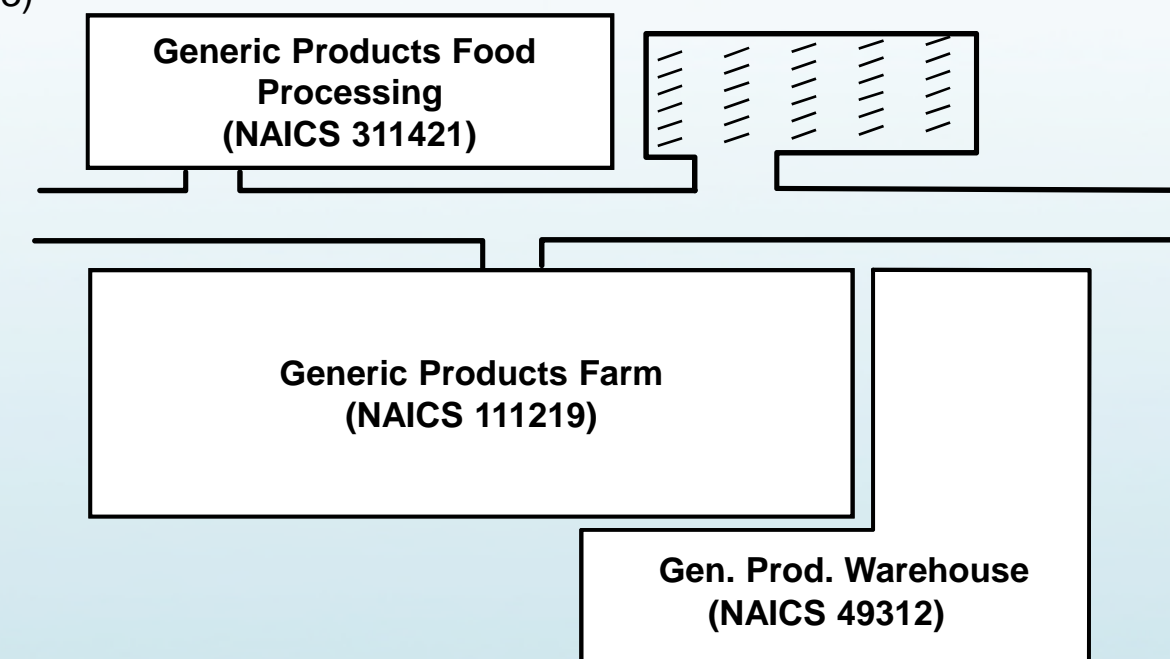


Definition of "Facility"

- TRI reporting requirements are determined by activities at "facilities"
 - Primary NAICS code determination at facility level
 - Employee threshold determination at facility level
 - Chemical threshold determinations made at facility level
- "Facility - all buildings, equipment, structures, and other stationary items which are located on a single site or on contiguous or adjacent sites and which are owned or operated by the same person (or by any person which controls, is controlled by, or under common control with, such person)." (EPCRA § 329 (4))

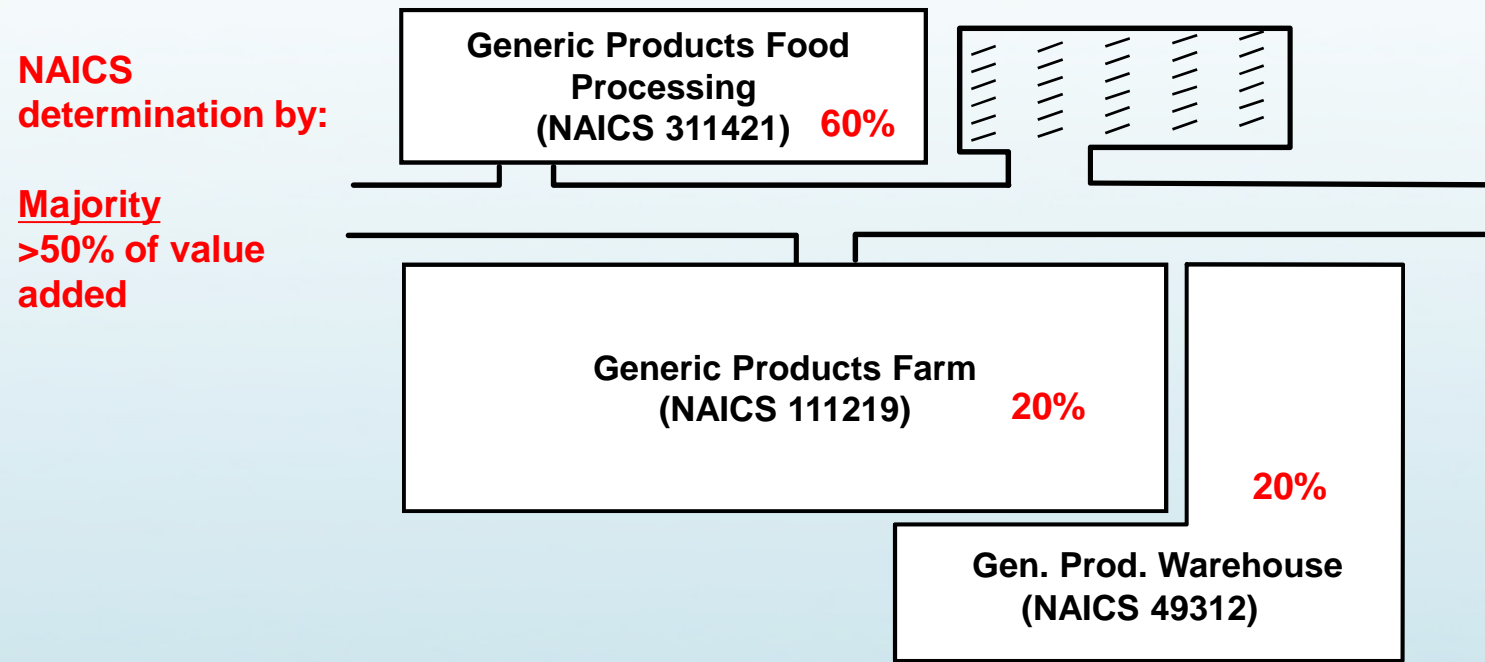
Example of a Multi-Establishment Facility

- Three separate establishments located on contiguous/ adjacent property owned by same person(s), is one facility under EPCRA (40 CFR § § 372.22(b) and 372.3)
 - Establishment - unique and separate economic unit of a facility (See 40 CFR § 372.3)



Multi-Establishment Facility

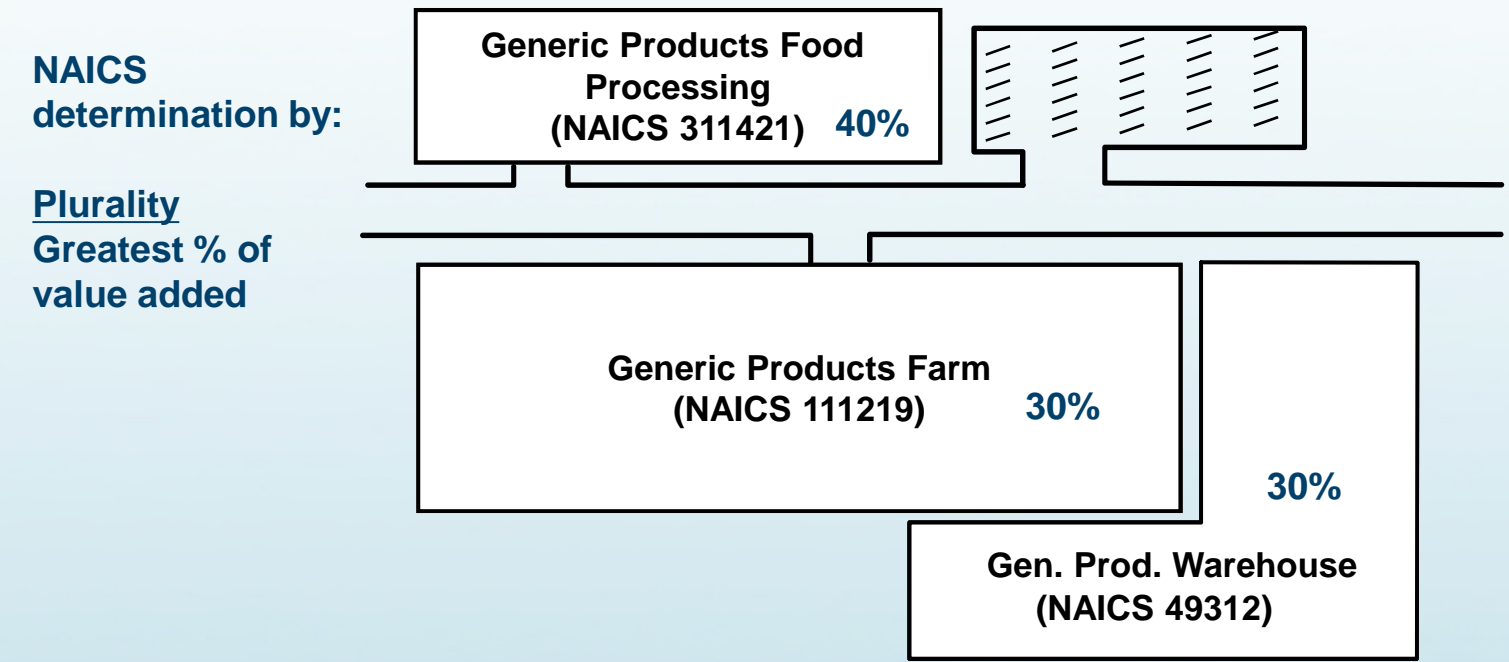
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Value added of food processing establishment = value of final food products – value of warehousing – value of farm products.

Multi-Establishment Facility

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Employee Threshold

- 10 or more full-time employee equivalents (i.e., 20,000 hours) (40 CFR § § 372.3 and 372.22(a))
 - **All persons employed by a facility regardless of function**
 - Includes operational staff, administrative staff, contractors, dedicated sales staff, company drivers, off-site direct corporate support
 - **Add all hours from part-time and full-time employees**
 - Includes holidays, vacation and sick-leave
 - **Does NOT include intermittent services from non-employees**
 - Excludes contract drivers or contractors performing intermittent service functions such as janitorial services
 - See 1998 Q&A #21, #29 and #38 for examples
- Total hours worked for each employee can be determined using time management systems

Quiz #1 Question 1

Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

Select Yes or No.

A manufacturing facility, owned by ABC Corporation, with 100 full-time employees

YES

NO

Quiz #1 Question 2

Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1

YES

NO

Quiz #1 Question 3

Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?

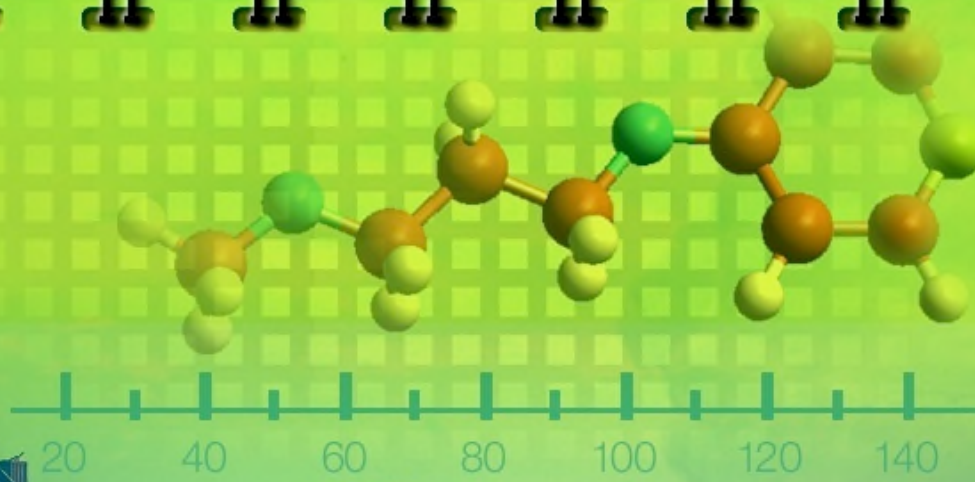
Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, next door to the manufacturing facility described in Question 1

YES

NO

Section II:
Thresholds (PBT and Non-PBT)



Toxic Chemical Activity Thresholds

- A TRI report must be prepared and submitted for any chemical that has exceeded an activity threshold.
- Threshold calculations are based on cumulative quantities of each Section 313 chemical manufactured, processed, or otherwise used over the reporting year for the whole facility.
- Each activity threshold is treated separately
 - Quantify separately amounts of toxic chemicals that are manufactured, processed, or otherwise used at the facility
 - Compare amounts in each activity to the toxic chemical's applicable threshold
- Lower thresholds apply to the 21 chemicals/chemical categories designated as persistent, bioaccumulative, and toxic (PBT) chemicals.

Non-PBT TRI Chemical Activity Thresholds

- A facility meeting the first two applicability criteria for reporting must file a TRI Report for a non-PBT Section 313 chemical if the facility:

Non-PBT 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

- Most of the 650+ chemicals and chemical categories on the Section 313 list are non-PBT chemicals.

