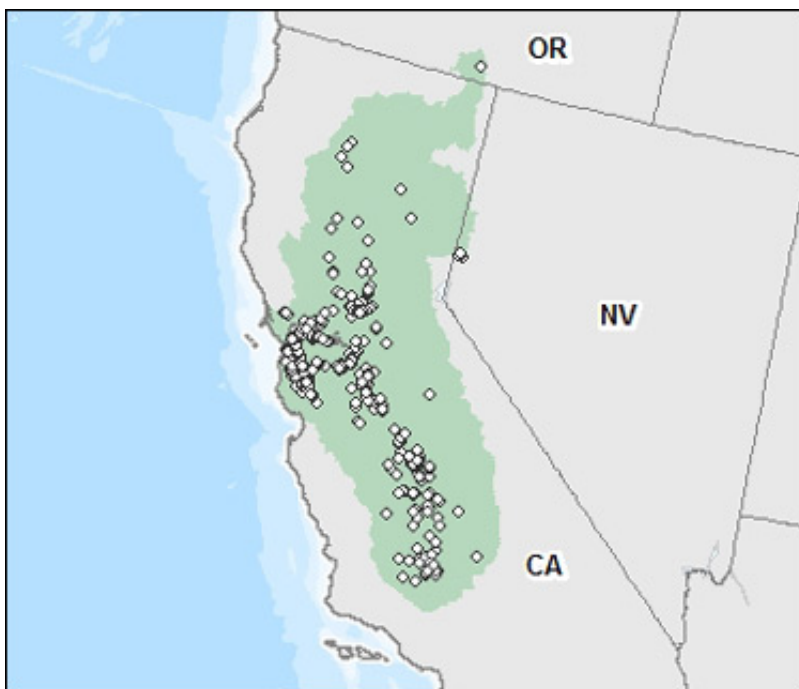




Toxics Release Inventory (TRI) Program

2011 TRI National Analysis: Large Aquatic Ecosystems - San Francisco Bay Delta Estuary



TRI facilities in San Francisco Bay Delta Estuary

Quick Facts for 2011

Number of TRI Facilities:	437
Total On-site and Off-site Disposal or Other Releases:	20.6 million lbs
Total On-site:	18.9 million lbs
• Air:	3.6 million lbs
• Water:	1.3 million lbs
• Land:	14.0 million lbs
• Underground Injection:	9 thousand lbs
Total Off-site:	1.7 million lbs

[View definitions of TRI terms](#)

The San Francisco Bay Delta Estuary is the largest estuary on the west coast of the United States. The estuary provides critical habitat for a wide variety of birds, fish, and other wildlife. It is also vital to the region's economy, including sport and commercial fisheries, agriculture, transportation, and recreation. The large aquatic ecosystem (LAE) profiled here includes the San Francisco Bay Delta Estuary as well as the estuary's 60,000 square mile watershed, which covers about 40% of California.

Disposal or other releases of toxic chemicals into this LAE is just one of a number of issues threatening the estuary's health. Roughly half of the water that falls as rain or snow within the watershed is diverted for use by farms, factories, or households. Draining wetlands for agriculture and urban development in and around the estuary has resulted in the destruction of 80% of the estuary's marshes.

The toxic chemicals found in the estuarine environment come from a variety of sources, including runoff from cities, farms and historic mining areas, atmospheric deposition within the watershed, and discharges from industrial facilities and municipal wastewater treatment plants. Contaminated bottom sediments, along with wastewater discharges and other waste releases and disposal in the watershed, result in elevated contaminant levels in fish, shellfish and other organisms. Toxic chemicals of particular concern in the estuary include copper, mercury, selenium, pesticides, and PCBs.

