



# **Oil Spills in U.S. Navigable Waters**

(1997-2006)

# About This Report

Oil spills covered in this report are those related to U.S. navigable waters alone. This report, based on data compiled by the U.S. Coast Guard, discusses oil spills occurring in – or reaching – navigable waters under U.S. jurisdiction, including bays, harbors, rivers, lakes, sounds, and oceans up to 200 miles from shore. See Appendix for classifications of vessels, facilities, and other.

The following are the number of pollution incidents still open for the following years:

CY 2002	31
CY 2003	60
CY 2004	70
CY 2005	122
CY 2006	176
CY 2007	3,700
CY 2008	3,604

It is important to keep these numbers in mind when looking at spill trends. Open incidents are not included in the pollution database and therefore, are not counted in this report. As of June 12, 2009 only 270 2007 incidents were closed. Analysis of 2007 spills will not be included in this report.

## Oil Spills in U.S. Navigable Waters

Every day, a network of tanker ships, pipelines, and trucks safely delivers millions of gallons of oil and natural gas to fuel the American economy. New technologies and better training yield continual improvements as we strive to conserve valuable energy resources and protect our Nation's health and environment through spill prevention. And, when spills occur, the United States enjoys world-leading preparedness planning and response capabilities to minimize environmental harm.

Legislative and regulatory actions provide a foundation for effective response and mitigation. For example, Congress passed the Oil Pollution Act of 1990 (OPA 90) to further refine and enhance U.S. spill prevention and response capabilities. Since passage of OPA 90:

- Federal agencies have issued 41 new rules regarding pollution prevention, preparedness and response.
- By 2015, all tankers and barges operating in U.S. waters will feature double hulls. This design protects oil cargo, contained within the inner hull, in the event of a breach in the outer hull.

## Interpreting Incidents and Trends in Spill Data

Year-to-year comparisons in spill data are challenging because one or two large spills can raise the total volume of product released higher than average even for a year, even if the total number of spills was lower than average in that year. Therefore, to better illuminate trends, some data will be broken out in terms of averages for 1997–2001 and 2002–2006.

- Since 2001, the average number and volume of spills has continued to decline, with a slight increase in 2006. However, average numbers of spills less than 10 gallons continue to rise and average volume of spills 100,000 gallons or more continue to account for the majority of spill volume into U.S. navigable waters.
- In 2006, barges accounted for 3 percent of the total number of spills but 37 percent of the total volume of spills (see Figure 3 and Figure 4).
- In 2006, onshore facilities accounted for 43 percent of the total volume of all spills while barges accounted for 37 percent of the total volume of all spills.
  - A waterfront facility spilled 144,018 gallons of oil waste lubricant in the Corpus Christi Bay (see Figure 4).
  - A tank barge spilled 220,000 gallons of asphalt in the Ohio River.
  - A tank barge spilled 49,110 gallons of gasoline in the New Haven Harbor.
- In 2006, Other, all other vessels<sup>1</sup> accounted for the highest number of all spills at 33 percent while offshore facilities accounted for the second highest number of all spills at 32 percent (see Figure 3).
- In 2005, an unknown facility source spilled 110,000 gallons of crude oil into the Kentucky River.
- In 2004, there was a 2,094 percentage increase in the volume of spills of 100,000 gallons or more from the previous year. Separate incidents accounted for this sharp increase:
  - A barge spilled 151,200 gallons of naphtha oil in the Houston Ship Channel.
  - A tanker spilled 263,371 gallons of crude oil in the Delaware River.
  - A tanker spilled 219,555 gallons of other oil in the Atlantic Ocean.
  - A freighter spilled 321,052 gallons of fuel oil in the Bering Sea.
  - An onshore facility spilled 1,302,000 gallons of unknown material (oil-like) in the Philippine Sea.