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Listed PBT* TRI Chemicals

- Within the list of 650+ chemicals and chemical categories, there is a subset designated as being of special concern and commonly referred to as PBT chemicals (40 CFR § 372.28)
- PBT chemicals have lower activity thresholds and different reporting requirements than non-PBT TRI chemicals
 - Special rules often apply to PBT chemicals**
- 21 chemicals and chemical compound categories are classified as PBTs and have lower activity thresholds

*PBT = Persistent, Bioaccumulative, Toxic

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PBT Chemicals and Activity Thresholds

- PBT chemicals are subject to separate and lower activity thresholds (See 40 CFR § 372.28)

PBT Thresholds

- 100 lb/yr (manufactured, processed, or otherwise used)**
 - Aldrin
 - Hexabromocyclododecane (HBCD)
 - Lead*
 - Lead Compounds
 - Methoxychlor
 - Pendimethalin
 - Polycyclic Aromatic Compounds
 - Tetrabromobisphenol A
 - Trifluralin
- 10 lb/yr (manufactured, processed, or otherwise used)**
 - Chlordane
 - Heptachlor
 - Mercury
 - Toxaphene
 - Isodrin
 - PCBs
 - Benzo(g,h,i)perylene
 - Hexachlorobenzene
 - Mercury compounds
 - Octachlorostyrene
 - Pentachlorobenzene
- 0.1 g/yr (manufactured, processed, or otherwise used)**
 - Dioxin and dioxin-like compounds

* Excluding lead in stainless steel, brass, or bronze alloys

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Section 313 Chemicals and Chemical Categories

- Current list contains over 650 individual chemicals and chemical categories (See Table II of the EPA's TRI Reporting Forms and Instructions document.) There are 4 parts to the chemical list:
 - Individual chemicals alphabetically by name**
 - Individual chemicals by CAS #**
 - Chemicals with qualifiers**
 - Chemical categories**
- The list can change – check every year. Changes are listed in the front of the TRI Reporting Forms and Instructions, on the TRI website, and in TRI-MEweb.
- Section 313 chemical list and more information available at: <http://www2.epa.gov/toxics-release-inventory-tri-program/tri-listed-chemicals>

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Chemical List Changes

- A rule was published on November 28, 2016, adding hexabromocyclododecane (HBCD) category to the TRI list of reportable chemicals.
 - Facilities that manufacture, process, or otherwise use HBCD should collect release and other waste management information on this chemical during 2017. If TRI chemical use and other thresholds are met, facilities must report on this chemical for Reporting Year 2017 with forms due on July 1, 2018.
- <https://www.epa.gov/toxics-release-inventory-tri-program/addition-hexabromocyclododecane-hbcd-category-tri-list-final>
- A rule was published on November 23, 2015, adding 1-bromopropane to the TRI list of reportable chemicals.
 - Facilities that manufacture, process or otherwise use 1-bromopropane that meet threshold determinations for manufacture, process or otherwise use must submit reports for this chemical by July 1, 2017.
- <http://www2.epa.gov/toxics-release-inventory-tri-program/addition-1-bromopropane>
- A rule was published on September 30, 2014, adding a nonylphenol category to the TRI list of reportable chemicals.
 - Facilities that manufacture, process or otherwise use nonylphenol began reporting to the Agency in 2016 (for Reporting Year 2015).

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<http://www2.epa.gov/toxics-release-inventory-tri-program/addition-nonylphenol-category>

TRI Chemical Categories

Metal compound chemical categories

- Antimony Compounds
- Arsenic Compounds
- Barium Compounds *
- Beryllium Compounds
- Cadmium Compounds
- Chromium Compounds **
- Cobalt Compounds
- Copper Compounds ***
- Lead Compounds
- Manganese Compounds
- Mercury Compounds
- Nickel Compounds
- Selenium Compounds
- Silver Compounds
- Thallium Compounds
- Vanadium Compounds
- Zinc Compounds

For all categories: Includes any unique chemical substance that contains the element or compound as part of that chemical's infrastructure

* Does not include Barium Sulfate CAS 7727-43-7

** Except chromite ore and unreacted ore component of processing residue (see RFI for further information)

*** Does not include copper Phthalocyanine compounds that are substituted with only hydrogen, and/or chlorine and/or bromine

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Note: Elemental metals and metal compounds are separately listed chemicals under Section 313.

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Section 313 Chemicals With Qualifiers

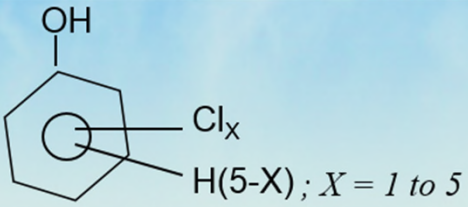
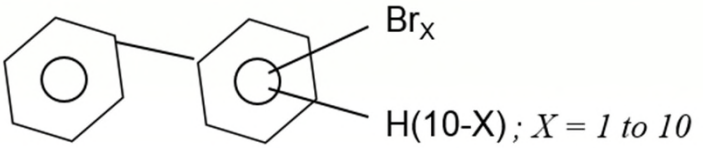
- Qualifiers - Listed chemicals with parenthetical qualifiers subject to TRI reporting only if manufactured, processed, or otherwise used in specified form (40 CFR § 372.25(g)). Below are some examples (see Table II of EPA's TRI Reporting Forms and Instructions document):

Chemical	CAS #	Qualifier
Aluminum	7429-90-5	Fume or dust
Aluminum Oxide	1344-28-1	Fibrous forms
Asbestos	1332-21-4	Friable forms
Isopropyl alcohol	67-63-0	Only manufacturers using strong acid process
Phosphorus (not phosphate)	7723-14-0	Yellow or white
Saccharin	81-07-2	Manufacture only
Hydrochloric acid	7647-01-0	Acid aerosols
Sulfuric acid	7664-93-9	Acid aerosols
Vanadium	7440-62-2	Except when contained in alloy

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EPCRA TRI Chemical Categories (examples)

Chlorophenols	
Cyanide Compounds	XCN where X=H or any other group where a formal dissociation may occur. For example, KCN or Ca(CN) ₂
Diisocyanates	20 individual compounds cited in Category
Dioxin and Dioxin-Like Compounds:	17 individual compounds cited in Category
Ethylenebisdithiocarbamic acid, salts and esters (EBDCs)	Includes a substance that may contain EBDC or EBDC salt or ester as part of its infrastructure
Certain Glycol Ethers	Complex definition
Nicotine and salts	Includes a substance that may contain it or salt as part of its infrastructure
Nitrate compounds	Water dissociable, reportable only when in aqueous solution
Polybrominated Biphenyls (PBBs)	

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Manufacturing Activities

- Manufacturing (EPCRA § 313(b)(1)(C)(i) and 40 CFR § 372.3)
 - generating a Section 313 chemical
 - **Intentionally producing chemicals for:**
 - *Sale*
 - *Distribution*
 - *On-site use or processing (e.g., intermediates)*
 - **Coincidentally producing chemicals as impurities* or by-products**:**
 - *At **any point** at the facility, including waste treatment (#152 of 1998 Q&A) and fuel combustion (#252 and #254 of 1998 Q&A)*
 - **Importing**
 - *“Cause” to be imported*

**Impurity=TRI chemical that still remains with the final facility product as it is distributed into commerce (#151 and #319 of 1998 Q&A)*

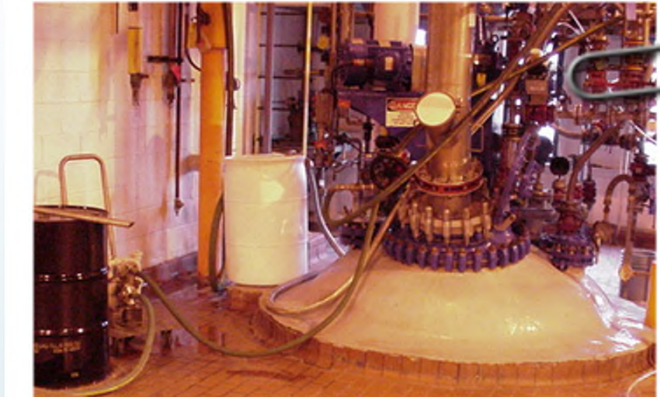
***By-product=TRI chemical that is separated out from the process mixture before it becomes the final product*

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Processing Activities

- Processing (EPCRA § 313(b)(1)(C)(ii) and 40 CFR § 372.3) - preparation of a Section 313 chemical, after its manufacture, for distribution in commerce:
 - **Use as a reactant to manufacture another substance or product**
 - **Add as a formulation component**
 - **Incorporate as an article component**
 - **Repackage for distribution**
 - **Quantities sent off-site for recycling**
 - **Incidentally include as an impurity**

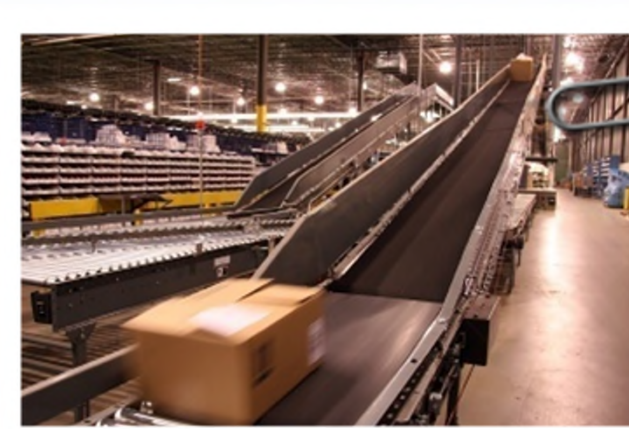


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Repackaging as a Processing Activity

- Repackaging a Section 313 chemical for distribution in commerce is considered processing
 - **Repackaging includes:**
 - *From container to tanker truck and vice versa*
 - *Between similar size containers*
 - *Via pipeline to/from a tank*
 - **Repackaging does not include:**
 - *Sampling without repackaging*
 - *Re-labeling*
- Repackaging without distribution into commerce is not processing
- Transfer to a storage tank for mere storage is not processing



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Otherwise Use Activities

- Otherwise Use (40 CFR § 372.3) - includes most activities that are NOT manufacturing or processing.

Examples

- **Chemical processing aid (e.g., solvents, catalysts, buffers, non-incorporative reagents)**
- **Manufacturing aid (e.g., lubricants, refrigerants, coolants, hydraulic fluids, metalworking fluids)**
- **Ancillary activities**
 - *Fuels, cleaners, degreasers*
 - *Chemicals used to remediate or treat wastes*
 - *Fabrication and/or use of tools in your process*
 - *Installation of piping and process-related equipment, e.g., reactors, constructing storage tanks, asphalt roadways*



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Otherwise Use Activities (continued)

Managing wastes received from off-site also counts as "Otherwise Use"

- **Disposal, treatment for destruction on-site, or stabilization that does not result in further distribution in commerce are considered otherwise use if:**
 - *Section 313 chemical was received from off-site for the purposes of further waste management, or*
 - *Section 313 chemical was manufactured as a result of waste management activities on materials received from off-site for the purpose of further waste management.*
- **On-site energy recovery is an otherwise use activity.**
- **Waste management activities, including on-site recycling, treatment for destruction, waste stabilization and release/disposal of Section 313 chemicals in wastes generated on-site are not threshold activities.**

Calculating Activity Thresholds

- The threshold quantity is the total amount manufactured, processed, or otherwise used, NOT the amount released.
- Calculate the total amount of Section 313 chemical used for a specific threshold activity
- Each activity threshold is calculated separately and they are not additive

Example of Calculating Activity Thresholds

Over the course of a reporting year, a facility manufactures 24,000 pounds of a non-PBT chemical, subsequently process that amount, and also happen to otherwise use 9,000 pounds of the same chemical. That facility has not exceeded a non-PBT chemical activity threshold and would NOT be required to submit a TRI report for that chemical.

- Calculations for reporting waste management may be different from threshold quantities.

Threshold Determination for Compound Categories

- Count together all compounds within the same chemical category for each activity, even if different compounds within a category are used in separate operations
- Consider the entire weight of all the different chemical compounds in the same chemical category when determining thresholds
- Note: calculations for release and other waste management estimates of metal compounds based on the parent metal weight only; and for nitrate compounds are based on weight of nitrate ion only

Activities That Are Not TRI Threshold Activities

- Activities that, alone, do NOT constitute a threshold activity
 - **Storage**
 - **Remediation of on-site contamination (assuming no listed chemicals are manufactured during remediation)**
 - **Re-labeling without repackaging**
 - **Direct reuse onsite**
 - **On-site recycling (not including wastes received from off-site)**
 - **Transfers sent off-site for further waste management (not including recycling)**
 - **Repackaging (and blending, if any) of waste fuels for burning for energy recovery. (However, all fuels, including waste fuels (with blending, if any), are considered otherwise used when combusted for energy recovery.)**

Note: While these activities are not included in the threshold determination, releases and wastes from these activities are not exempt from reporting if threshold is exceeded through other activities (unless specifically eligible for one of the reporting exemptions).

Quiz #2 Question 1

A plant uses benzene as a raw material to manufacture liquid industrial adhesive. The plant adds 27,000 lb of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lb are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold?

Select your choice.

- A. 27,000 lb
- B. 24,000 lb
- C. 3,000 lb

Quiz #2 Question 3

A facility processes 18,000 lb copper sulfate, 10,000 lb of cuprous oxide, and otherwise uses 12,000 lb of aqueous sulfuric acid solution in a closed system. For which TRI chemicals or chemical categories would the facility need to submit a TRI form?

Select your choice.

- A. copper compounds and sulfuric acid
- B. only copper compounds
- C. only sulfuric acid

Quiz #2 Question 2

If a facility processes 20,000 lb of methylene diphenyl diisocyanate (MDI) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards its processing threshold for the diisocyanates category?

