



INDUSTRIAL RELEASE FACT SHEET: ARIZONA - SONORA BORDER REGION

Introduction

This fact sheet summarizes environmental releases of toxic chemicals from industrial facilities in the Border Region reporting to the U.S. Toxics Release Inventory (TRI) and Mexico’s Registro de Emisiones y Transferencia de Contaminantes (RETC) for 2012-2014 and 2011-2013, respectively. The Border Region is defined as within 100 km (62.5 miles) of the U.S. - Mexico Border.

TRI: www.epa.gov/toxics-release-inventory-tri-program

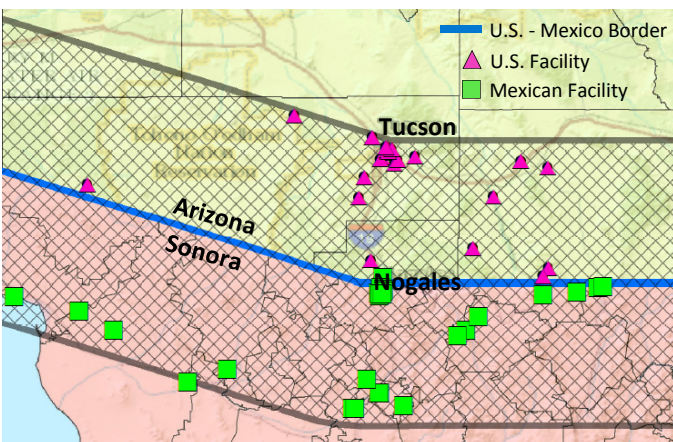
RETC: <http://apps1.semarnat.gob.mx/retc/index.html>

Data between the RETC and the TRI are not directly comparable because many reporting requirements – such as sectors covered, the pollutants subject to reporting and their processing and release thresholds, as well as the types of releases and transfers covered – differ significantly between the programs.

In addition to the source websites above, visit the Commission for Environmental Cooperation’s Taking Stock Online for more information about the PRTRs:

<http://www.cec.org/tools-and-resources/taking-stock/taking-stock-online-north-american-industrial-pollution>

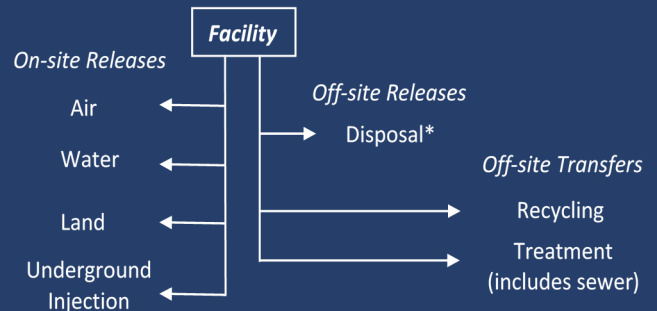
Distribution of Reporting Facilities



Pollutant Release and Transfer Registers (PRTRs)

PRTRs, including Mexico’s *Registro de Emisiones y Transferencia de Contaminantes* (RETC) and the United States’ *Toxics Release Inventory* (TRI), are national programs that track releases and transfers of pollutants that may pose a threat to human health and the environment.

Facilities subject to PRTR reporting must annually report the amounts of pollutants they release and/or transfer. Releases are emissions to air, discharges to water, placement in some type of land disposal, or transport off-site for release or disposal. Transfers include pollutants sent for recycling or further management such as energy recovery, treatment, and/or discharge to the sewer.



*Includes all metals taken off-site, except those recycled.

Metals are a special case. Those sent off-site for disposal or to sewage, treatment, or energy recovery are included in the off-site releases category. Due to their physical nature they are unlikely to be destroyed and therefore may eventually enter the environment.