---

1 Please refer to definitions for classification of Other, all other vessels.

Figure 1  
**Average Amount Spilled in U.S. Navigable Waters**

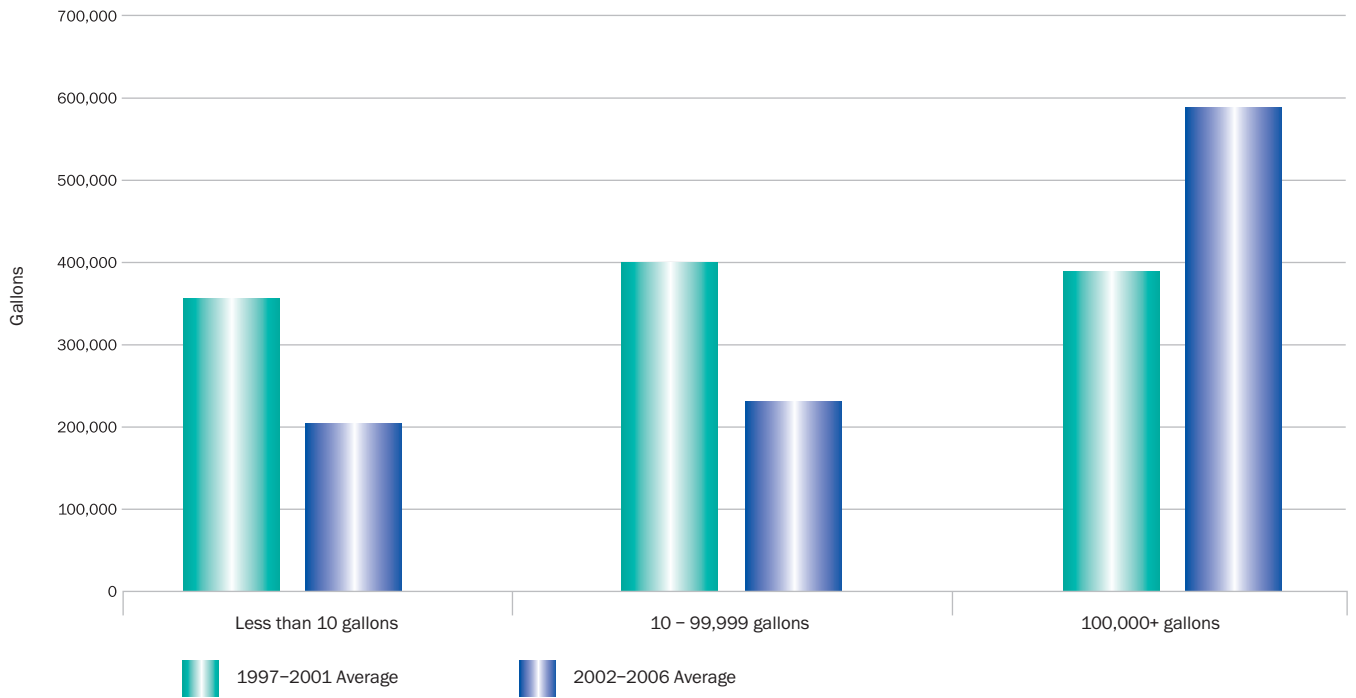


Figure 2  
**Average Number of Spills in U.S. Navigable