Select your choice.

- A. 10,000 lb
- B. 20,000 lb
- C. 30,000 lb



Section III:
Reporting Exemptions

Reporting Exemptions

- If an exemption applies, then the amount of Section 313 chemical subject to the exemption does NOT have to be included in:
 - **Threshold determinations**
 - **Release and waste management reporting**
- Recognize that exemptions only apply to certain limited circumstances
- Misusing exemptions may lead to enforcement action



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Reporting Exemptions

- Types of exemptions (40 CFR § 372.38)
 - **De minimis**
 - **Article**
 - **Laboratory activities**
 - **NAICS code specific**
 - Coal mining extraction activities
 - Metal mining overburden
 - **“Otherwise use” exemptions**
 - Motor vehicle maintenance
 - Routine janitorial or facility grounds maintenance
 - Structural components
 - Personal use
 - Intake water and air



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De Minimis Exemption

- The quantity of a non-PBT Section 313 chemical in a mixture or other trade name product is eligible for the *de minimis* exemption (40 CFR § 372.38(a)) if the chemical is:
 - **An OSHA-defined carcinogen present at a concentration of less than 0.1% (See 29 CFR § 1910.1200(d)(4))**

OR

 - **Any other non-PBT TRI chemical present at a concentration of less than 1%**
- The TRI *de minimis* level appears next to each chemical on the chemical list in Table II of the *TRI Reporting Forms and Instructions* (1.0, 0.1 or * for PBT chemicals where *de minimis* is not allowed (See 40 CFR § 372.38(a)))

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De Minimis Exemption

HOW IT WORKS...

- *De minimis* exemption generally applies to non-PBT chemicals:
 - **In mixtures or trade name products received from off-site, including imported**
 - **Coincidentally manufactured as impurities that remain in products distributed in commerce**
- *De minimis* exemption does not apply to:
 - **Manufactured chemicals (in most cases): this includes by-products produced from manufacturing, processing, otherwise use, or any waste management**
 - **Wastes received from off-site**
 - **PBT chemicals (except for supplier notification)**

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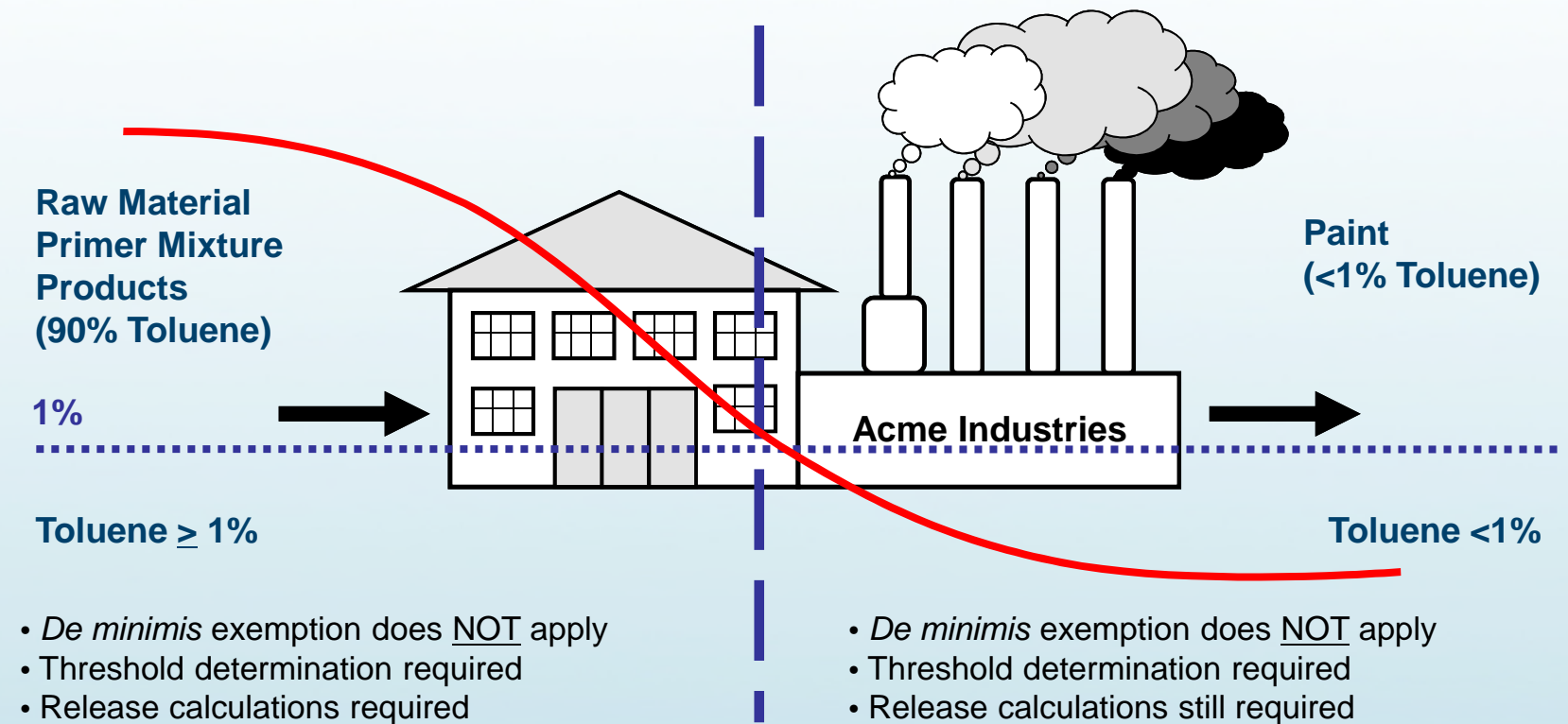
PBT Chemicals and the *De Minimis* Exemption

- The *de minimis* exemption cannot be applied to PBT chemicals.
- All other EPCRA section 313 exemptions can apply to PBT chemicals.
- Facilities that receive a mixture and know that PBT chemicals are present must consider each PBT chemical in threshold and release calculations regardless of whether or not supplier notification was provided



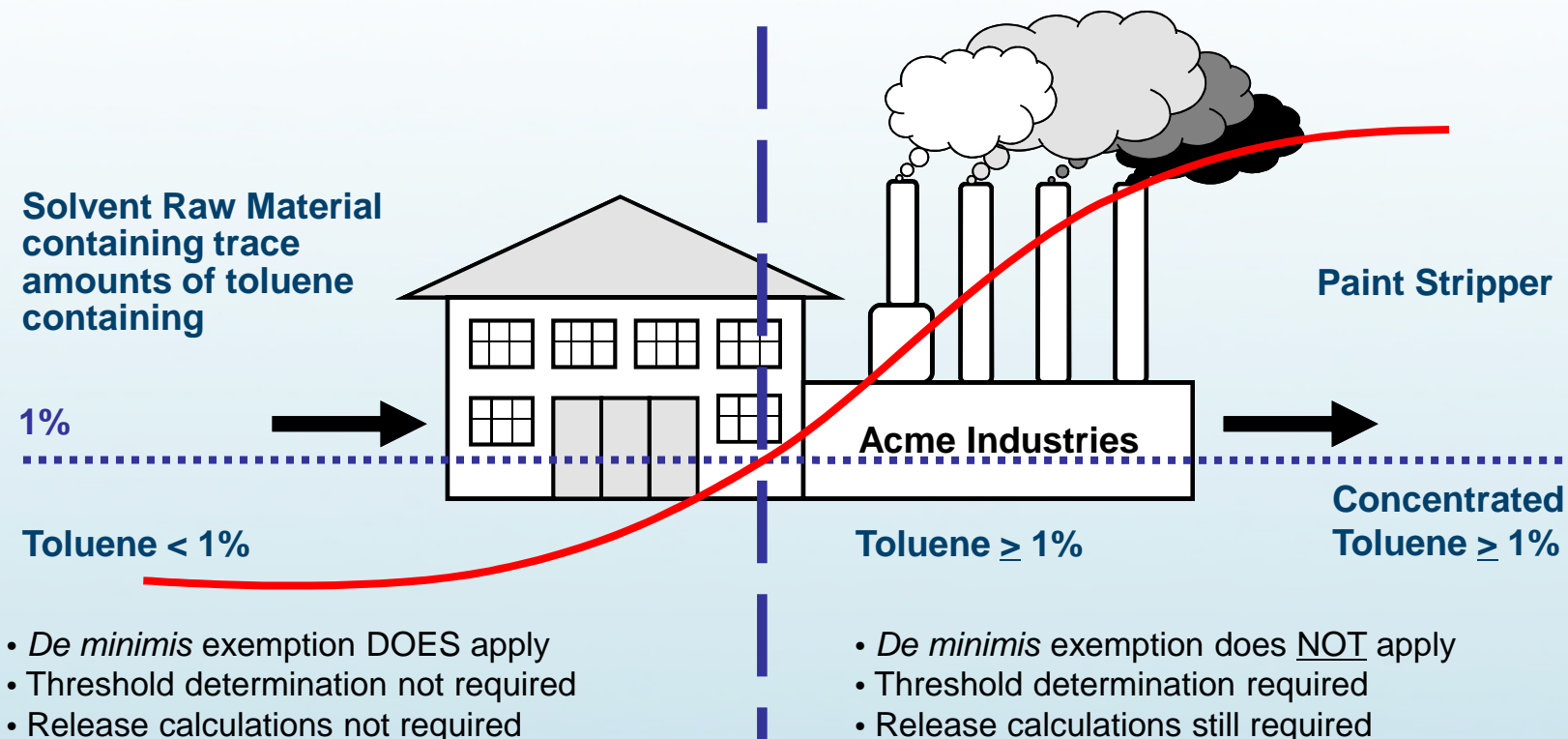
De Minimis Exemption: How It Works... (cont.)

- Processing a non-PBT Section 313 chemical in a mixture to below the *de minimis* concentration does NOT exempt the chemical from threshold determinations and release calculations



De Minimis Exemption: How It Works... (cont.)

- Processing a non-PBT Section 313 chemical in a mixture to above the *de minimis* concentration triggers threshold determinations and, if thresholds are met, release calculation requirements



Article Exemption Applicability

- To qualify for the article exemption, the article must meet 3 criteria (40 CFR § 372.3):

- Is formed into a specific shape or design during manufacture; and
- Has end-use functions dependent in whole or in part on its shape or design during end-use; and
- Does NOT release a Section 313 chemical under normal processing or use conditions at a facility



Article Exemption: How it Works

- Releases of a Section 313 chemical from an article may negate the exemption. To maintain the article status, total releases from all like items must be:
 - In a form having a specific shape or design; or
 - Recycled, directly reused; or
 - 0.5 pound or less released per year (may be rounded down to zero)
- If more than 0.5 pound per year of a Section 313 chemical is released from all like items in a form not having a specific shape or design and is not recycled or directly reused, none of the items meet the articles exemption
- End use must be dependent upon the item's initial shape or design (For example, sheet metal must maintain its initial thickness, and wire and pipe must maintain their initial diameter.)
- See *TRI Reporting Forms and Instructions* for more on the article exemption

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Article Exemption: Examples

- Wire is cut to specified lengths. Wastes include off-spec cuts and dust.
 - Generation of off-spec cuts that are recognizable as articles will not, by themselves, negate the article status
 - Dust and off-spec cuts not recognizable as articles, with greater than 0.5 pound of ANY Section 313 chemical released annually, and not recycled or directly reused, negate the article status
- Fluorescent light bulbs containing mercury are installed and used. Following use, the bulbs are crushed for recycling at the facility and mercury is released.
 - Crushing bulbs for recycling after use for lighting at the facility is not considered release under normal conditions of processing or use at this facility; the article exemption may apply.

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Article Exemption

- Article Exemption is often inappropriately used!
 - In many instances when metals are machined, cut, or ground, in any manner, the article exemption may not be applicable.
- Generally, the articles exemption does not apply to the actual manufacturing of articles.



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Laboratory Activity Exemptions

HOW IT WORKS...

- Section 313 chemicals used in these laboratory activities under the direct supervision of a technically qualified individual ARE exempt from threshold and release and waste management reporting (40 CFR § 372.38(d) and 1998 Q&A #311):
 - Sampling and analysis
 - Research and development
 - Quality assurance
 - Quality control
- Section 313 chemicals used in these laboratory activities are NOT exempt:
 - Specialty chemical production
 - Pilot-scale plant operations
 - Activities not conducted in lab
 - Support services
 - Photo processing
 - Equipment maintenance/cleaning

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Motor Vehicle Maintenance Exemption

- Section 313 chemicals used to maintain vehicles operated by the facility are eligible for the exemption from threshold determinations (40 CFR § 372.38(c)(4))
 - “Otherwise use” exemption
- Motor vehicles include cars, trucks, tanks, and forklifts
- Motor vehicle maintenance includes:
 - **Fueling and adding other fluids (e.g., ethylene glycol)**
 - **Body repairs**
 - **Parts washing**



Note: This exemption does NOT apply to “manufacture” of Section 313 chemicals from combustion of fuels.