Contact Information

If you have any questions or comments on this fact sheet, please contact: Emily Pimentel, U.S. EPA, by phone at (415) 972-3326 or by e-mail at pimentel.emily@epa.gov. <https://www.epa.gov/border2020>

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Reported Releases and Transfers Overview

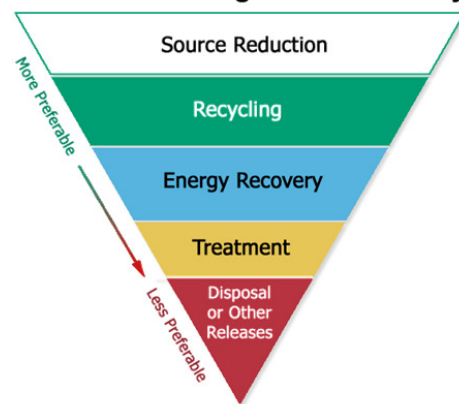
	Arizona Border Region			Sonora Border Region		
	2012	2013	2014	2011	2012	2013
Number of Facilities Reporting Releases	31	35	32	14	17	24
Total Reported Releases and Transfers	112	122	124	39	57	86
Total On-site and Off-site Disposal or Other Releases (pounds)	6,005,170	4,559,402	6,233,436	48,102	60,001	57,235
Total On-site (pounds)	5,987,757	4,473,72	6,168,475	48,102	50,979	57,232
- Air (pounds)	207,550	345,170	313,639	47,818	49,959	55,794
- Water (pounds)	98	0	52	157	927	232
- Land (pounds)	5,780,110	4,128,558	5,854,784	127	93	1,207
- Underground Injection (pounds)	0	0	0	-	-	-
Total Off-site (pounds)	17,413	85,674	64,961	0	9,021	3

Production-Related Waste Management

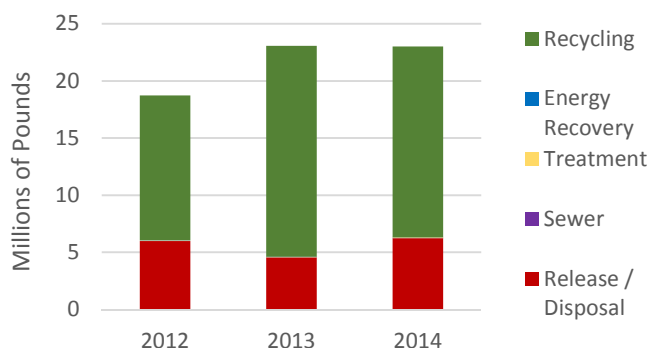
Production-related waste management, as shown in the graphs below, is information from facilities on the quantities of toxic chemicals recycled, combusted for energy recovery, treated for destruction, and disposed of or otherwise released on- and off-site. The RETC also tracks “co-processing,” which is input from another production process (includes energy recovery).

As illustrated in the Waste Management Hierarchy (to the right), elimination of waste at its source is the most preferable. For waste that is generated, the preferred management methods includes reuse or recycling, followed by burning for energy recovery, treatment, and, as a last resort, disposing of or otherwise releasing the waste. By tracking waste management practices, the goal is that facilities will shift from disposal or other releases toward increasingly safer waste management methods over time.