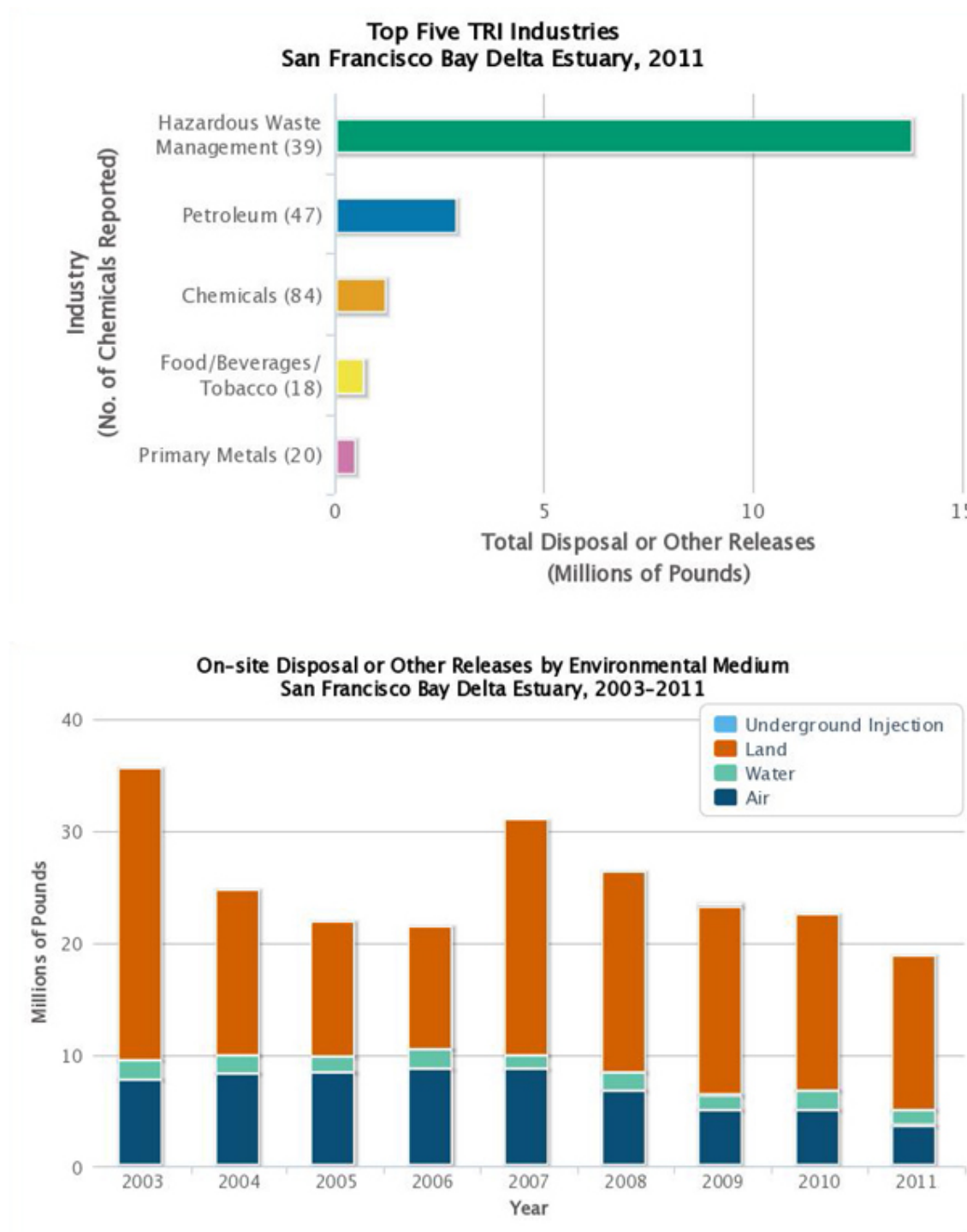
Several large hazardous waste management facilities accounted for the largest quantities of toxic chemicals disposed of or otherwise released to the land although these facilities are located at some distance from the estuary and do not discharge into the estuary. These facilities are disposing of these wastes into RCRA Subtitle C landfills, which must follow very stringent guidelines for their design and operation to avoid chemical releases from the landfills. Hazardous waste management facilities had the largest on-site land disposal in 2011, mainly asbestos, methyl tert-butyl ether, and copper and its compounds. On-site land disposal or other releases in the region decreased by 47% from 2003 to 2011, including a decrease of 12% from 2010 to 2011.

The largest water discharges in 2011 were nitrate compounds, primarily from a few large petroleum refineries. Surface water discharges decreased from 2003 to 2011 by 28%, including a decrease of 26% from 2010 to 2011. The largest air releases were of ammonia; the sources for these are a number of large petroleum refineries and chemical plants operating within the region. Air releases decreased by 53% from 2003 to 2011, including a 27% decrease from 2010 to 2011.