Structural Component Exemption

- Section 313 chemicals used as structural components are eligible for exemption (See 40 CFR § 372.38(c)(1)). Building components that are process-related are not “structural components” as contemplated by the exemption.
- Non-process-related building components that are “structural components” and therefore eligible for the exemption include:
 - **Potable water pipes and other non-process-related pipes and structures**
- Processed-related building components that are NOT “structural components” and therefore NOT eligible for the exemption include:
 - **Refractory brick, boiler tubes, process-related pipes, anodes used in electroplating, grinding wheels, & metal working tools**
 - **Structural components that are integral to a non-industrial facility’s “process” (e.g., federal prisons, hospitals, parks)**

Routine Janitorial or Facility Grounds Maintenance Exemption

- Section 313 chemicals contained in products used for non-process related routine janitorial or facility grounds maintenance ARE eligible for exemption (40 CFR § 372.38(c)(2)):
 - **Phenol in bathroom disinfectants**
 - **Pesticides or fertilizers used on lawns**
 - “Otherwise use” exemption
- Section 313 chemicals used in the following activities are NOT exempt
 - **Facility equipment maintenance**
 - **Cleaning or maintenance activities that are directly associated with or integral to the production process at the facility**

Note: Chemicals otherwise used in janitorial or grounds maintenance activities may not be exempt if part of your facility’s “process” is to provide these services (e.g., federal hospitals, prisons, parks). Also, chemicals manufactured during routine janitorial or facility ground maintenance are not exempt.

Other Section 313 “Otherwise Use” Exemptions

- Section 313 chemicals contained in non-process related items for employee personal use (40 CFR § 372.38(c)(3))
 - Non-federal Facilities:**
 - **HCFC 22 in air conditioners used solely for employee comfort (exemption does NOT cover process cooling using chemical-based cooling systems)**
 - **Chlorine used to treat on-site potable water**
 - **Phenol used in a facility medical dispensary**
 - Federal Facilities:**
 - **Does not include TRI chemicals used for providing services to non-employees (e.g., patients in federal hospitals, prisoners, park visitors)**
- Section 313 chemicals found in intake water and air

Sector Specific Exemptions

- **Coal mining extraction activities** are exempt from threshold determinations and release reporting (40 CFR § 372.38(g)) (applies to NAICS Codes 212111-212113):
 - **Coal extraction: physical removal or exposure of ore, coal, minerals, waste rock, or overburden prior to beneficiation, and encompasses all extraction-related activities prior to beneficiation (40 CFR § 372.3)**
- Chemicals in **metal mining** overburden that are processed or otherwise used are specifically exempt from TRI reporting (40 CFR § 372.38(h)) (applies to NAICS Codes 212221, 212222, 212231, 212234, 212299):
 - **Overburden: unconsolidated material that overlies a deposit of useful materials or ores (40 CFR § 372.3)**

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Chemical Information Management

- All non-exempt manufacture/processes/otherwise use of Section 313 chemicals at the facility must be counted towards chemical activity thresholds.
- Tracking toxic chemicals entering facility
 - **Purchasing/Inventory**
 - **Contractors**
 - **Capital purchases (e.g., chillers, process equipment)**
 - **Direct purchases (credit card or other emergency purchases)**
 - **Direct and indirect materials**
 - **Manufacturing byproducts/intermediates generated**
- Need cooperation and support from all functional groups purchasing or using Section 313 chemicals
- Be comprehensive to ensure accurate threshold determination!

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Section IV: Threshold Determination

Threshold Determinations

- Identify Chemicals and Concentrations:
 - **SDS**
 - **Product or Specifications**
 - **Available Supplier/Vendor Product QA/QC data**
 - **Industry Standards (API, ASTM, etc.)**
 - **Waste Profiles**
 - **Process Knowledge**
 - **Other References (AP-42, WebFIRE, Merck Index)**
 - **Supplier Notification**
- Collect Data to Calculate Thresholds:
 - **Inventory or Purchase Records**
 - **Throughput/Production Data**
 - **Integrated Supplier Records**
 - **EPCRA or Other Env. Reports**
 - **Air Permits / MACT or Similar Standards / Emission Inventories**
 - **Water Permits / DMR's / Discharge Reports**
 - **Annual/Biennial Waste Reports**
 - **User Records**
 - **Other Vendor Records (can call vendor)**



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TRI Chemicals Contained in Mixtures

- For the threshold quantity, only include the amount of the TRI chemical in the mixture, not the weight of the entire mixture.
- The *de minimis* exemption (40 CFR § 372.38(a)) applies to non-PBT chemicals contained in mixtures at less than 1.0% or 0.1% (for carcinogens).
 - **The *de minimis* exemption is related to the concentration of the chemical in a mixture, NOT the quantity of the mixture used.**
- A metal alloy can be thought of as solid solution. To determine threshold quantity, multiply the concentration of the TRI chemical in the alloy by the total weight of alloy processed or otherwise used.

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Determining Concentrations in Wastes

- If concentration is exact, upper bound, range, or lower bound, use the guidance for mixtures and other trade name products discussed earlier
- If concentration is below detection limit, use engineering judgment:
 - **If the Section 313 chemical IS expected to be present, assume 1/2 of full detection limit**
 - **If the Section 313 chemical is NOT expected to be present, assume 0**

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Determining Concentrations in Mixtures or Other Trade Name Products

- Determine whether thresholds were exceeded for listed chemicals in a mixture (40 CFR § 372.30(b)(3)):
 - **Exact concentration - use concentration provided:**
 - *SDS = 25%* *Use 25%*
 - **Upper bound - use upper limit**
 - *SDS < 25%* *Use 25%*
 - **Range - use the midpoint of the range**
 - *SDS: 30 – 50%* *Use 40%*
 - **Lower bound - subtract out other known constituents, create a range, and use the midpoint of range**
 - *SDS: >75% toxic chemical* *Use 87.5% (top of range = 100%)*
 - *SDS: >75% toxic chemical* *Use 80% (range = 15% water 75% - 85%)*

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Supplier Notification

- Supplier notification - requires suppliers of mixtures or trade name products to covered facilities (See 40 CFR § 372.45(a)) to:
 - **Identify Section 313 chemical(s) by name and CAS number**
 - **Identify Section 313 chemical(s) as being subject to Section 313 requirements**
 - **Provide concentration (or range) of Section 313 chemicals in mixtures and other trade name products (not wastes)**
 - **Provide notification at least annually in writing or attached to the SDS**
 - **Update notification when changes occur**
- The Regulatory Information section of the SDS should identify any chemicals that are subject to TRI reporting
- Suppliers of mixtures containing PBT chemicals below *de minimis* concentrations do not need to supply notification

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Watch for Double Counting

- For threshold determinations, Section 313 chemicals recycled from spent or contaminated materials or Section 313 chemicals directly reused:
 - Count original amount used only once
 - Materials in use from previous years, count only the quantity added during current reporting year
- Section 313 chemicals stockpiled or in inventory but not manufactured, processed, or otherwise used during reporting year are NOT counted for threshold determinations

Chemicals sent off-site for recycling and returned to the facility are considered new materials and counted for threshold determinations

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Count the Original Amount Used Only Once

- Example: If a chemical is blended into a product mixture, and then this mixture is packaged for sale into 55 gallon drums, these are both processing activities, the chemical is “processed” twice. Only count this quantity once towards the processing threshold.
 - During Reporting Year, 20,000 lb of toluene were blended with other chemicals to create a paint product.
 - The paint product (containing the 20,000 lb of toluene) was then packaged into 55 gallons drums for sale.
 - The processing threshold quantity for this facility for Reporting Year = 20,000 lb

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Multi-Establishment Facility

- Reporting as multi-establishment facility (40 CFR § 372.30(c))
 - Multi-establishment facilities have the option to file separate Form R reports for each part of the facility
 - Threshold calculations must account for all the facility’s activities and are not performed at the establishment level
 - Form R reports must include all non-exempt releases and other waste management activities at the facility
 - Use the ‘Report by Part’ option in TRI-MEweb to prepare separate Form R reports for the multi-establishment facility
 - Avoid double-counting at the facility of chemicals involved in intra-facility transfers

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Example: EPCRA Section 313 Non-PBT Chemical Reporting Threshold Worksheet

Facility Name: OMNI CHEMICAL Date Worksheet Prepared: _____
 Toxic Chemical or Chemical Category: Toluene Prepared By: J.S.P.
 Reporting Year: _____

Step 1. Identify amounts of the toxic chemical manufactured, processed, or otherwise used.

Mixture Name or Other Identifier	Information Source	Percent by Weight	Total Weight (in lb)	Amount of the Listed Toxic Chemical by Activity (in lb):		
				Manufactured	Processed	Otherwise Used
1. Bulk Toluene	SDS	98	23,000		22,500	
2. Joe's Degreaser	Purchasing	50	10,000			5,000
3. Bathroom Paint	Vendor	5	30,000			1,500
4. Parts Washer Fluid	Purchasing	40	10,000			4,000
5.						
6.						
7.						
Subtotal:				(A) _____ lb	(B) 22,500 lb	(C) 10,500 lb

Step 2. Identify exempt forms of the toxic chemical that have been included in Step 1.

Mixture Name as Listed Above	Applicable Exemption	Note Fraction or Percent Exempt (if Applicable)	Exempt Amount of the Toxic Chemical from Above (in lb):			
			Manufactured	Processed	Otherwise Used	
1. Bathroom Paint	Struct. Comp.	100			1,500	
2.						
3.						
4.						
5.						
6.						
7.						
Subtotal:				(A ₁) _____ lb	(B ₁) 22,500 lb	(C ₁) 1,500 lb

Step 3. Calculate the amount subject to threshold: (A - A₁) _____ lb (B - B₁) 22,500 lb (C - C₁) 9,000 lb

Compare to thresholds for section 313 reporting: 25,000 lb 25,000 lb 10,000 lb

If any threshold is met, reporting is required for all activities. Do not submit this worksheet with Form R. Retain for your records.

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Lessons Learned

Begin early

- Implement a program to gather “real-time” data on usage
- Searches for historical information can be difficult

Team approach

- Include all relevant personnel (e.g., engineering, purchasing, environmental, waste management, operations)