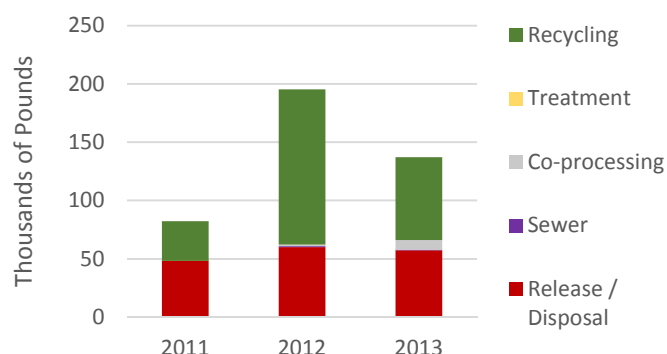
The Waste Management Hierarchy



**Production-Related Waste Managed
Arizona Border Region
TRI (2012 – 2014)**



**Production-Related Waste Managed
Sonora Border Region
RETC (2011 – 2013)**



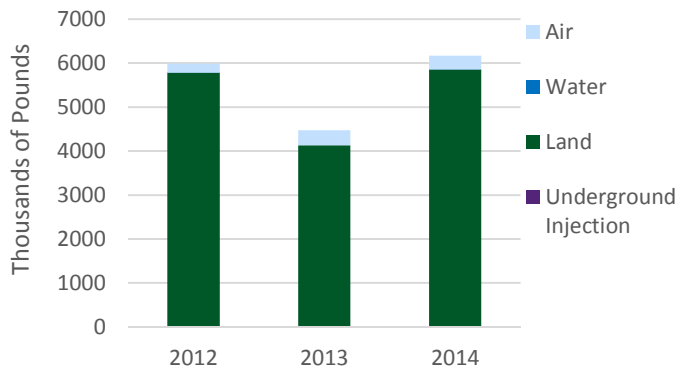
INDUSTRIAL DISCHARGE AND RELEASE FACT SHEET: ARIZONA - SONORA BORDER REGION

Total On-site Releases by Environmental Media

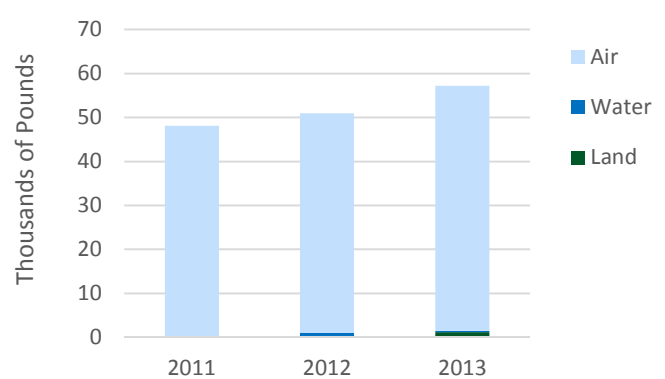
The following charts represent releases of chemicals to the environment reported to the TRI and RETC, respectively, in the Border Region. A “release” of a chemical means that it is emitted to the air, discharged to water, placed in some type of land disposal, or trans-

ferred off-site for disposal or release. Note that releases to underground injection are not subject to RETC reporting. Also, greenhouse gases are not subject to TRI reporting and are not included in this fact sheet.

**Total On-site Releases
Arizona Border Region
TRI (2012 – 2014)**



**Total On-site Releases
Sonora Border Region
RETC (2011 – 2013)**



Hazard, Risk and Toxicity

The TRI and RETC provide data about environmental releases of toxic chemicals from industrial facilities measured by weight. Weight (e.g., pounds or kilograms) of releases, however, is not an indicator of any health risks posed by the chemicals. The human health risks resulting from exposure to toxic chemicals are determined by many factors, as shown in the figure below.

The *hazard* of a toxic chemical is its ability to cause an increased incidence of adverse health effects (e.g., cancer, birth defects). *Toxicity* is a way to measure the hazard of a chemical. The *risk* of a toxic chemical is the chance of adverse health effects occurring as a result of exposure to the chemical. Risk is a function of hazard and exposure.

This fact sheet uses “toxicity weights,” a screening-level tool developed by the U.S. EPA Risk-Screening Environmental Indicators (RSEI) Program, to rank facilities reporting the largest pollutant releases (page 4) and pollutants by media (page 5). Hazard score calculations consist of pounds released multiplied by a specific chemical’s toxicity weight, which is a weight proportional to a chemical’s toxicity.

Hazard scores are not a measure of risk. The assessment of risk typically requires site-specific information, more refined exposure information, and detailed population distributions. The data shown here are intended to provide a starting point to evaluate exposure and the potential risks that reported chemicals pose to human health and the environment.