Underground injection decreased by 71% from 2003 to 2011, including a 91% decrease from 2010 to 2011. The reduction from 2010 to 2011 was largely due to one food processor implementing source reduction through raw material substitution and other process changes as well as sending waste to a municipal sewage treatment plant rather than its on-site underground injection well.

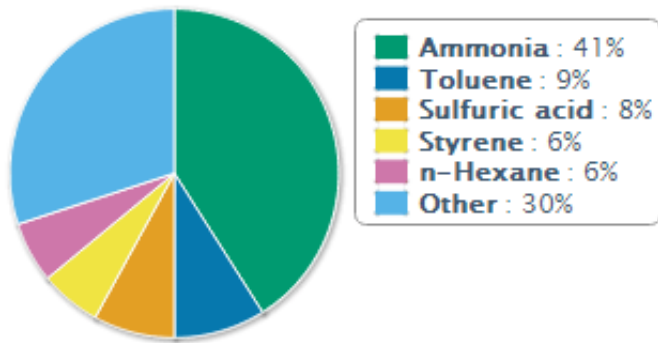
EPA works in partnership with state and local public and private institutions to conduct research and assess the effectiveness of water quality programs in the regions. To learn more about ongoing efforts to protect the San Francisco Bay Delta Estuary, visit:

TRI National Analysis Geo-Specific Tables (Excel files)

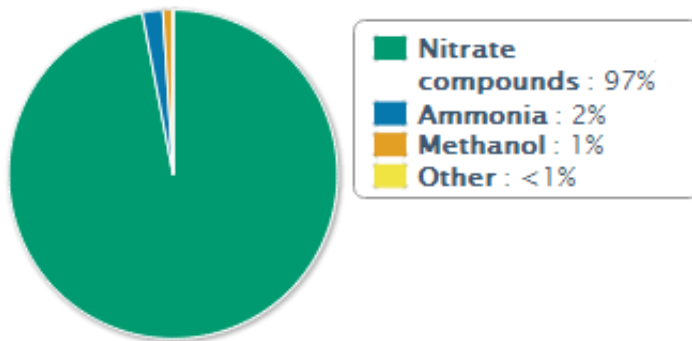


Top Five Chemicals by Environmental Medium San Francisco Bay Delta Estuary, 2011

Air
3.6 million pounds

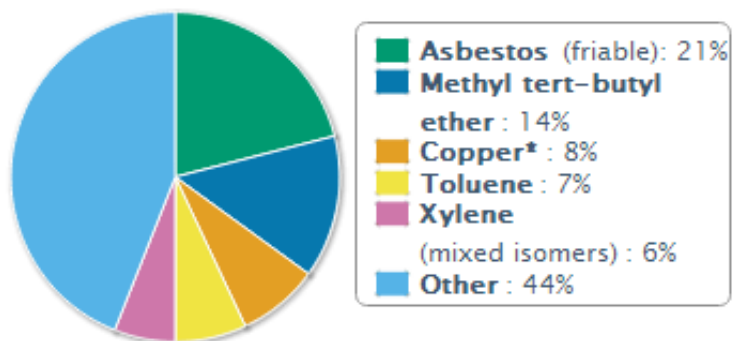


Water
1.3 million pounds



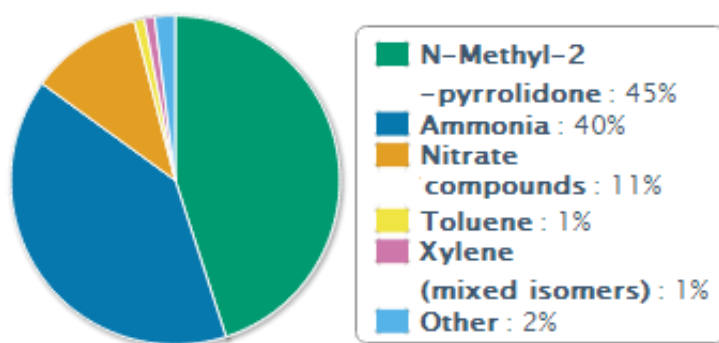
* and its compounds

Land
14.0 million pounds



* and its compounds

Underground Injection
9 thousand pounds



These charts represent the top five TRI chemicals in pounds released for this LAE, and they include neither all chemicals of concern nor the priority or importance of those chemicals within the LAE. For more specific information, please visit the [LAE website](#).

Note: This page was published in January of 2013 and uses the TRI National Analysis dataset made public in [TRI Explorer](#) in November 2012.