Recordkeeping & Documentation

- Keep good records and document all work

Record Keeping and Documentation

Importance of good record keeping

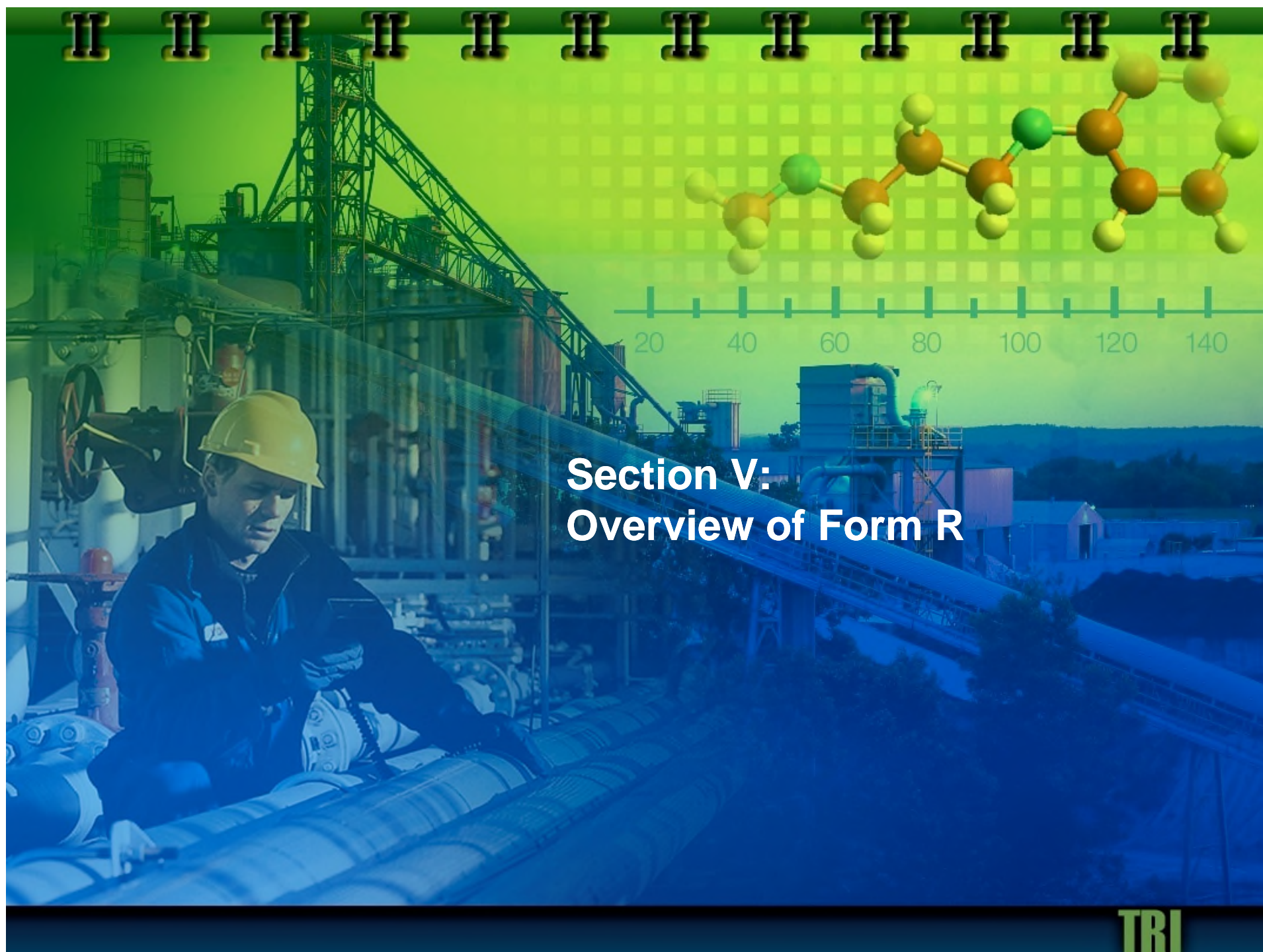
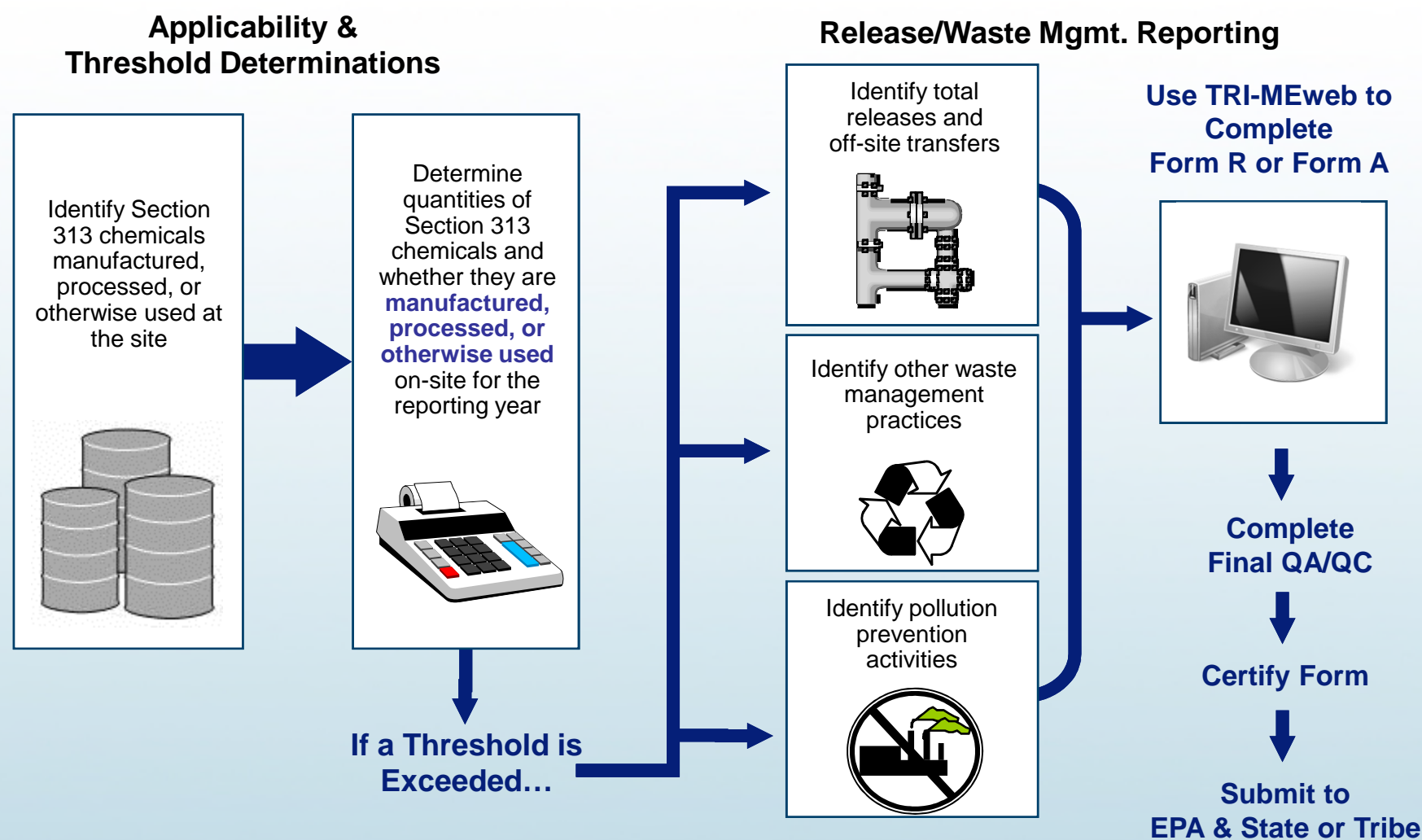
- Detailed records improve reporting accuracy and data quality
- Reduces replication of effort from year to year
- Well-labeled calculations and engineering assumptions serve as standard operating procedures (SOPs) for future years
- Ensures consistency from year to year, especially if personnel responsible for reporting change



EPA Requirements

- Records used to complete Form R must be kept for three years from the time the report was submitted (40 CFR § 372.10)
- EPA may review records during a data quality audit

TRI Process – 2 Part Process



Section V: Overview of Form R

Overview of Form R

- Two principal types of information required
 - **Facility-specific**
 - **Chemical-specific**
- One form submitted to EPA and to the State/Tribe for each Section 313 chemical or chemical category exceeding applicable thresholds (assuming other reporting criteria are met.)
- Forms must be submitted electronically via TRI-MEweb. No paper submissions are accepted (except for trade secrets), including revisions and withdrawals.

Form R Content

Part I	
Section 1:	Reporting Year
Section 2:	Trade Secret Information
Section 3:	Certification
Section 4:	Facility Identification
Section 5:	Parent Company Info
Part II	
Section 1:	Toxic Chemical ID
Section 2:	Mixture Component ID
Section 3:	Activities & Uses
Section 4:	Max Amt on site for CY
Section 5:	On-site Releases
Section 6:	Off-site Transfers
Section 7:	On-site Waste Treatment, Energy Recovery, Recycling Processes
Section 8:	Source Reduction and Waste Management Activities

Facility Identification

- Select your facility with 'My Facilities'
 - For returning users, TRI-MEweb stores facility information
 - Select "Edit" to view or make changes to the facility
 - For new TRI users reporting for an existing TRI facility, look up the existing TRI facility using 'Access/Add Facility'
 - Option 1: Enter TRI Facility ID (TRIFID) and Technical Contact Name and Phone Number
 - Option 2: Enter six-to-seven digit facility access key
 - For new facilities that have never reported to TRI, set up a new facility using 'Access/Add Facility'
 - Option 3: Generate new facility in TRI-MEweb, TRIFID and access key assigned.

Facility Identification (continued)

- Facility Name and Address (Section 4.1)
 - **Facility name**
 - Standard facility names are available through the Facility Registry System (www.epa.gov/enviro/html/fii/ez.html)
 - **Street address (no PO Box or other mailing address)**
 - Mailing address required if different from street address
- Full or Partial Facility and Federal Facility Designation (Section 4.2)
 - **Facility type (select one)**
 - Federal facility;
 - Government Owned, Contractor Operated (GOCO); or
 - Neither
 - **For multi-establishment facilities, option to indicate reporting for part of a facility (Form R only).**
 - Facilities reporting by part use the same TRIFID for all reports

Facility Identification (continued)

- Parent Company Information (Section 5)
 - Parent company name
 - TRI-MEweb preloads standardized Parent Company names for prior TRI reporters. (Can change pre-loaded Parent Company names, if necessary)
 - For new TRI reporters, the TRI-MEweb software has a list of standardized Parent Company names. If reporters cannot find correct name from the provided list, enter a new name.
 - Parent company Dun and Bradstreet Number
- Facility Dun and Bradstreet Numbers (Section 4.6)

To verify the accuracy of facility and parent company D&B number and name, go to: https://www.dnb.com/product/dlw/form_cc4.htm or call 1-888-814-1435

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Facility Identification (continued)

- Primary and Secondary NAICS codes (Section 4.5)
 - Enter primary 6-digit NAICS code
 - Enter other applicable NAICS codes in decreasing order of significance
- www.naics.com/search.htm
- <http://www2.epa.gov/toxics-release-inventory-tri-program/my-facilities-six-digit-naics-code-tri-covered-industry>

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Part II - Chemical-Specific information

- TRI-MEweb preloads previous year's chemicals
- To select new chemical (Part II Sections 1.1-1.3, 2.1)
 - Select CAS number or category code and name of chemical or chemical category - except on trade secret "sanitized" form; or
 - Enter generic name only if claiming chemical name as a trade secret (40 CFR 350); or
 - Report generic name provide by supplier, if supplier claims trade secret
- Contact information (Part I, Section 4.3 and 4.4)
 - List name, phone number, and email
 - Technical contact – should be able to explain data to EPA
 - Facilities should provide an email address for the technical contact (not provided in TRI's public data release)
 - Public contact – should be able to represent the facility's data to the public.



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Activities and Uses

- Specify use(s) of the Section 313 chemical (Section 3) (e.g., manufacture, process, or otherwise use)
 - Report only activities taking place at reporting facility
 - Check all applicable boxes

3.1 Manufacture

<input checked="" type="radio"/> Yes <input type="radio"/> No	3.1 Did your facility manufacture 1,1-Dimethyl hydrazine in Reporting Year 2012?
<input checked="" type="radio"/> Yes <input type="radio"/> No	a. Was 1,1-Dimethyl hydrazine produced at your facility?
<input type="radio"/> Yes <input checked="" type="radio"/> No	b. Was 1,1-Dimethyl hydrazine imported by your facility?
<input checked="" type="checkbox"/> Yes	c. Was 1,1-Dimethyl hydrazine produced or imported for on-site use or processing ?
<input checked="" type="checkbox"/> Yes	d. Was 1,1-Dimethyl hydrazine produced or imported for sale or distribution ?
<input type="checkbox"/> Yes	e. Was 1,1-Dimethyl hydrazine produced or imported as a byproduct ?
<input type="checkbox"/> Yes	f. Was 1,1-Dimethyl hydrazine produced or imported as an impurity ?

3.2 Process

Yes No 3.2 Did your facility **process** 1,1-Dimethyl hydrazine in Reporting Year 2012?

3.3 Otherwise Use

<input checked="" type="radio"/> Yes <input type="radio"/> No	3.3 Did your facility otherwise use 1,1-Dimethyl hydrazine in Reporting Year 2012?
<input type="checkbox"/> Yes	a. Was 1,1-Dimethyl hydrazine otherwise used as a chemical processing aid ?
<input type="checkbox"/> Yes	b. Was 1,1-Dimethyl hydrazine otherwise used as a manufacturing aid ?
<input checked="" type="checkbox"/> Yes	c. Was 1,1-Dimethyl hydrazine otherwise used as ancillary or for another use ?

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Maximum On-Site Amount

- Select appropriate code indicating the maximum quantity on-site during the reporting year (Section 4).

Range Code: -- Select a Range Code --

Code	Quantity Range
1	0 - 99 lbs
2	100 - 999 lbs
3	1000 - 9999 lbs
4	10,000 - 99,999 lbs
5	100,000 - 999,999 lbs
6	1,000,000 - 9,999,999 lbs
7	10,000,000 - 49,999,999 lbs
8	50,000,000 - 99,999,999 lbs
9	100,000,000 - 499,999,999 lbs
10	500,000,000 - 999,999,999 lbs
11	greater than 1 billion lbs

- Use maximum total (non-exempt) amount present at one time during reporting year, even if the Section 313 chemical is present at more than one location at the facility
 - Based on amount in storage, process, and wastes
 - Maximum amount on site may differ from the Tier II-reported maximum amount on site value
 - Tier II is usually by mixtures, Form R is chemical-specific
 - Tier II excludes hazardous wastes, Form R does not

Reporting Releases and Waste Management

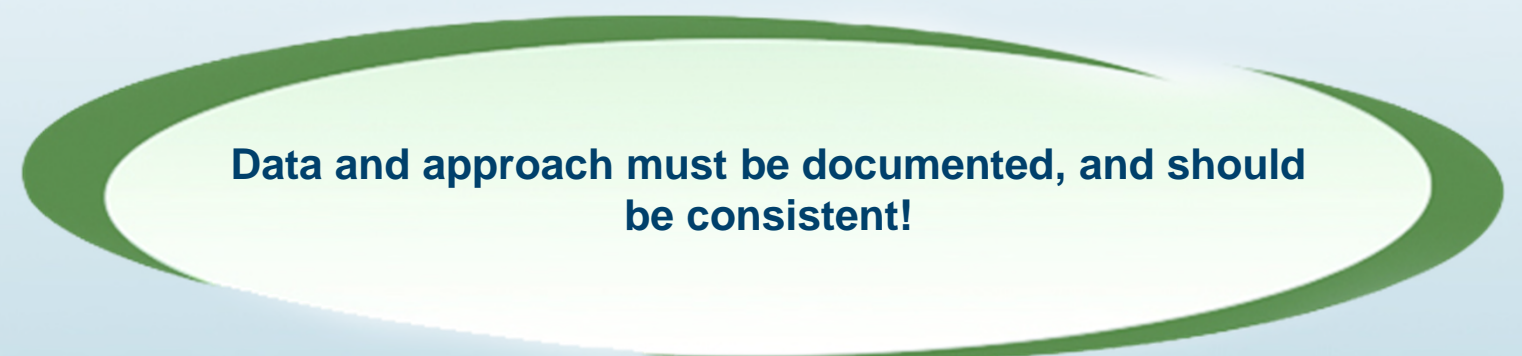
- Quantity of the toxic chemical entering each environmental medium on-site (Section 5)
- Transfers to other off-site locations (Section 6)
- On-site waste treatment, energy recovery, and recycling methods and quantities (Sections 7 and 8.2, 8.4, and 8.6)

Tools and Data Sources for Release and Waste Management Calculations

- Previous year Form R report(s) and documentation
- Process flow diagrams
- Environmental monitoring data
- Permit applications
- EPCRA, CERCLA, RCRA, NPDES, CAA and other env. reports
- Waste management manifests, invoices, and waste profiles
- Engineering calculations and other notes
- EPA guidance (AP-42, WebFIRE, TANKS, WATER9)