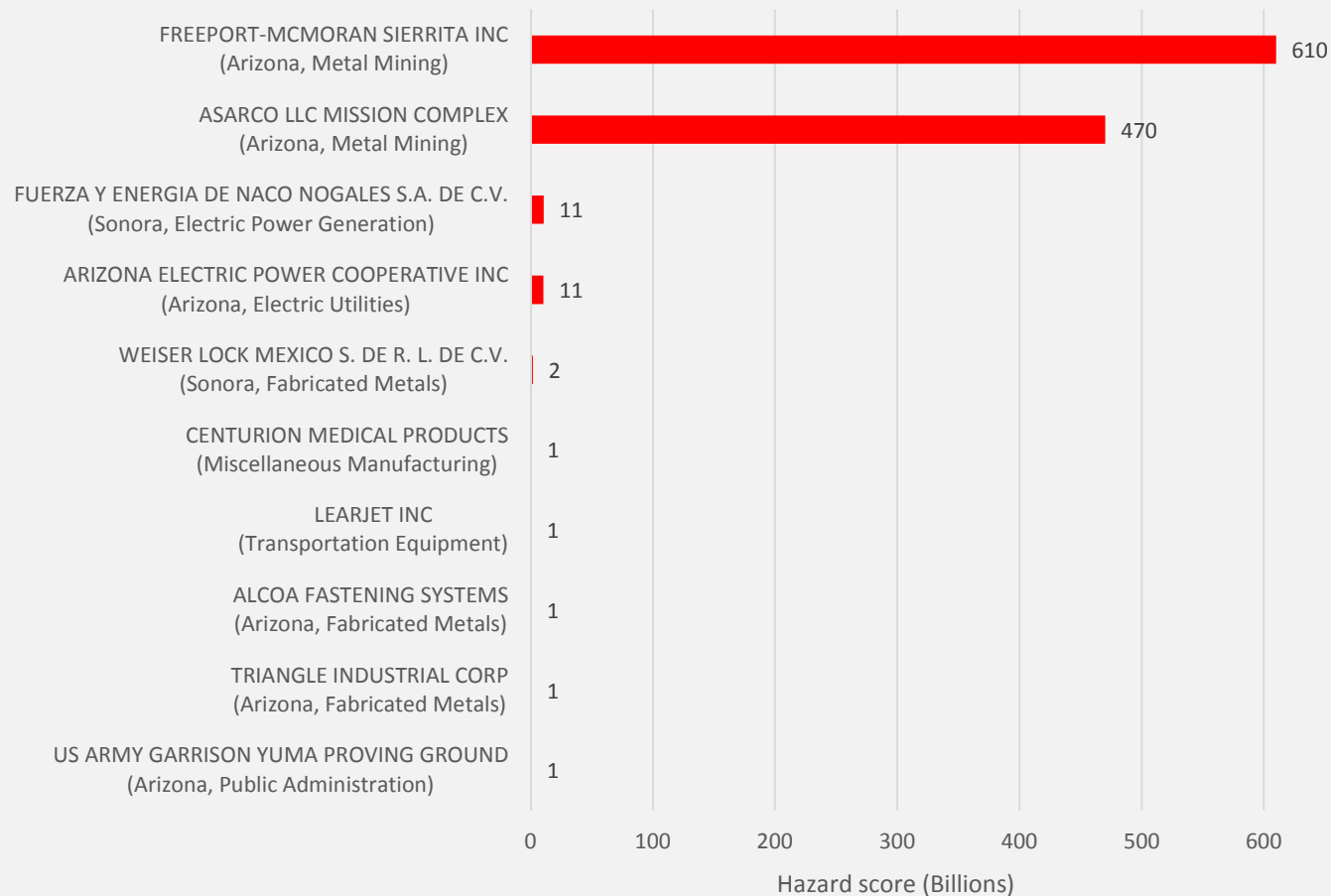


Facilities Reporting the Largest Pollutant Releases

Top Ten Facilities with Chemical Releases to Air, Water, Land, or Off-Site Disposal or Other Releases Ranked by Hazard Score

Arizona - Sonora Border Region

Last 3 Reporting Years: TRI (2012 – 2014) AND RETC (2011 – 2013)



Pollutants by Media

The pie charts on the following page illustrate the top pollutants released to air, water, and land, ranked by hazard score (unitless). Heavy metals (especially arsenic and chromium) in all media (related mainly to metal mining) and formaldehyde in air (related to electric power generation) are the most significant chemical releases. Chromium and lead were the most significant chemical releases in off-site release / disposal (not shown).

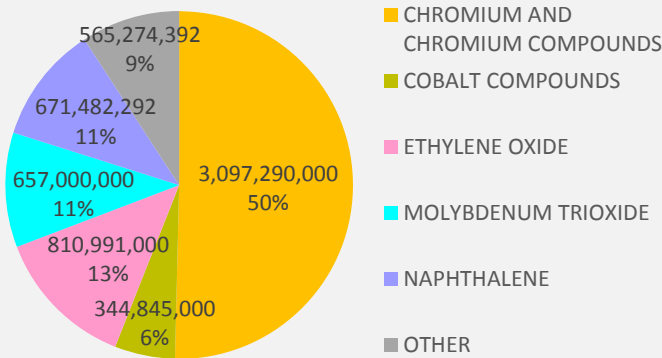
Further information for individual chemicals, including exposure-related health effects, is available at:

