



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

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San Diego Hazardous Material Commodity Flow Study Fact Sheet

Chemical Emergency Prevention and Preparedness Office
US EPA Region 9, San Francisco, California

In June 2001, the United States Environmental Protection Agency, Region 9, issued the final report on a hazardous material commodity flow study of the San Diego, California area. A commodity flow study is an analysis of the goods that are moving through a particular area. In March, the study was presented to the California Border Emergency Planning and Response Task Force. The study describes the identity and quantity of hazardous materials traveling through San Diego, and provides recommendations for reducing risks that these materials pose to the community. The study identifies the nature, quantities and routes of hazardous substances transported in or near San Diego, including exports to and imports from Mexico.

Purpose of the study. USEPA conducted this study to create a useful reference document for hazardous material emergency planning, prevention and response efforts at the US/Mexico border. A better understanding of the chemical safety risks posed by transportation in San Diego will enable federal, state and local officials to make more informed decisions on the allocation of resources and the management of hazardous substances in the community.

The cities of San Diego, California, and Tijuana, Baja California, are one of the six Sister City pairs designated for contingency planning and emergency response assistance under USEPA Region 9's US/Mexico Program.

Data sources. Commodities are tracked as imports and exports through two federal agencies, U.S. Customs Service (imports) and U.S. Bureau of Census (exports). Import and export information is available by type of commodity, mode of transportation, port of entry/exit, volume, shipment weight, and value. Hazardous waste import quantities are available through the Haztraks database. Haztraks was created jointly by the USEPA and the Mexican Environmental Ministry to track the movement of hazardous waste between the U.S. and Mexico.

Traffic data included daily truck counts at key local intersections provided by the California Department of Transportation. The study also considered data from the U.S. Department of Transportation, Bureau of Transportation Statistics. Geographic and environmental data came from San Diego city and county publications, a visit to the city by study personnel, and interviews with local authorities.

Key results. Tables 1-5 below show the annual number of trucks and railcars carrying hazardous materials through San Diego, divided between imports and exports and the ports of entry (Otay Mesa, Tecate and San Ysidro). According to the data, no hazardous materials were imported through San Ysidro (the only rail link) in 1998 or 1999. Hazardous material exports through San Diego are significantly more numerous than hazardous material imports, measured by the number of trucks. This is because exports are often raw materials or partial products intended for the maquiladoras or production plants, in Tijuana. Finished goods returning to the US dominate imports. Finished goods are less likely to be hazardous than the raw materials used in production.

Exports may pose a greater risk to the San Diego area than imports for other reasons. Materials to be exported tend to remain in the region longer than imports. Imports cross the border and proceed immediately north on Interstates 5, 15 and 805 or east on Interstate 8 to their final destination, simply passing through San Diego. In contrast, exports often remain in San Diego warehouses or parking lots for consolidation or export clearance. This extended time in the region increases the risk of an incident occurring locally.

The traffic network in the region was analyzed in order to identify problem areas or hot spots. The areas of most concern are the intersections along the interstates most traveled by trucks. The top two intersections are I-8 with I-5, and I-805 with I-15. These intersections are located within densely populated areas of San Diego.

The most sensitive parts of the environment in the San Diego region are the local water resources. Many waterways in San Diego drain into the harbor and Pacific Ocean. Up to 20 percent of the drinking water supply is from local sources captured in local reservoirs. For example, the Upper Otay Reservoir and the Lower Otay Reservoir cover over 1,000 surface acres when full. Located between the Tecate and Otay Mesa ports, they are two of the reservoirs for the City of San Diego's municipal water supply system.

Possible actions. Many communities have improved the safety of their residents by placing restrictions on truck traffic carrying hazardous materials, and by enacting zoning measures to prevent the storage and shipment of hazardous materials in sensitive or high risk areas. The San Diego region has few options to affect the current movement of hazardous materials through residential areas in the city. Hazardous material traffic flows on major interstates. Essentially all of the interstates travel directly through densely populated areas of San Diego. There are no real alternatives to these routes. Restricting hazardous material traffic on the interstates would effectively transfer the trucks onto local surface roads, which would increase the risk of a spill. Awareness of the nature of hazardous material flows, and the nature and location of spills, will assist emergency preparedness by San Diego County's existing Hazardous Materials Incident Response Team and other local authorities.

Table 1 - Truck Imports by Commodity Description for Otay Mesa in 1998 and 1999

Description	1998 Annual # of Trucks	1999 Annual # of Trucks
Inorganic chemicals	2,429	1,771
Organic surface-active agents	1,351	1,104
Miscellaneous chemical products	70	126
Paints	57	61
Explosives	66	43
Ores, slag, and ash	2	6
Fertilizers	0	2
Mineral fuels	2	1
Organic chemicals	0	0
Photographic or cinematographic goods	0	0
TOTALS	3,976	3,113

Table 2 - Truck Imports by Commodity Description for Tecate in 1998 and 1999

Description	1998 Annual # of Trucks	1999 Annual # of Trucks
Explosives	2	180
Ores, slag, and ash	0	0
Organic surface-active agents	0	0
TOTALS	2	180

[No hazardous materials were imported through San Ysidro in 1998 or 1999.]

Table 3 - Truck Exports by Commodity Description for Otay Mesa in 1998 and 1999

Description	1998 Annual # of Trucks	1999 Annual # of Trucks
Petroleum, petroleum products and related materials	8,764	7,907
Gas, natural and manufactured	4,933	5,836
Plastics in primary forms	3,058	3,958
Inorganic chemicals	492	732
Crude minerals (excluding coal and petroleum)	412	567
Fertilizers	487	551
Organic chemicals	288	268
Chemical preparations for photographic uses	175	238
Chemical materials and products	119	196
Dyeing, tanning and coloring materials	132	172
Perfume materials, polishing and cleansing preparations	19	30
Ash and residues containing metals and metallic compounds	6	11
Coal, coke and briquettes	0	2
TOTALS	18,885	20,468

Table 4 - Truck Exports by Commodity Description for Tecate in 1998 and 1999

Description	1998 Annual # of Trucks	1999 Annual # of Trucks
Petroleum, petroleum products and related materials	760	308
Plastics in primary forms	78	89
Dyeing, tanning and coloring materials	53	40
Inorganic chemicals	30	40
Fertilizers	17	21
Organic chemicals	9	16
Coal, coke and briquettes	0	13
Chemical materials and products	9	9
Perfume materials, polishing and cleansing preparations	2	3
TOTALS	958	538

Table 5 - Rail Exports by Commodity Description for San Ysidro in 1998 and 1999

Description	1998 Annual # of Railcars	1999 Annual # of Railcars
Plastics in primary forms	557	225
Chemical materials and products	19	47
Petroleum, petroleum products and related materials	69	16
Inorganic chemicals	25	15
Organic chemicals	20	13
Gas, natural and manufactured	10	11
Dyeing, tanning and coloring materials	5	3
Ash and residues containing metals and metallic compounds	3	3
Perfume materials, polishing and cleansing preparations	0	1
Fertilizers	1	0
Chemical preparations for photographic uses	0	0
Crude minerals (excluding coal and petroleum)	5	0
TOTALS	715	334

For more information about chemical safety and US EPA's US/Mexico Border Program, please consult the following:

1. <http://www.epa.gov/usmexicoborder/ef.htm>
2. <http://www.epa.gov/swercepp/ip-bopr.htm#mexico>
3. USEPA Region 9 San Diego Border Office: Tel 619.235.4765
4. USEPA Region 9 Chemical Emergency Prevention & Preparedness Office:
Tel 415.744.2405.