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# 1997

## **Summary of U.S. Occupational Injuries, Illnesses, and Fatalities in the Petroleum Industry**

**As Reported to the  
American Petroleum Institute**

**Covering U.S. Petroleum and Petrochemical  
Operations of Reporting Companies for 1997**

API Publication 2376  
April 1998



One of the most significant long-term trends affecting the future vitality of the petroleum industry is the public's concerns about the environment. Recognizing this trend, API member companies have developed a positive, forward looking strategy called STEP: Strategies for Today's Environmental Partnership. This program aims to address public concerns by improving industry's environmental, health and safety performance; documenting performance improvements; and communicating them to the public. The foundation of STEP is the API Environmental Mission and Guiding Environmental Principles. API standards, by promoting the use of sound engineering and operational practices, are an important means of implementing API's STEP program.

### **API ENVIRONMENTAL MISSION AND GUIDING ENVIRONMENTAL PRINCIPLES**

The members of the American Petroleum Institute are dedicated to continuous efforts to improve the compatibility of our operations with the environment while economically developing energy resources and supplying high quality products and services to consumers. The members recognize the importance of efficiently meeting society's needs and our responsibility to work with the public, the government, and others to develop and to use natural resources in an environmentally sound manner while protecting the health and safety of our employees and the public. To meet these responsibilities, API members pledge to manage our businesses according to these principles:

- To recognize and to respond to community concerns about our raw materials, products and operations.
- To operate our plants and facilities, and to handle our raw materials and products in a manner that protects the environment, and the safety and health of our employees and the public.
- To make safety, health and environmental considerations a priority in our planning, and our development of new products and processes.
- To advise promptly appropriate officials, employees, customers and the public of information on significant industry-related safety, health and environmental hazards, and to recommend protective measures.
- To counsel customers, transporters and others in the safe use, transportation and disposal of our raw materials, products and waste materials.
- To economically develop and produce natural resources and to conserve those resources by using energy efficiently.
- To extend knowledge by conducting our supporting research on the safety, health and environmental effects of our raw materials, products, processes and waste materials.
- To commit to reduce overall emissions and waste generation.
- To work with others to resolve problems created by handling and disposal of hazardous substances from our operations.
- To participate with government and others in creating responsible laws, regulations and standards to safeguard the community, workplace and environment.
- To promote these principles and practices by sharing experiences and offering assistance to others who produce, handle, use, transport or dispose of similar raw materials, petroleum products and wastes.



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**Covering U.S. Petroleum and Petrochemical  
Operations of Reporting Companies for 1997**

**Prepared for the Health and Environmental Affairs Department  
by the Finance, Accounting and Statistics Department**

API Publication 2376  
April 1998

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Suggested revisions are invited and should be submitted to the director of the Health and Environmental Affairs Department, American Petroleum Institute, 1220 L Street, N.W., Washington, D.C. 20005.

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## REPORTED U.S. OCCUPATIONAL INJURIES, ILLNESSES, AND FATALITIES IN THE PETROLEUM INDUSTRY: 1997