Waters**

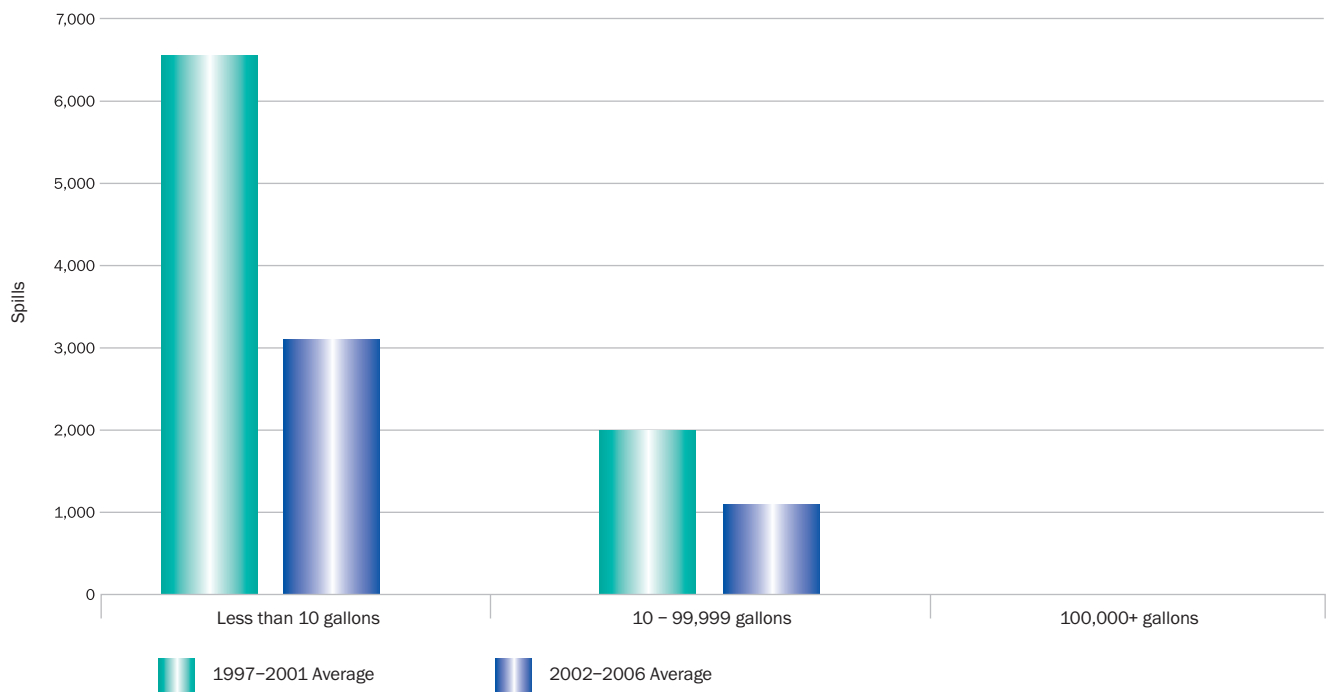


Figure 3

**Number of Spills in U.S. Navigable Waters by Source: 2006**

Total number of spills: 4,236

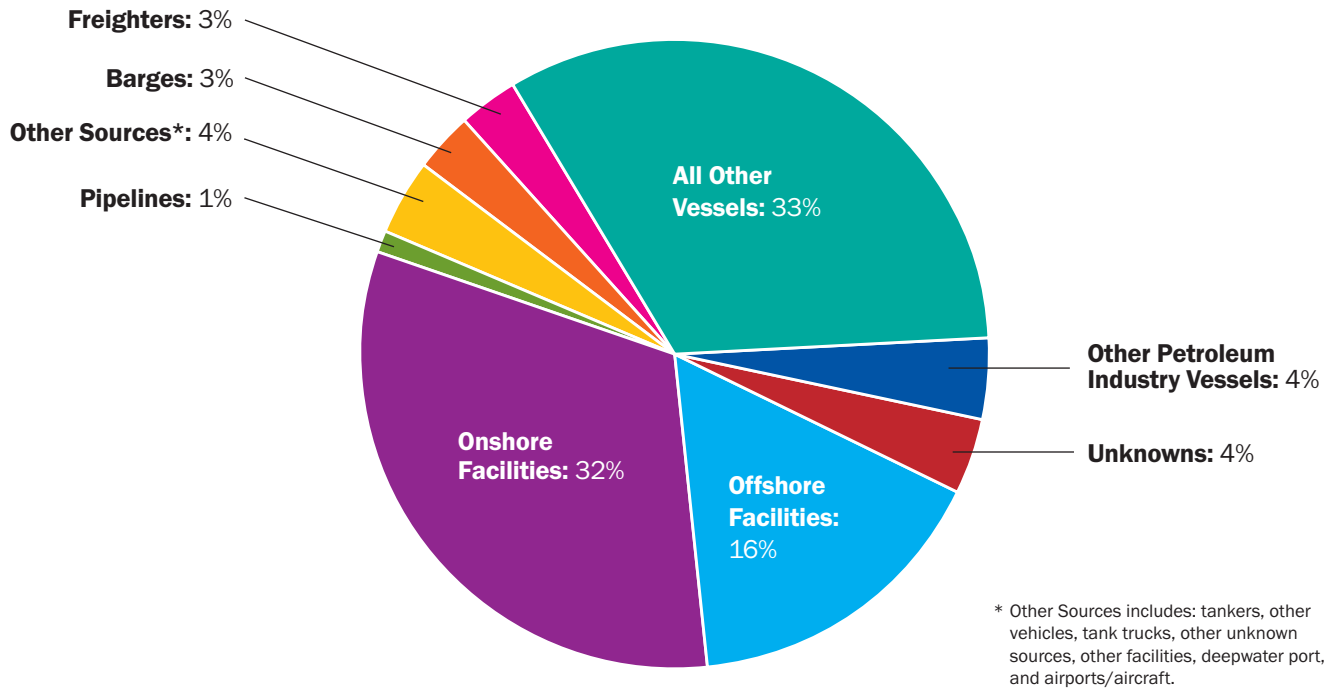
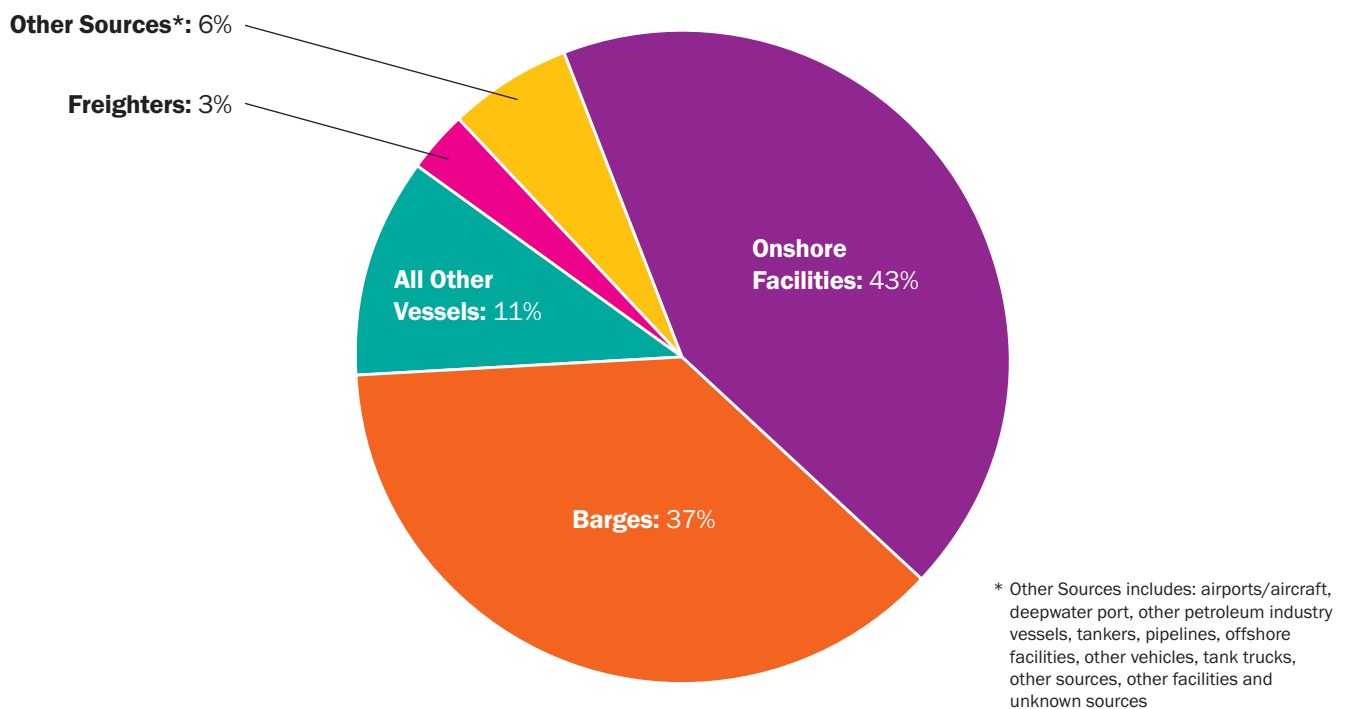