Estimating Quantities Released and Managed as Waste

- Consider all sources (routine and non-routine)
- Reasonable estimates are required by law
- The facility needs to determine the best approach



Data Precision

- EPA allows using two significant figures when reporting releases and other waste management estimates
 - The number of significant figures is typically the number of non-zero digits**
 - If estimate is more precise, additional significant figures may be used based on precision of data used to calculate estimate**
 - Regardless of estimation precision, however, non-PBT chemical quantities should be entered in whole numbers in TRI-MEweb*
 - Note that certain waste management quantities calculated automatically by TRI-MEweb may include up to two decimals*
- For estimates of non-PBT Section 313 chemicals under 1,000 pounds, a range code can be used:
 - A= 1-10 pounds; B = 11-499 pounds; C = 500-999 pounds**
 - Note:** *If you enter a range code, TRI data tools used by the public will display the midpoint of the range (e.g., 5, 250, or 750 lbs).*

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“NA” vs. “0”

- All data elements in Sections 5 and 6 must be completed. If you determine that there was no release or transfer quantity:
 - Use “NA” (not applicable) when no possibility of the Section 313 chemical being released to or otherwise managed as waste in that media (e.g., facility has no on-site landfill) or has not transferred any waste to an off-site location)**
 - OR
 - Use “0” when no release occurs or < 0.5 pound of a non-PBT Section 313 chemical from a waste stream is directed towards that medium**
 - Example: Discharge to water is zero; however, release possible if control equipment fails*
 - Must indicate a Basis of Estimate code (i.e., M1, M2, C, E1, E2, O) for all numerical estimates, including “0”*

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Data Precision (continued)

- For PBT chemicals, report releases and other waste management quantities at a level of precision supported by the data and estimation techniques used
- For PBT chemicals, 0.1 pound (100 micrograms for dioxins) is the smallest amount required to be reported
 - Estimates < 0.05 pounds (< 50 micrograms for dioxins) can be rounded down to zero pounds**
- TRI-MEweb will allow for decimal reporting for PBT chemicals (e.g., 9.3 pounds)

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Quantity Entering Each Medium

- Report total releases of the Section 313 chemical to each environmental medium on-site - air, water, land (Section 5).
- Enter Total Release, report total quantity
 - Range codes can be used in Sections 5 and 6 for non-PBT Section 313 chemical quantities less than 1,000 pounds***
 - A = 1 - 10 pounds*
 - B = 11 - 499 pounds*
 - C = 500 - 999 pounds*

** Note that similar quantities reported in Section 8 of Form R must be actual values and not ranges. The Section 8 Calculator in TRI-MEweb will assume the midpoint of any ranges reported in Sections 5 and 6 when calculating quantities for Section 8. If you do not wish to use the midpoint of the range in Section 8 calculations, it is best to enter a value rather than a range in Section 5.*

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Basis of Estimate Codes

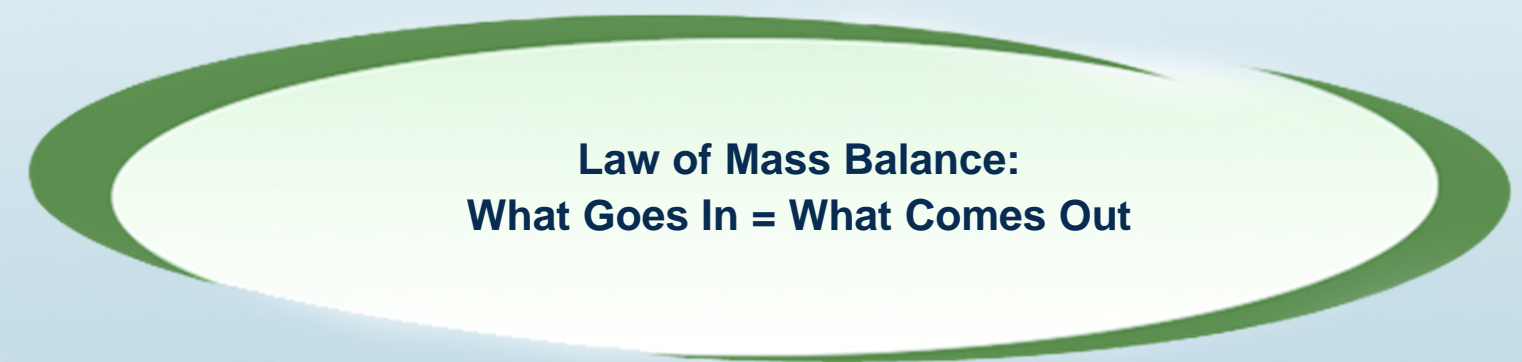
- One of the following “Basis of Estimate” codes must be listed on the Form R for each release and waste management quantity reported:
 - Continuous monitoring (M1)
 - Periodic or random monitoring (M2)
 - Mass balance calculation (C)
 - Published emissions factors (E1)
 - Site-specific emissions factors (E2)
 - Engineering calculations (O)
 - Everything NOT M1, M2, C, E1 or E2 above, such as:
 - Best engineering judgment
 - Estimated removal efficiencies
 - Non-chemical-specific and non-published emission factors
- Use the code on the Form R for the method used to estimate the largest portion of the release

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Fugitive or Non-Point Air Emissions

- Enter total fugitive releases of the Section 313 chemical, including leaks, evaporative losses, building ventilation, or other non-point air emissions (Section 5.1)
- Example Using a Mass Balance Basis of Estimate (C):
 - 5,000 lbs of a volatile solvent are added during the year as part of the manufacture of a liquid adhesive. 4,950 lbs of the solvent are contained in the final liquid adhesive product.
 - $Input (5,000 \text{ lbs}) = Output (4,950 \text{ lbs}) + Air Loss (50 \text{ lbs})$
 - Fugitive air emissions from this process = 50 lbs

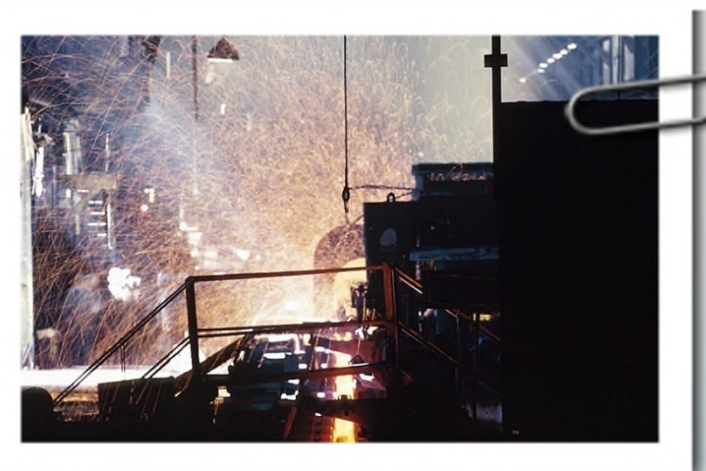


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Estimating Releases When No Data Available (Fugitive)

- Example: Metal dust observed on floor near or within metalworking operation - indicates fugitive air emission occurring and possible transfer off-site; no additional data are available:
 - Work with operations personnel familiar with the operation to gather relevant information about the releases or waste generation
 - Document the calculations performed and keep records for future reporting and in case of audit
 - Basis of Estimate code 'O' will likely be used
 - Range codes may be used in some situations



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Stack or Point-Source Air Emissions

- Enter total releases to air from point sources, including stacks, vents, pipes, ducts, storage tanks, or other confined air streams (Section 5.2)
- Data sources/tools
 - Air permit applications
 - CAA Title V air inventories
 - Process and production data
 - Published emission factors
 - Facility-specific monitoring data and emissions factors
- Example using an Emission Factor basis of estimate (E1):
 - 500,000 tons of coal are combusted in a fluidized bed combustor
 - EPA emission factor: 0.11 lb mercury emitted / 1,000,000 lb coal combusted
 - $500,000 \text{ tons} \times 2,000 \text{ pounds / ton} \times (0.11 \text{ lb mercury} / 1,000,000 \text{ lb coal}) = 110 \text{ lb mercury}$
 - 110 pounds of mercury are released through the stack
 - Note: A portion of mercury may be present in resulting ash and would need to be reported as such

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On-Site Wastewater Discharges

- Releases to streams or water bodies (Section 5.3)
 - Use the map provided in TRI-MEweb to select the name of the receiving stream or waterbody. If not found, manually enter the name.
 - Optional: Reach Code, which describes the specific location of the outfall. TRI-MEweb will automatically provide the Reach Code by using the map.
 - Enter the total amount of Section 313 chemical released to each receiving stream or waterbody
 - Enter the basis of estimate code
 - Indicate percentage of total release quantity contributed by stormwater runoff (choose NA if not applicable).
 - Select NA box for Section 5.3 if the facility does not discharge the Section 313 chemical to streams or water bodies.

Stream or Water Body Name	Reach Code (optional)	Quantity lbs	Range Code	Basis of Estimate Code	% from Stormwater	
Mississippi River	07110004000001	54		M2 - Monitoring, Periodic/Random	100%	Edit Delete

Calculating Wastewater Discharges

- Release to stream or water body (Section 5.3) and Discharges to POTW (Section 6.1) are not the same
 - Direct AND Indirect Discharges
 - Don't forget storm water!
 - If no monitoring data exists, estimate based on process knowledge and/or mass balance calculation
- Data Sources
 - DMRs (or related wastewater monitoring reports)
 - Other monitoring data such as permit applications

Calculating Wastewater Discharges

- Calculate the yearly pounds of methanol discharged using the following data concerning wastewater discharges of methanol:

Date	Conc. (mg/l)	Flow (MGD)	Amt. (lb/day)
3/1	1.0	1.0	8.33
9/8	0.2	0.2	0.33
Average =			4.33

MGD = million gallons per day 1 mg/l = 8.33 lb/million gal

- Assuming 365 days of discharge and no other sources:
 - 4.33 lb/day × 365 day = 1,580 lb total release
 - Basis of Estimate Code: M2
 - Include receiving stream or waterbody name and Reach Code (optional)
 - Indicate NA for contribution from stormwater.

On-Site Injection Wells

- Underground injection to Class I wells (Section 5.4.1)
 - Enter total amount of Section 313 chemical injected into Class I wells at facility and basis of estimate code
- Underground injection to Class II - V wells (Section 5.4.2)
 - Enter total amount of Section 313 chemical injected into Class II - V wells at facility and basis of estimate code

Total Quantity: lbs

- or -

Range Code:

Basis of Estimate:

Note: Basis of estimate code must be entered.

Other Disposal to Land On-Site

- Enter quantity of toxic chemical entering each on-site land disposal option (Section 5.5)
 - On-site landfills: RCRA Subtitle C (Section 5.5.1A)
 - On-site landfills: other (Section 5.5.1B)
 - On-site land treatment and application farming (Section 5.5.2)
 - On-site surface impoundments: RCRA Subtitle C (Section 5.5.3A)
 - On-site surface impoundments: Other (Section 5.5.3B)
 - Other disposal (includes spills or leaks to land) (Section 5.5.4)
- Quantities released to air or water during the reporting year of the initial release to land (e.g., volatilization from surface impoundments) are not included in the land disposal quantity

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On-Site Waste Management

- Examples of on-site waste management
 - Air pollution control devices
 - Wastewater treatment processes
 - Energy recovery devices
 - Recycling devices



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Waste Treatment Methods and Efficiency

- Report each waste treatment method that each waste stream containing the Section 313 chemical undergoes (Section 7A)
 - Include even if method has no effect on the chemical
 - Report the efficiency of the waste treatment methods at eliminating the Section 313 chemical from the waste stream
- Includes destruction or physical removal

Waste Treatment Profile Name	a. General Waste Stream Code	b. Waste Treatment Method(s) Sequence	c. Waste Treatment Efficiency
Chemical oxidation	L - Liquid waste streams (non-aque)	H075	Select a Range E1 - Greater than 99.9999% E2 - Greater than 99.99%, but less than or equal to 99.9999% E3 - Greater than 99%, but less than or equal to 99.99% E4 - Greater than 95%, but less than or equal to 99% E5 - Greater than 50%, but less than or equal to 95% E6 - Equal to or greater than 0%, but less than or equal to 50%

Select from the list and click **Add Selected**.

- Enter quantity treated on-site (destruction only)

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Energy Recovery Methods and Quantity

- Enter on-site energy recovery quantity and methods for Section 313 chemical
 - Section 313 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)
- Enter codes in descending order by quantities combusted

Quantity Used for Energy Recovery Onsite: Current Year (lbs)

Energy Recovery Methods:
(Select the order of energy recovery methods used)

First Method	Second Method	Third Method
<input type="text" value="Not Selected"/>	<input type="text" value="Not Selected"/>	<input type="text" value="Not Selected"/>

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Recycling Methods and Quantity

- Enter quantity and methods used for on-site recycling of the Section 313 chemical (Sections 7C and 8.4 current year)
 - Codes for recycling methods used are found in EPA's TRI Reporting Forms and Instructions document
 - Do not include energy recovery processes
- Enter codes in descending order by quantities recycled

Quantity Recycled Onsite: Current Year (lbs)

Recycling Methods:
(Select the order of recycling methods used)

First Method Second Method

Not Selected Not Selected

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Off-Site Transfers

- Includes both off-site location information and quantities of Section 313 chemicals transferred to off-site locations
- Report quantities of chemical sent off-site to each POTW or other location for recycling, energy recovery, waste treatment, or disposal
- Report only total quantity of chemical transferred off-site, not the quantity of entire waste stream mixture
- In Sections 6.1 and 6.2, Total Transfers, report total quantity
 - Range codes can be used in Sections 5 and 6 for non-PBT Section 313 chemical quantities less than 1,000 pounds*
 - A = 1 - 10 pounds
 - B = 11 - 499 pounds
 - C = 500 - 999 pounds

* Note that similar quantities reported in Section 8 of Form R must be actual values and not ranges. The Section 8 Calculator in TRI-MEweb will assume the midpoint of any ranges reported in Sections 5 and 6 when calculating quantities for Section 8. If you do not wish to use the midpoint of the range in Section 8 calculations, it is best to enter a value rather than a range in Section 6.