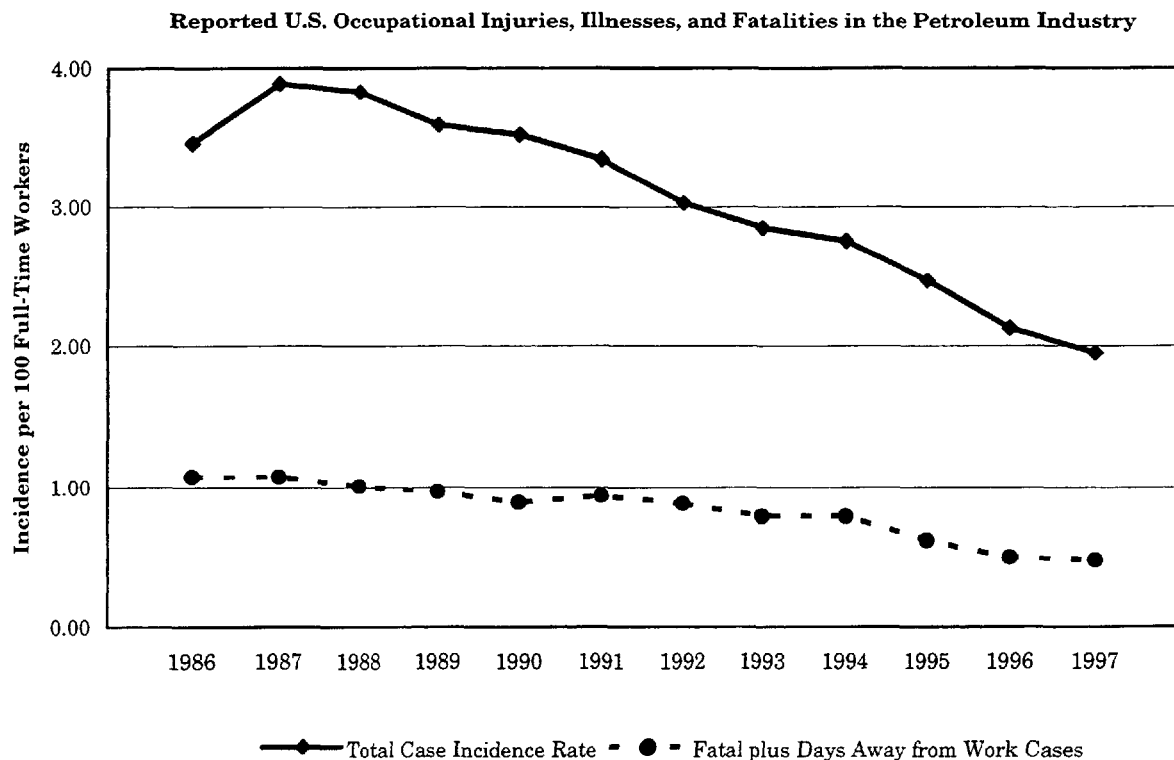
### SUMMARY

This report is an aggregate of data submitted to the American Petroleum Institute (API) by 139 oil and gas companies (including 11 subsidiaries), employing 231,332 persons with a total work experience of 470 million hours during 1997. In 1996, 140 companies reported 228,209 employees with a work experience of 463 million hours. Individual company participation varies from year to year, yet 95 companies, representing 92 percent of the number of employees and 92 percent of the number of hours worked in 1997 had responded to this survey for the past 2 years.

In 1997, the *Total Case Incidence Rate* was 1.95, compared to 2.13 for 1996. This rate is the number of total recordable cases per 200,000 hours worked, or approximately the number of cases per 100 full-time workers per year.

The *Fatal Plus Days Away From Work Incidence Rate* for 1997 was .48 per 200,000 hours worked—or one case for every 208 employees, improving slightly from .50 for 1996—or one case for every 200 employees.

Safety among reporting companies continues to improve, as shown in the figure below. Since 1986, the *Total Case Incidence Rate* and *Fatal plus Days Away from Work Incidence Rate* have improved an average of 4.9 and 6.8 percent per year, respectively.



## The Survey

Company participation in the API annual statistical survey is voluntary. Participants were asked to submit data according to the Bureau of Labor Statistics (BLS) Recordkeeping Guidelines for Occupational Injuries and Illnesses, September 1986 edition. Therefore, this report provides injury rates per 200,000 hours worked on the same basis as those reported by BLS. It should be noted, however, that this report covers *company employees* only; contract worker safety statistics are not included.

Significant differences exist among companies regarding return-to-work policies and practices, i.e., returning injured or ill employees to restricted activity if they are unable to perform normal job activities and as part of their recoveries. Therefore, use of the *Fatal plus Days Away From Work Incidence Rate* alone to judge and compare company safety performance is not recommended.

The Bureau of Labor Statistics (BLS) publishes employment figures for different sectors of the petroleum industry. The following table shows the number of full-time employees given in this API report and the comparative total employment figures published by BLS. These figures can be used to calculate the API survey representation rate.

Employment in the Petroleum Industry				
	E&P and Drilling	Refining and Gas Processing	Oil Pipelines	Total Marketing
BLS	320.1	96.8	14.3	835.4
API	41.4	47.8	11.8	60.8
API Representation Rate	13%	49%	83%	7%

*Employment figures are in thousands. 1997 BLS figures are current as of February 1998.*

Caution should be used, however, when interpreting these representation rates. As mentioned above, the API survey is limited to *company employees* while the BLS has a more inclusive definition of employment (the BLS includes contract workers).

Of the 139 companies that responded, 85 agreed to have their company data published individually. However, the total listed for each function is the total for *all* reporting companies—not just the sum of the individual companies appearing in that section of the report.

Additional copies of this report may be obtained by contacting the API Publications and Distribution Department at (202) 682-8375.