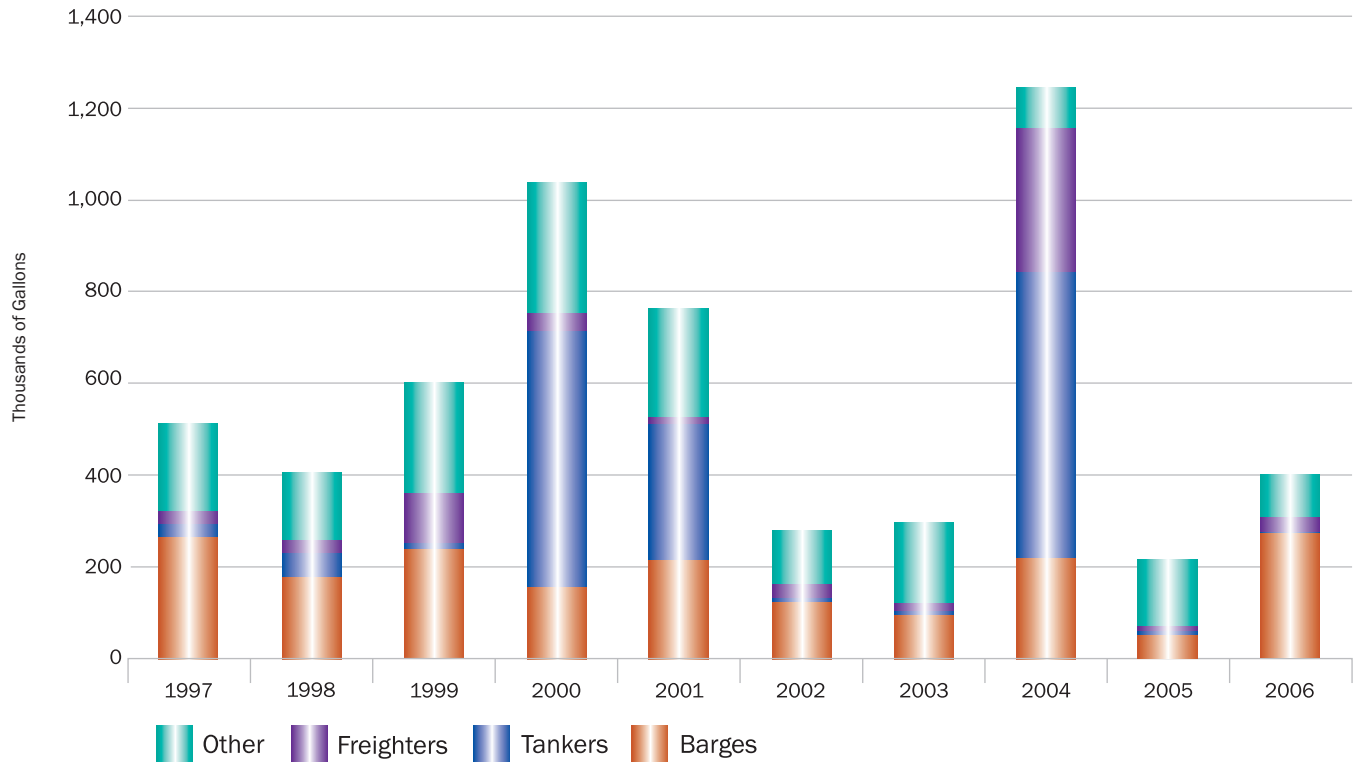
Figure 4

**Volume of Spills in U.S. Navigable Waters by Source: 2006**

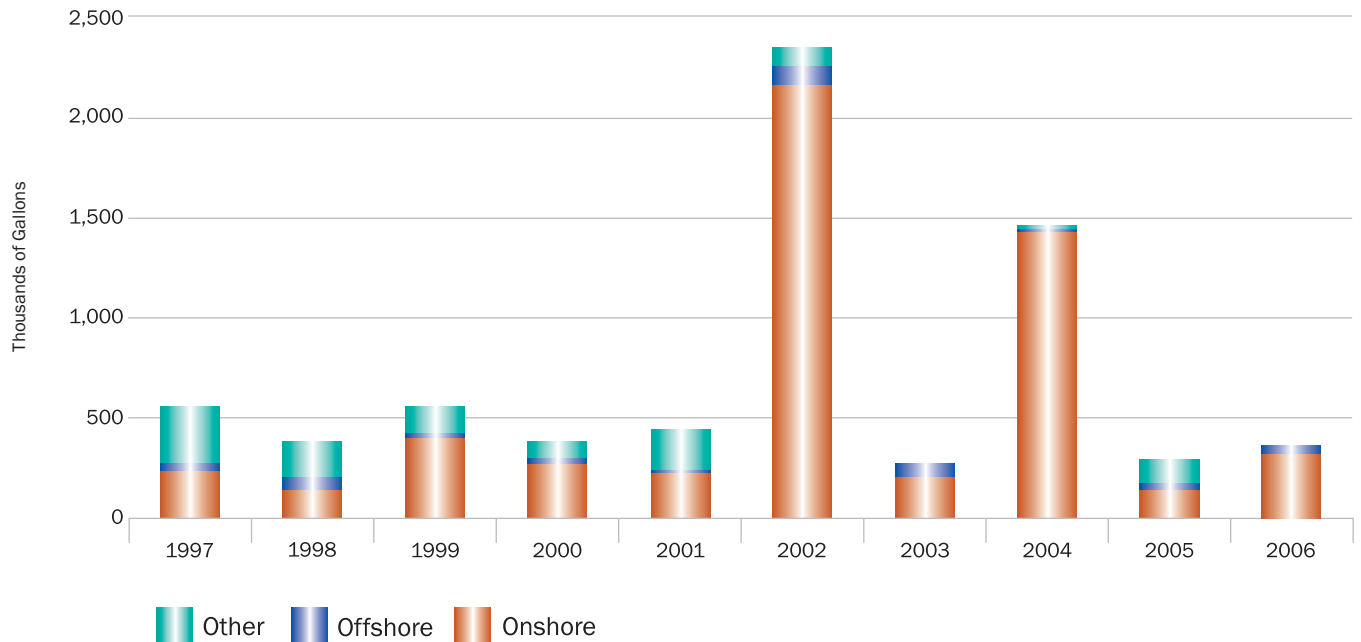
Total amount spilled: 748,368 gallons



**Figure 5**  
**Amount Spilled in U.S. Navigable Waters by Vessels**



**Figure 6**  
**Amount Spilled in U.S. Navigable Waters by Facilities**



The last row of Tables 1 through 7 represents the percentage change between the first half and the second half of the decade covered by this report. Percentage changes are based on exact averages and, in some cases, may not agree with the rounded averages shown in the tables.

- In 2006, 71 percent of spills were less than 10 gallons. Between 1997 and 2006, over 70 percent of spills were less than 10 gallons (see Table 1).
- In 2006, the total volume of oil spilled was 748,368 gallons (see Table 2). It is important to note that the occurrence of one or two large spills – large spills are defined as spills of 10,000 or more gallons – in a given year can significantly increase the total amount spilled for that particular year.
- Between 2002 and 2006, an average of 1,027 thousand gallons of oil was spilled each year, compared with 1,139 thousand gallons spilled between 1997 and 2001, a decrease of 10 percent (see Table 2).

**Table 1:**  
**Total Number of Oil Spills by Size: 1997–2006** (in Gallons)

Year	Under 10 Gallons	10–999 Gallons	1,000–9,999 Gallons	10,000–99,999 Gallons	100,000+ Gallons	Total
1997	6,539	1,833	72	17	1	8,462
1998	6,415	1,850	77	7	2	8,351
1999	6,628	1,945	75	13	1	8,662
2000	6,407	1,817	78	10	2	8,314
2001	6,607	2,162	79	19	3	8,870
2002	3,464	1,134	53	12	1	4,664
2003	3,175	1,040	39	7	1	4,262
2004	2,854	1,031	48	7	5	3,945
2005	2,757	1,087	50	7	1	3,902
2006	3,025	1,168	33	8	2	4,236
1997–2001 Average	6,519	1,921	76	13	2	8,532