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Transfers to POTWs

- Discharges to publicly owned treatment works
 - Enter total quantity of the Section 313 chemical transferred to all POTWs and basis of estimate
 - Select POTW name and location for each POTW
 - May be able to find official name of POTW:
 - Using TRI-MEweb search tool
 - Facility Registry System: www.epa.gov/enviro/html/fii/ez.html
- Example using an Engineering Calculations basis of estimate (O):
 - A wet grinding process generates wastewater with 300 lbs of lead (contained in particulates) during the year. This wastewater undergoes on-site filtration prior to being sent to the POTW. Manuals from the filter equipment vendor indicate a 95% removal efficiency for particulates of this size.
 - $300 \times 0.95 = 285$ lbs removed from the wastewater
 - $300 - 285 = 15$ pounds remaining in the wastewater after filtration
 - 15 pounds of lead are transferred off-site to the POTW
- You may enter the percentage of the chemical that is released by the POTW and it will be applied in the automatic Section 8 calculations (otherwise default percentages will be used).

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Other Off-site Transfers

- Enter transfers to other off-site locations (Section 6.2)
 - Include name, address, and EPA identification (RCRA ID) number of the receiving facility
 - Enter quantity, basis of estimate, and M code for each different waste management activity (waste treatment, disposal, recycling, and energy recovery)
 - Check "NA" box to indicate no transfers to off-site locations
- Data/tools
 - Waste manifests and vendor receipts
 - RCRA reports
 - Waste characterization - analyses, profiles

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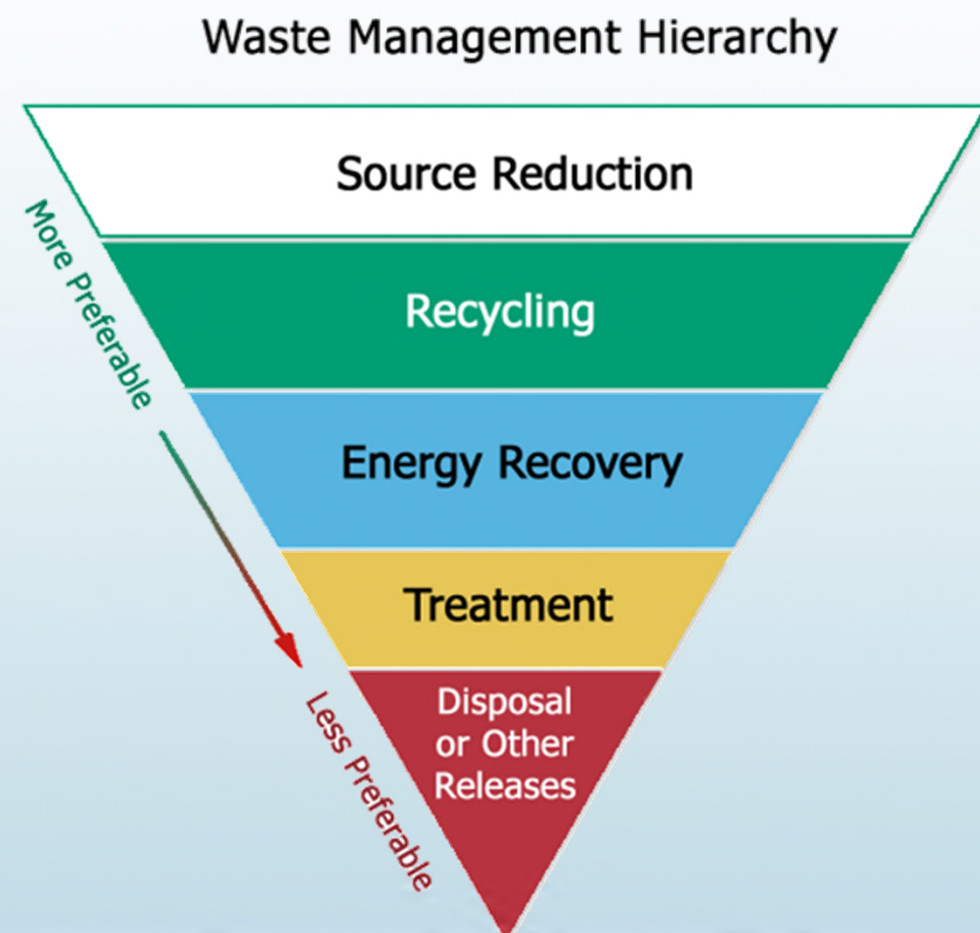
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Off-Site Waste Transfers

- Identify all sources of off-site transfers of TRI chemicals
- Potential off-site waste transfers of reportable chemicals
 - Hazardous waste
 - Non-hazardous waste (e.g., waste oil and coolant)
 - Trash
 - Scrap metal (reuse versus recycle)
 - Container residue: RCRA empty is NOT EPCRA empty
 - BE COMPREHENSIVE!**
- Identify sources for waste composition data
- Identify final disposition of each Section 313 chemical:
 - Disposal, waste treatment, energy recovery, recycling by selecting the appropriate code

Waste Management Hierarchy

- Section 8 of Form R: Source Reduction and Waste Management



Release and Waste Management Estimates

- Helpful hints for accurate release estimates
 - Always use your best available information
 - Estimate the quantity of Section 313 chemical, not the entire waste stream
 - Differentiate fugitive from stack air emissions
 - Zero air emissions for volatile organic compounds (VOCs) are unlikely
 - Watch out for releases of Section 313 chemicals with qualifiers
 - Check your math and document your work!
- Result of release estimation errors
 - Incorrect release estimates and inconsistencies could carry over from year to year

Production-Related Waste Managed (Section 8.1-8.7)

- The sum of sections 8.1 through 8.7 represents the total quantity of waste generated through regular production activities at your facility for the reporting year.

Waste Management Description	Prior Year (RY2009)	Current Year (RY2010)	Following Year (RY2011)		Second Following Year (RY2012)	
8.1a) Total on-site disposal...	0	0	<input type="text" value="0"/>	<input type="checkbox"/> NA	<input type="text" value="0"/>	<input type="checkbox"/> NA
8.1b) Total other on-site disposal...	390	410	<input type="text" value="400"/>	<input type="checkbox"/> NA	<input type="text" value="407"/>	<input type="checkbox"/> NA
8.1c) Total off-site disposal...	0	0	<input type="text" value="0"/>	<input type="checkbox"/> NA	<input type="text" value="0"/>	<input type="checkbox"/> NA
8.1d) Total other off-site disposal...	1050	1145	<input type="text" value="1100"/>	<input type="checkbox"/> NA	<input type="text" value="1068"/>	<input type="checkbox"/> NA
8.2) Quantity used for energy recovery onsite	0	0	<input type="text" value="0"/>	<input type="checkbox"/> NA	<input type="text" value="0"/>	<input type="checkbox"/> NA
8.3) Quantity used for energy recovery offsite	0	NA	<input type="text" value=""/>	<input checked="" type="checkbox"/> NA	<input type="text" value=""/>	<input checked="" type="checkbox"/> NA
8.4) Quantity recycled onsite	0	0	<input type="text" value="0"/>	<input type="checkbox"/> NA	<input type="text" value="0"/>	<input type="checkbox"/> NA
8.5) Quantity recycled offsite	0	NA	<input type="text" value=""/>	<input checked="" type="checkbox"/> NA	<input type="text" value=""/>	<input checked="" type="checkbox"/> NA
8.6) Quantity treated onsite	5000	5150	<input type="text" value="5100"/>	<input type="checkbox"/> NA	<input type="text" value="4970"/>	<input type="checkbox"/> NA
8.7) Quantity treated offsite	0	0	<input type="text" value="0"/>	<input type="checkbox"/> NA	<input type="text" value="0"/>	<input type="checkbox"/> NA

- TRI-MEweb includes a Section 8 Calculator feature that helps calculate Section 8 estimates from estimates reported in previous portions of on-line application. A validation feature ensures consistency between Sections 5 and 6 and Section 8.

Section 8: Relationship to Sections 5 and 6

Part II. Sections 8.1 - 8.7

8.1a	Total on-site disposal to Class I UIC wells, RCRA & other landfills 5.4.1 + 5.5.1A + 5.5.1B – 8.8 (on-site release or disposal due to catastrophic event)
8.1b	Total other on-site disposal or other releases 5.1, 5.2, 5.3.1, 5.3.2, 5.3.3, 5.4.2, 5.5.2, 5.5.3A, 5.5.3B, 5.5.4 – 8.8 (on-site release or disposal due to catastrophic event)
8.1c	Total off-site disposal to Class I UIC wells, RCRA & other landfills Section 6.2, M64, M65, and M81 – 8.8 (off-site disposal due to catastrophic event)
8.1d	Total other off-site disposal or other releases 6.1 (for metals and metal category compounds only) + 6.2 (quantities associated with M codes M10, M41, M62, M66, M67, M73, M79, M82, M90, M94, M99) – 8.8 (off-site disposal due to catastrophic event)
8.3	Off-site energy recovery 6.2, M56 and M92 – 8.8 (off-site energy recovery due to catastrophic events)
8.5	Off-site recycling 6.2, M20, M24, M26, M28, and M93 – 8.8 (off-site recycling due to catastrophic events)
8.7	Off-site treatment 6.1 (excluding metals and metal category compounds), 6.2 (quantities associated with M codes M50, M54, M61, M69, M95) – 8.8 (off-site treatment due to catastrophic event)

Note: Quantity reported in 6.1 is distributed among 8.1c, 8.1d and 8.7 based on final disposition. TRI-MEweb provides default percentages for making this distribution. Metals and metal category compounds should not be reported in 8.7.

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Non-Production-Related Waste Managed

- Enter the quantity of Section 313 chemical released into the environment or transferred off-site (Section 8.8) 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)
- Does not include quantities treated, recovered for energy, or recycled ON-SITE
- Quantities in Sections 8.1 through 8.7 should not include amounts reported in Section 8.8
 - TRI-MEweb calculator will subtract any quantities reported as non-production-related waste from 8.1-8.7 quantities



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Section 8: Relationship to Section 7

Part II. Sections 8.1 - 8.7

8.2	On-Site Energy Recovery <ul style="list-style-type: none"> Determine quantity for activities described in 7B Report quantity actually combusted in energy recovery unit (i.e., consider efficiency)
8.4	On-Site Recycling <ul style="list-style-type: none"> Determine quantity for activities described in 7C Report quantity actually recycled (i.e., consider efficiency)
8.6	On-Site Treatment <ul style="list-style-type: none"> Determine quantity of the chemical for activities on waste stream described in 7A Report quantity actually destroyed (i.e., consider efficiency) Metals and metal category compounds cannot be reported here

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Production Ratio or Activity Ratio

- Production ratio or activity ratio (Section 8.9)
 - A ratio of production or activity involving the Section 313 chemical in the reporting year to production or activity in the previous year
 - Puts year-to-year changes in chemical quantities released and managed as waste into the context of production
- Tips:
 - Consider using a production ratio when production is directly related to the amount of chemical used or produced
 - Consider using an activity ratio when the chemical is "otherwise used" and the amount is determined by a variable other than production
 - The Production Ratio/Activity Ratio is a ratio, not a percent change
 - You can provide information on the variable you used in your ratio in the "Optional Miscellaneous Info" section using the button in TRI-MEweb
- A Production Ratio Wizard is now available in TRI-MEweb to help you calculate your Production Ratio or Activity Ratio

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Production Ratio or Activity Ratio Examples

- Example (Production Ratio): **Oven manufacturing**

$$\frac{40,000 \text{ ovens assembled (Current RY)}}{35,000 \text{ ovens assembled (Prior RY)}} = 1.14$$
- Example (Activity Ratio): Tank washouts

$$\frac{50 \text{ Washouts (Current RY)}}{60 \text{ Washouts (Prior RY)}} = 0.83$$
- Additional Production / Activity Variable Examples, by Industry
 - Refractory Manufacturing: Tons of brick manufactured
 - Chemical Wholesalers: Gallons of glycol ethers packaged
 - Electric Power Generation: Megawatt-hours of electricity produced
 - National Security: Man-days of training per year
 - Synthetic Dye Manufacturing: Number of color changeovers
 - Waste Treatment and Disposal: Tons of waste landfilled on-site

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Source Reduction Activities

- Report Source Reduction activities implemented for the chemical, and the methods used to identify those activities (Section 8.10)
 - **Include only those source reduction activities implemented for the first time during the reporting year**
 - *Include activities that reduce the total quantity of chemical waste released (including disposal), recycled, combusted for energy recovery, or treated*
 - **Examples of Source Reduction Activities**
 - *Process or equipment changes (e.g., replacements, adjustments)*
 - *Product redesign*
 - *Changed production schedule to minimize equipment changeovers*
 - *Green chemistry practices (e.g., Optimized reaction conditions or otherwise increased efficiency of synthesis)*
- You may also report the estimated annual reduction associated with each activity using range codes provided
 - **Based on expected amount of chemical waste generation once the activity has been implemented as a percentage of the amount that would have been generated otherwise**

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Optional Pollution Prevention Information

- Report additional information in the open-ended Pollution Prevention Information text field (Section 8.11)
 - This **optional** section provides an opportunity to publicly highlight any steps your facility took to reduce the amount of toxic chemicals entering the environment
 - Information about recycling, energy recovery, and treatment is welcome in addition to details about source reduction activities
 - Facility can provide information on previous years' activities
- Tips**
 - **Be specific**
 - **Enter useful URLs**
 - **Note any barriers inhibiting P2 (using checkboxes in TRI-MEweb)**
 - **Put information unrelated to P2 in Section 9.1**
- TRI's P2 website features P2 information reported by facilities and includes a P2 reporting tip-sheet
<http://www.epa.gov/tri/p2>

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Optional Miscellaneous Information

- Optional Miscellaneous Information (Section 9.1)
 - Facility can provide any useful additional information related to any portion of the Form R submission in this new data field
 - **Examples of information to include:**
 - *Changes in production*
 - *Facility closures*
 - *Staffing changes*
 - *Calculation methods, e.g., emission factors*
 - *Explanation of data quality alerts*
- TRI-MEweb provides a pick-list of suggested topics for this Section
 - *When providing optional miscellaneous information, it is helpful to check the box next to the topic to which your information pertains*



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Section VI: Alternate Threshold Rule

Form A Eligibility

- If alternate threshold criteria met:
 - Have the option to file a Form A in lieu of a Form R
 - No detailed release, other waste management, or source reduction reporting
 - Maintain records and calculations used to determine Form A eligibility
- Facilities can submit a combination of Forms R and Forms A. Some chemicals may meet Form A criteria, others may not.
- If a facility submits a Form A and does not meet the qualifying criteria, it may result in an enforcement action.