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# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Table 1 -- Company Totals (Including Offshore Activities)

1		2	3	4			5								6				
Function		Key*	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness								Incidence Rates			
					a	b	c	d	e	f	Lost Workday Cases			h	i	j	k	l	
											Injuries	Illnesses	Total						Fatalities
Exploration	a	911	1,717	3	0	3	0	1	0	0	33	2	0.35	0.00	0.00				
Production	b	13,323	28,008	191	13	204	0	107	52	1,114	1,285	97	1.46	0.37	7.95				
E&P-Not sep <sup>1</sup>	ab	26,471	55,594	344	22	366	0	155	142	2,207	537	211	1.32	0.51	7.94				
E&P Subtotal		40,705	85,319	538	35	573	0	263	194	3,321	1,855	310	1.34	0.45	7.78				
Gas Processing	c	3,788	7,797	48	1	49	0	18	6	283	99	31	1.26	0.15	7.26				
Drilling	d	743	1,487	31	1	32	0	27	23	466	24	5	4.30	3.09	62.68				
Petrochemical Mfg.	e	17,925	37,583	279	27	306	0	155	69	1,213	1,774	151	1.63	0.37	6.46				
Refining	f	44,054	94,084	1,066	80	1,146	1	558	277	5,390	8,437	587	2.44	0.59	11.46				
Marketing-Whole.	g	14,131	29,650	377	7	384	0	242	108	2,285	1,412	142	2.59	0.73	15.41				
Marketing-Retail	h	32,256	55,707	1,197	15	1,212	1	616	172	2,329	5,800	595	4.35	0.62	8.36				
Mrkt-Not sep <sup>2</sup>	gh	14,423	29,416	216	21	237	2	106	71	548	302	129	1.61	0.50	3.73				
Mrkt. Subtotal		60,810	114,773	1,790	43	1,833	3	964	351	5,162	7,514	866	3.19	0.62	9.00				
Pipeline-Liquid	i	11,777	23,659	190	11	201	1	88	63	1,264	814	112	1.70	0.54	10.69				
Pipeline-Gas	j	3,825	8,524	81	8	89	0	31	31	820	195	58	2.09	0.73	19.24				
Pipeline-Not sep <sup>3</sup>	ij	1,596	3,335	28	3	31	0	11	9	48	70	20	1.86	0.54	2.88				
Pipeline Subtotal		17,198	35,518	299	22	321	1	130	103	2,132	1,079	190	1.81	0.59	12.01				
Marine-Tanker	k	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00				
Marine-Inland	l	301	634	8	0	8	0	5	0	0	57	3	2.52	0.00	0.00				
Marine-Not sep <sup>4</sup>	kl	1,892	4,680	56	5	61	0	35	23	1,215	186	26	2.61	0.98	51.92				
Marine Subtotal		2,193	5,314	64	5	69	0	40	23	1,215	243	29	2.60	0.87	45.73				
Research & Dev.	m	6,606	13,342	40	7	47	0	12	5	69	103	35	0.70	0.07	1.03				
General Services	n	5,556	11,129	37	21	58	0	27	17	624	306	31	1.04	0.31	11.21				
Admin.,Eng., Other	o	31,754	63,855	100	43	143	0	60	46	651	175	83	0.45	0.14	2.04				
Total		231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73				

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

Table 2 -- Offshore Functions

1	2	3	4			5								6		
			Recordable Cases			Extent and Outcome of Injury and Illness								Incidence Rates		
			a	b	c	d	e	f	g	h	i	j	k	l		
						Lost Workday Cases										
Function	Key <sup>1</sup>	Average Number of Employees	Hours Worked (Thousands)	Injuries	Illnesses	Total	Fatalities	Total Lost Workday Cases*	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity*	Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
Offshore Exploration	a	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Offshore Production	b	2,165	4,635	46	3	49	0	32	22	645	281	17	2.11	0.95	27.83	
Offshore Drilling	d	254	534	0	1	1	0	0	0	0	0	1	0.37	0.00	0.00	
Combinations of Above- Not sep <sup>6</sup>	abd	3,690	7,646	80	1	81	0	58	45	349	79	23	2.12	1.18	9.13	
Total Offshore		6,109	12,815	126	5	131	0	90	67	994	360	41	2.04	1.05	15.51	