2002–2006 Average	3,055	1,092	45	8	2	4,202
% Change	-53%	-43%	-41%	-38%	11%	-51%

**Table 2:**  
**Total Volume of Oil Spills by Size: 1997–2006**  
(in Thousands of Gallons)

Year	Under 10 Gallons	10–999 Gallons	1,000–9,999 Gallons	10,000–99,999 Gallons	100,000+ Gallons	Total
1997	12.0	121.0	207.0	501.0	210.0	1,051.0
1998	12.0	123.0	231.0	124.0	310.0	800.0
1999	13.0	124.0	192.0	569.0	285.0	1,183.0
2000	12.0	127.0	219.0	370.0	713.0	1,441.0
2001	13.0	151.5	206.4	426.0	422.9	1,219.8
2002	6.2	87.8	132.5	397.2	104.9	728.5
2003	5.4	86.7	136.2	167.6	102.9	498.7
2004	4.5	78.5	104.1	251.0	2,257.2	2,695.3
2005	4.6	77.8	132.0	142.1	110.0	466.4
2006	5.0	87.3	83.1	208.9	364.0	748.4
1997–2001 Average	12	129	211	398	388	1,139
2002–2006 Average	5	84	118	233	588	1,027
% Change	-59%	-35%	-44%	-41%	51%	-10%

In 2004, spills from facilities reached an all time high when 53 percent of the total number of spills originated from facilities (see Figure 5, Table 3) and accounted for 53 percent of the total volume of spills. Approximately 98 percent of this volume came from onshore facilities. Between 1997 and 2006, vessels recorded an all time low in 2002 accounting for 11 percent of total volume of spills. However, between 1997 and 2001, an average of 64 percent of the total number of spills originated from vessels and an average of 36 percent of the spills came from facilities compared to an average of 45 percent from vessels and an average of 52 percent from facilities between 2003 and 2007. In addition, between 1997 and 2001, an average of 56 percent of the total volume of spills originated from vessels and an average of 44 percent of the total volume of spills originated from facilities compared to an average of 44 percent from vessels and an average of 55 percent from facilities between 2003 and 2007 (see Table 3).