Agency for Toxic Substances and Disease Registry
(ASTDR) ToxFAQs
<http://www.atsdr.cdc.gov/toxfaqs/index.asp>

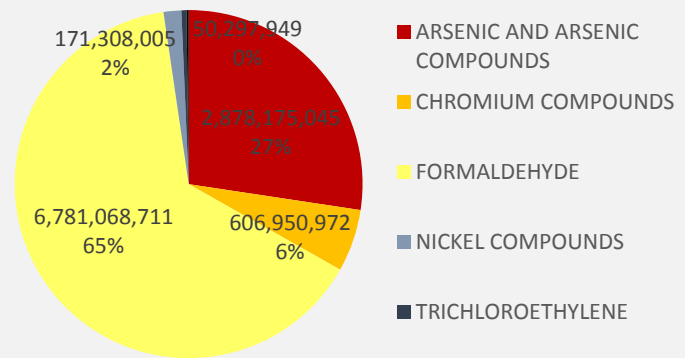
State of New Jersey Right-to-Know Hazardous Substance
Fact Sheets
<http://web.doh.state.nj.us/rtkhsfs/indexfs.aspx>

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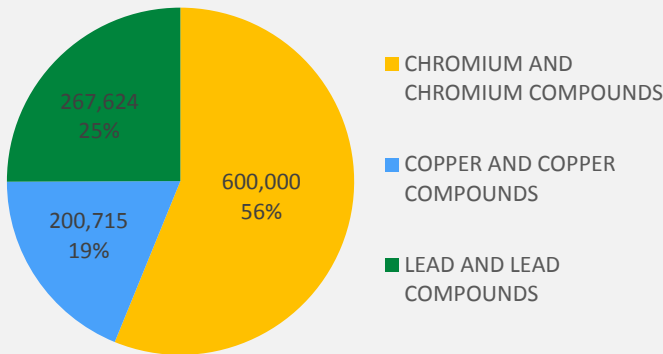
**Chemical Releases to Air Ranked by Hazard Score
Arizona Border Region
TRI (2012 – 2014; pounds)**



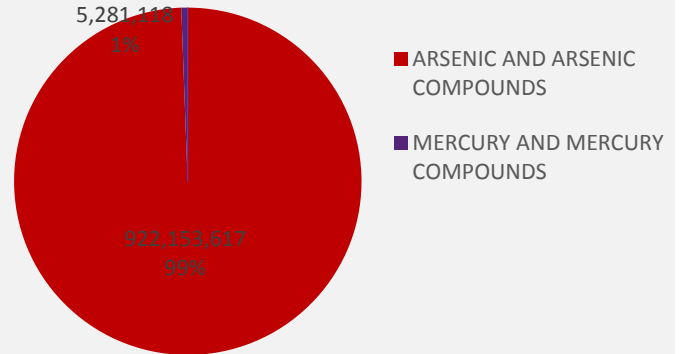
**Chemical Releases to Air Ranked by Hazard Score
Sonora Border Region
RETC (2011 – 2013; pounds)**



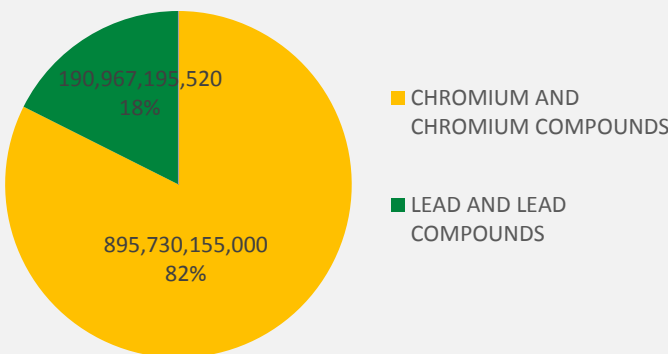
**Chemical Releases to Water Ranked by Hazard Score
Arizona Border Region
TRI (2012 – 2014; pounds)**



**Chemical Releases to Water Ranked by Hazard Score
Sonora Border Region
RETC (2011 – 2013; pounds)**



**Chemical Releases to Land Ranked by Hazard Score
Arizona Border Region
TRI (2012 – 2014; pounds)**



**Chemical Releases to Land Ranked by Hazard Score
Sonora Border Region
RETC (2011 – 2013; pounds)**