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Criteria for Submitting Form A

- Must NOT be a PBT chemical
- Do not exceed 1,000,000 pounds of the toxic chemical manufactured, processed, or otherwise used.
- Do not exceed 500 pounds for the total annual waste management (i.e., releases including disposal, recycling, energy recovery, and treatment) of the Section 313 chemical.
 - *Equivalent to the sum of the quantities calculated for Sections 8.1 – 8.7 of the Form R*



Section VII: TRI-MEweb Introduction

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TRI-MEweb and Submitting Via CDX

- Electronic filing via TRI-MEweb is required
 - No paper submissions are accepted (except for trade secrets), including revisions and withdrawal
 - TRI-MEweb supports new reporting, revisions & withdrawals for RY 1991 – current year
 - TRI-MEweb can import current year reporting forms with data submitted for the prior reporting year and assists users in finding reporting errors
 - EPA provides instant email confirmation of transmitted and certified submissions
 - TRI-MEweb resources including tutorials are available to help users at: www2.epa.gov/toxics-release-inventory-tri-program/tri-meweb-resources
- Use hard-copy form only for trade secret reporting
 - Information about trade secret reporting at: www2.epa.gov/toxics-release-inventory-tri-program/tri-reporting-forms-and-instructions

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Accessing TRI-MEweb

- TRI-MEweb is accessed through EPA's Central Data Exchange (CDX)
 - CDX is accessed through: <https://cdx.epa.gov>
 - TRI-MEweb users must have a CDX account
 - Select TRI-MEweb user role: preparer or certifying official
- Within TRI-MEweb, new users must gain access to their facility
 - Option 1: Enter TRIFID and Technical Contact Name
 - Option 2: Enter six-digit facility access code
 - Option 3: New facility, never reported to TRI
- For assistance with accessing your facility, contact the CDX helpdesk at helpdesk@epacdx.net or call toll-free at (888) 890-1995.

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Signing and Certifying Forms

- New Certifying officials must complete the following two requirements
 - **Electronic signature agreement (ESA)**
 - *Must be completed only once, not annually, applicable to all facility profiles*
 - *Option 1: Real-time ESA approval – verify user's identity electronically*
 - *Option 2: Mail in signature form – minimum of 5 business days to process*
 - **TRIFID Certification Agreement Form**
 - *Must be completed after access to TRI-MEweb is granted by ESA approval*
 - *Facility profiles are added to TRI-MEweb using access keys or prior year information*
 - *Certifying officials must have a digitally signed TRIFID Certification Agreement for each facility profile before access to any pending submission (s) for certification is granted.*
- New certifying officials must submit an ESA and digitally sign a TRIFID certification agreement form before pending submissions can be reviewed and certified

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Optional Facility-Level Information

- Facilities may provide optional information on facility operations
- Section 9.1 of the Form R allows a facility to provide optional miscellaneous information on the form submission or facility
- However, some types of miscellaneous information do not fit well into a TRI reporting form or arise outside of the reporting process
 - **TRI-MEweb allows you to provide optional facility-level information without preparing and submitting a TRI reporting form**
 - **Accessible via the Welcome Screen or My Facilities tab**

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Optional Facility-Level Information

- Topics on which you may elect to provide information include:

- Facility name or address has changed
- Facility contact information has changed
- Facility closed either completely or temporarily
- Facility did not trigger reporting due to
 - Not having 10 or more full-time employee equivalents
 - Not being in a covered NAICS sector
 - Having fallen below reporting threshold for one or more chemicals

Benefits of providing this information include:

- Keep address and contact information up-to-date to help EPA contact your facility
 - Ensure email notices reach proper facility contacts
- Provides clarity on why reporting may have changed substantially
 - Could minimize need for EPA to contact facility on data quality matters

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For More Information and Assistance

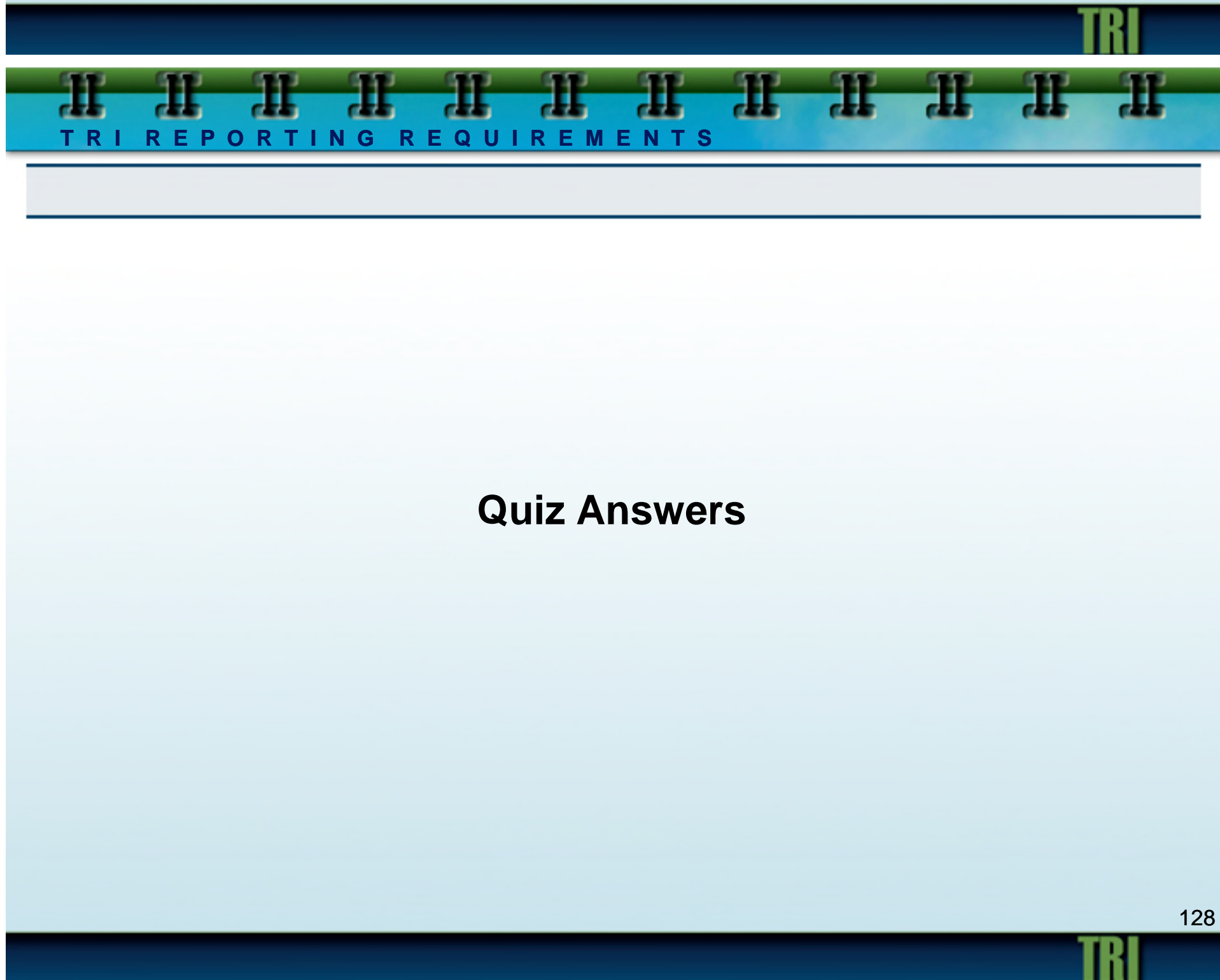
- For more information on TRI requirements, see the second part of this training course on TRI Advanced Concepts.
- For TRI reporting guidance, information and tutorials on the TRI-MEweb reporting software, and the latest changes to the TRI Program please visit www.epa.gov/tri.
- Industry-specific and chemical-specific guidance can be found at: www.epa.gov/tri/guide_docs/index.htm
- For help accessing CDX accounts, password resets, accessing a facility, or completing an ESA, contact the CDX helpdesk: <https://cdx.epa.gov/Contact>

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End of Module



Quiz Answers

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Quiz #1 Question 1

1. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A manufacturing facility, owned by ABC Corporation, with 100 full-time employees

YES

NO

Answer: Yes.

As a manufacturing facility, its primary NAICS code will be among those covered by EPCRA Section 313 (TRI). In addition, the facility employs more than 10 full-time employees. This facility would need to consider whether it has exceeded any activity thresholds for TRI chemicals or chemical categories, to determine if it needed to report.

Quiz #1 Question 3

3. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, next door to the manufacturing facility described in Question 1

YES

NO

Answer: Yes.

The maintenance and warehouse activities are considered part of the manufacturing facility because they are on adjacent properties. Since the employee threshold is exceeded, this facility would need to consider any chemical use at the warehouse and maintenance establishment along with that of the manufacturing facility, to determine if the facility needed to report.

Quiz #1 Question 2

2. Would the facility described below be covered by TRI and, therefore, need to consider its chemical use for possible reporting?
Select Yes or No.

A maintenance and warehouse facility, owned by ABC Corporation, with 5 full-time employees, a few blocks away from the manufacturing facility described in Question 1

YES

NO

Answer: No.

The facility's maintenance and warehouse activities are represented by a primary NAICS code that will not be among those covered by EPCRA 313 (TRI). In addition, the facility has fewer than 10 full-time employees. This facility would not need to report.

Quiz #2 Question 1

1. A plant uses benzene as a raw material to manufacture liquid industrial adhesive for sale. The plant adds 27,000 lbs. of benzene to its liquid adhesive-making operation during the reporting year, but 3,000 lbs. are volatilized during the operation. How much of the benzene should be applied toward the processing activity threshold? Select your choice.

- A. 27,000 lbs.
- B. 24,000 lbs.
- C. 3,000 lbs.

Answer: A is correct.

27,000 total lbs. of benzene is processed. Always apply the total amount that enters a process toward the activity threshold. The quantity of benzene processed exceeds the 25,000 lbs. processing threshold for non-PBT chemicals, therefore, the facility would need to complete a TRI form for benzene. The quantity released to the environment would be reported on the TRI Form R.

Quiz #2 Question 2

2. If a facility processes 20,000 lb of methylene diphenyl diisocyanate (MDI) in one operation and 10,000 lb of isophorone diisocyanate in another operation during the reporting year, what should it apply towards its processing threshold for the diisocyanates category?

- A. 10,000 lbs.
- B. 20,000 lbs.
- C. 30,000 lbs.

Answer: C is correct.

Methylene diphenyl diisocyanate (MDI) and isophorone diisocyanate are both chemicals within the diisocyanates chemical category; therefore, the quantities of each chemical processed during the reporting year should be summed. The facility has exceeded the reporting threshold for processing (25,000 lbs.) and would need to report for the diisocyanates category.

Quiz #2 Question 3

3. A facility processes 18,000 lbs. copper sulfate, 10,000 lbs. of cuprous oxide, and otherwise uses 12,000 lbs. of aqueous sulfuric acid solution in a closed system. For which TRI chemicals or chemical categories would the facility need to submit a TRI form?

Select your choice.

- A. copper compounds and sulfuric acid
- B. only copper compounds
- C. only sulfuric acid

Answer: B is correct.

The facility has exceeded the 25,000 lbs. processing threshold for copper compounds (18,000 + 10,000 = 28,000) and would need to submit a TRI form for copper compounds. The qualifier for sulfuric acid (see Section 313 Chemicals) indicates that it is only reportable in an aerosol form. Because the facility only used the sulfuric acid in an aqueous form (and does not generate acid aerosols), it does not need to consider it towards the otherwise use threshold, and no report for sulfuric acid is required.