The volume of oil spilled in 2006 went up by 60 percent from the previous year. Vessel spills increased by 93 percent, facility spills increased by 37 percent, and spills from the “Other” category decreased by 63 percent (see Table 3).

**Table 3:**  
**Total Number and Volume of Oil Spills by Source:**  
**1997–2006** (in Thousands)

Year	Number from Vessels	Number from Facilities	Number from Others*	Total Number	Volume from Vessels	Volume from Facilities	Volume from Others*	Total Volume
1997	5	3	N/A	8	483.0	568.0	N/A	1,051.0
1998	5	3	N/A	8	403.0	396.0	N/A	799.0
1999	6	3	N/A	9	599.0	583.0	N/A	1,182.0
2000	6	3	N/A	8	1,039.0	401.0	N/A	1,440.0
2001	6	3	0	9	764.0	454.9	1.0	1,219.8
2002	2	2	0	5	296.2	2,316.2	9.2	2,621.6
2003	2	2	0	4	326.8	168.6	3.3	498.7
2004	2	2	0	4	1,262.4	1,427.8	5.1	2,695.3
2005	2	2	0	4	208.6	249.6	8.2	466.4
2006	2	2	0	4	402.3	343.1	3.0	748.4
1997–2001 Average	5	3	N/A	9	658.0	481.0	N/A	1,138.0
2002–2006 Average	2	2	0	4	499.0	901.0	6.0	1,406.0
% Change	-65%	-29%		-51%	-24%	87%		24%

\*Other category was not included in the U.S. Coast Guard Database until 2001.



**Table 4:**  
**Number of Oil Spills from Vessels by Size: 1997–2006**

Year	Under 10 Gallons	10–999 Gallons	1,000–9,999 Gallons	10,000–99,999 Gallons	100,000+ Gallons	Total
1997	3,963	1,254	43	8	0	5,268
1998	3,987	1,193	39	3	1	5,223
1999	4,363	1,311	43	9	0	5,726
2000	4,306	1,212	43	9	1	5,571
2001	4,193	1,257	43	11	2	5,506
2002	1,393	618	32	4	1	2,048
2003	1,169	611	22	4	1	1,807
2004	1,170	564	26	5	4	1,769
2005	1,203	621	29	5	0	1,858
2006	1,354	655	13	5	1	2,028
1997–2001 Average	4,162	1,245	42	8	1	5,459
2002–2006 Average	1,258	614	24	5	1	1,902
% Change	-70%	-51%	-42%	-43%	+75%	-65%

On average, between 1997 and 2001, barges, freighters, and tankers accounted for 440 thousand gallons per year (70 percent of vessel spills). Between 2002 and 2006, on average, barges, freighters, and tankers accounted for 1,870 thousand gallons per year (75 percent of vessel spills). In 2003, barges, freighters, and tankers recorded an all time low accounting for 38 percent of vessel spills. In 2004 barges, freighters, and tankers recorded an all time high accounting for 93 percent of vessel spills. The majority of 2006 vessel spills came from barges which accounted for 68 percent of vessel spills (see Table 5 and Figure 5).

**Table 5:**  
**Volume of Oil Spills from Vessels by Source: 1997–2006**  
(in Thousands of Gallons)

Year	Barges	Freighters	Tankers	All Other Vessels*	Unknown Vessels	Total
1997	277.0	20.0	23.0	112.0	29.0	461.0
1998	172.0	21.0	41.0	113.0	44.0	391.0
1999	227.0	120.0	7.0	106.0	61.0	521.0
2000	126.0	33.0	602.0	215.0	42.0	1,018.0
2001	211.7	23.0	294.6	168.8	65.9	764.0
2002	124.6	27.2	4.7	134.3	5.4	296.2
2003	95.9	20.5	9.0	191.4	10.0	326.8
2004	215.3	349.2	614.8	82.1	0.9	1,262.4
2005	96.1	7.8	2.8	100.1	1.8	208.6
2006	275.3	26.0	0.9	97.5	2.6	402.3
1997–2001 Average	203	43	194	143	48	631
2002–2006 Average	161	86	126	121	4	499
% Change	-20%	+98%	-35%	-15%	-91%	-21%

\*Please refer to definitions for classification of Other, all other vessels.

**Table 6:**  
**Number of Oil Spills from Facilities by Size: 1997–2006**

Year	Under 10 Gallons	10–999 Gallons	1,000–9,999 Gallons	10,000–99,999 Gallons	100,000+ Gallons	Total
1997	2,576	579	29	9	1	3,194
1998	2,428	657	38	4	1	3,128
1999	2,265	634	32	4	1	2,936
2000	2,101	605	35	1	1	2,743
2001	2,397	899	36	8	1	3,341
2002	1,916	452	20	8	0	2,396
2003	1,904	380	17	3	0	2,304
2004	1,623	433	21	2	1	2,080
2005	1,515	434	17	2	1	1,969
2006	1,610	474	20	3	1	2,108
1997–2001 Average	2,353	675	34	5	1	3,068
2002–2006 Average	1,714	435	19	4	1	2,171
% Change	-27%	-36%	-44%	-31%	-40%	-29%

In the current five-year period (2002-2006), the year 2004 and 2006 saw the highest volume of spills from onshore facilities accounting for 98 percent and 93 percent of all facility spills respectively (see Table 7).

On June 1, 2006, an onshore facility spilled 144,018 gallons of oil (waste/lubricants) into the Corpus Christi Bay. This one incident accounted for 42 percent of all facility spills in that year.

On January 26, 2005, 110,000 gallons of crude oil was spilled into the Kentucky River by an unknown facility. This incident represented 44 percent of the total volume spilled by facilities in that year (see Figure 4 and Table 7).

Pipelines, railroads, and “other” facilities did not play a major role in oil spills between 2002 and 2006, compared to the previous five-year period. Spills from those three categories declined by almost 100 percent from the previous five-year period (1997 to 2001) (see Table 7).

Table 7:

**Volume of Oil Spills from Facilities by Source: 1997-2006**

(in Thousands of Gallons)

Year	Airports	Deepwater Ports	Offshore	Onshore	Pipelines	Railroads	Other Facilities	Other Vehicles*	Unknown	Total
1997	1.0	0.0	13.0	175.0	267.0	4.0	92.0	1.0	12.0	565.0
1998	1.0	0.0	25.0	106.0	204.0	0.0	17.0	1.0	32.0	386.0
1999	0.0	0.0	11.0	426.0	39.0	1.0	46.0	1.0	47.0	571.0
2000	2.0	0.0	11.0	256.0	99.0	0.0	14.0	1.0	8.0	391.0
2001	0.8	0.0	31.3	196.6	8.8	0.5	140.0	12.5	64.2	454.9
2002	0.1	0.0	63.3	274.2	0.1	0.0	0.0	6.2	79.0	422.9
2003	0.2	0.0	35.8	128.9	0.2	0.0	0.0	0.7	2.7	168.6
2004	0.3	0.0	10.3	1,398.9	0.0	0.1	0.0	1.7	16.4	1,427.8
2005	0.0	0.0	12.0	123.9	0.8	0.0	0.0	0.8	112.0	249.6
2006	1.0	0.0	13.6	320.8	2.0	0.0	0.0	4.6	1.1	343.1
1997-2001 Average	1.0	0.0	18.3	231.9	123.6	1.1	61.8	3.3	32.6	473.6
2002-2006 Average	0.3	0.0	27.0	449.3	0.6	0.0	0.0	2.8	42.2	522.4
% Change	-68%		+48%	+94%	-99%	-99%	-100%	-15%	+29%	+10%

\*From 2001, other vehicles includes tank trucks and passenger cars.

**Table 8:**  
**Nature of Oil Spills: 2006** (Volume in Gallons)

Material	Number from Vessels	Number from Facilities	Number from Other	Total Number	Volume from Vessels	Volume from Facilities	Volume from Other	Total Volume
Asphalt	4	7	0	11	220,044.0	153.9	0.0	220,197.9
Benzene	0	1	0	1	0.0	999.0	0.0	999.0
Bilge Slops*	87	5	1	93	581.0	52.5	6.0	639.5
Coal Tar	0	1	0	1	0.0	0.2	0.0	0.2
Crude Oil	56	554	11	621	24,814.7	36,584.4	1,157.4	62,556.5
Decahydronaphthalene	1	0	0	1	1.0	0.0	0.0	1.0
Diesel Oil	795	138	81	1,014	74,067.5	26,957.4	6,513.2	107,538.1
Distillates	0	1	0	1	0.0	86.0	0.0	86.0
Drilling Mud	29	13	0	42	15,840.0	113.5	0.0	15,953.5
Fuel Oil	248	56	23	327	9,366.0	2,167.0	1,487.5	13,020.5
Gasoline	181	80	25	286	50,870.6	9,992.0	151.6	61,014.2
Gas Oil	5	0	1	6	9.5	0.0	0.5	10.0
Hydraulic Fluid or Oil	202	105	31	338	1,132.4	255.6	156.6	1,544.6
Hydrocarbon	0	2	0	2	0.0	2.1	0.0	2.1
Isooctane	1	0	0	1	0.5	0.0	0.0	0.5
Jet Fuel	6	7	4	17	351.5	5.2	655.0	1,011.7
Kerosene	2	1	0	3	62.0	2.0	0.0	64.0
Methane	0	1	0	1	0.0	6,930.0	0.0	6,930.0
Miscellaneous Oil**	232	126	26	384	2,895.4	2,576.2	342.0	5,813.6
Naptha	2	2	0	4	5.0	4.0	0.0	9.0
Natural Gas Condensate	0	2	2	4	0.0	1.5	1.2	2.7
Other Oil†	140	155	22	317	1,729.1	146,157.5	276.1	148,162.7
Petroleum Naphtha	1	1	0	2	0.3	0.1	0.0	0.4
Unknown††	28	12	718	758	475.7	79.4	102,255.5	102,810.6
Xylenes, Ethylbenzene (10%)	0	1	0	1	0.0	0.1	0.0	0.1

\* Bilge Slops include: bilge oil, bilge waste, bilge water, bilge waste oil, bilge slop oil, etc.

\*\* Miscellaneous Oil includes: aromatic, residual, road, transformer, turbine, lubricating, motor, road, gas, mineral

† Other Oil includes: oil, waste/lubricants, clarified oil

†† Unknown includes: unknown materials, unknown material oil or oil-like

In the current five-year period, there were spills from other sources which could not be classified as either Vessels or Facilities. Spills from these sources were on average, less than 1 thousand gallons per year in number and volume, and less than 1 percent of all spills.

## Reasons for the Drop in Spills Between the Years 2003 and 2007

- There was a catastrophic failure of the main U.S. Coast Guard oil spill database (MSIS) in November 2001 which resulted in data loss. As a result, there was a transfer of data to a new database (MISLE) in December of 2001. The new database was rushed to production, with conversions from the format of the old database to the new database format.
- There was an emphasis change in the collection of data: Priority changed from **capturing** data to **investigating** data which occurs when the data is collected. In addition, only larger spills (10 percent of all spills) are investigated while smaller spills (90 percent of all spills) are not. Small spills not accounted for in the Coast Guard database could possibly raise the occurrence and volume of smaller spills.
- Notices of spills are entered into the database but are not necessarily investigated. Moreover, if spills are not investigated, they are not counted in the U.S. Coast Guard pollution database.
- The U.S. Coast Guard system is being modified as time progresses. Enforcement actions against spillers are being taken; if the spiller is known, a U.S. Coast Guard hearing officer enforces the spiller to clean up the spill and in most cases, the spiller is fined. Therefore, over time, comparability of spills is more accurate.

## Table Notes

The U.S. Coast Guard updated its 1996 database. Therefore, figures for 2001 may differ from those reported in the eighth annual edition of the *Petroleum Industry Environmental Performance Report*.

Spill volume totals may not equal the sum of their components due to independent rounding. In tables showing total volumes of spills, a value of zero represents less than 500 gallons.

## Technical Notes

While these data generally track U.S. Coast Guard data, there are some differences. For example, where API's analysis shows there has been double-counting, it has been corrected. Also, API has not counted non-petroleum spills – for example, vegetable oil spills – that the U.S. Coast Guard includes.

There was a catastrophic failure of the main U.S. Coast Guard oil spill database (MSIS) in November 2001 which resulted in data loss. As a result, there was a transfer of data to a new database (MISLE) in December of 2001.

## Definitions

**Aircraft:** Airplanes, helicopters, etc.

**Barges:** Flat-bottomed boats built with tanks for transporting petroleum.

**Freighters:** Ships that transport non-petroleum products – for example, corn.

**LOOP:** Louisiana Offshore Oil Port, a man-made port in the Gulf of Mexico.

**Natural seep:** Place where oil naturally oozes from the ground to form a pool or sheen.

**Offshore facilities:** Drilling rigs and related production facilities located seaward of the coastline and in inland bodies of water.

**Offshore vessels:** Ships that carry supplies and other materials to and from offshore facilities.

**Onshore facilities:** Structures on land that handle petroleum products, including refineries, storage tanks, marketing terminals, and drilling rigs.

**Other facilities:** Includes the following U.S. Coast Guard facility categories – artificial islands, bridges, locks, permanently moored, and not elsewhere classified.

**Other, petroleum industry vessels:** Includes vessels that regularly transport goods, supplies or equipment in support of exploration or production of offshore mineral or energy resources and drilling vessels.

**Other, all other vessels:** Ships not engaged in transporting petroleum as cargo that, nonetheless, have oil on board – for example, tugboats and fishing boats.

**Pipelines:** Series of pipes with pumps, valves, and control devices that transport crude oil or petroleum products.

**Railroads:** Railroad cars with tanks that carry petroleum products as cargo.

**Tankers:** Large marine vessels with tanks that carry liquid cargo such as crude oil and gasoline.

**Tank trucks:** Trucks with tanks that carry liquid cargo such as gasoline.

**Unknown:** Sources of spills that cannot be defined further due to missing or incomplete U.S. Coast Guard records.

**Vehicles:** Motor vehicles not engaged in transporting petroleum as cargo that, nonetheless, has oil on board.



AMERICAN PETROLEUM INSTITUTE  
**STATISTICS**

Adebukola Adefemi  
1220 L Street, NW  
Washington, DC 20005-4070  
USA

Phone: 202-682-8548  
Email: [adefemia@api.org](mailto:adefemia@api.org)

[www.api.org](http://www.api.org)

Copyright 2009 – American Petroleum Institute,  
all rights reserved. API and the API logo are either  
trademarks or registered trademarks of API in the  
United States and/or other countries.