## Incidence Rate Formulas

$$\text{Column 6(j)} = \frac{\text{Column 4(c)} \times 200}{\text{Column 3}}$$

$$\text{Column 6(k)} = \frac{(\text{Column 5(d)} + \text{Column 5(f)}) \times 200}{\text{Column 3}}$$

$$\text{Column 6(l)} = \frac{\text{Column 5(g)} \times 200}{\text{Column 3}}$$

## Endnotes

- <sup>1</sup> E&P data unable to be separated into Exploration or Production functions.
- <sup>2</sup> Marketing data unable to be separated into Wholesale or Retail functions.
- <sup>3</sup> Pipeline data unable to be separated into Liquid or Gas functions.
- <sup>4</sup> Marine data unable to be separated into Tanker or Inland.
- <sup>5</sup> Keyed to definitions outlined in the API Fire and Safety Data Systems User's Manual.
- <sup>6</sup> If functions cannot be separated as listed, indicate in the 'Key' column the functions for which data is provided on this line. For example, 'ab' (Exploration & Production - Not Separated).
- <sup>7</sup> Includes restricted activity.

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

a - Exploration  
 b - Production  
 (ab) - Exploration & Production - Not Sep.  
 c - Gas Processing  
 d - Drilling  
 e - Petrochemical Manufacturing  
 f - Refining  
 g - Marketing - Wholesale  
 h - Marketing - Retail  
 (gh) - Marketing - Not Sep.  
 i - Pipeline - Liquid  
 j - Pipeline - Gas  
 (ij) - Pipeline - Not Sep.  
 k - Marine - Tanker  
 l - Marine - Inland  
 (kl) - Marine - Not Sep.  
 m - Research & Development  
 n - General Services  
 o - Admin., Engineering, & Other

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases			Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work	Total Cases	Lost Work Days - Days Away From Work	Work
						Fatalities	Total Lost Workday Cases	Involving Days Away From Work	Number of Days Away From Work	Number of Restricted Activity			

### All Functions

Total	231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73
11	2,954	5,993	56	0	56	0	27	7	200	443	29	1.87	0.23	6.67
13	26,029	44,836	1,147	21	1,168	1	633	114	2,346	7,169	534	5.21	0.51	10.46
14	9,276	20,329	111	14	125	0	35	23	434	393	90	1.23	0.23	4.27
17	600	1,305	3	0	3	0	1	1	2	0	2	0.46	0.15	0.31
19	357	743	3	0	3	0	3	3	34	0	0	0.81	0.15	9.15
24	21,730	43,222	277	59	336	2	162	152	1,366	355	172	1.55	0.71	6.32
27	1,397	3,221	15	1	16	0	12	12	269	0	4	0.99	0.75	16.70
29	652	1,353	8	0	8	0	0	0	0	0	8	1.18	0.00	0.00
31	3,529	7,894	75	5	80	0	28	28	721	118	52	2.03	0.71	18.27
32	10,468	21,768	39	0	39	0	21	3	163	317	18	0.36	0.03	1.50
33	16	32	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
38	129	277	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
41	17,003	35,323	158	29	187	0	99	30	1,144	1,380	88	1.06	0.17	6.48
43	373	856	93	15	108	0	26	26	519	208	82	25.23	6.07	121.26
57	19	36	2	0	2	0	2	2	45	0	0	11.11	11.11	250.00
58	408	838	4	0	4	0	1	1	162	0	3	0.95	0.24	38.66
60	352	700	6	1	7	0	4	2	18	61	3	2.00	0.57	5.14
65	6,855	13,069	86	6	92	0	36	3	29	676	56	1.41	0.05	0.44
74	163	336	9	0	9	0	4	3	26	106	5	5.36	1.79	15.48
90	17,231	35,854	200	11	211	1	108	49	913	836	102	1.18	0.28	5.09
91	260	506	2	0	2	0	0	0	0	0	2	0.79	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

**a - Exploration**  
**b - Production**  
**(ab) - Exploration & Production - Not Sep.**  
**c - Gas Processing**  
**d - Drilling**  
**e - Petrochemical Manufacturing**  
**f - Refining**  
**g - Marketing - Wholesale**  
**h - Marketing - Retail**  
**(gh) - Marketing - Not Sep.**  
**i - Pipeline - Liquid**  
**j - Pipeline - Gas**  
**(ij) - Pipeline - Not Sep.**  
**k - Marine - Tanker**  
**l - Marine - Inland**  
**(kl) - Marine - Not Sep.**  
**m - Research & Development**  
**n - General Services**  
**o - Admin., Engineering, & Other**

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates				
			Injuries	Illnesses	Total	Lost Workday Cases					Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
						Fatalities	Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity					

### All Functions

Total	231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73
93	47	91	2	0	2	0	1	1	6	0	1	4.40	2.20	13.19
99	18,112	37,289	150	27	177	0	86	23	965	1,027	91	0.95	0.12	5.18
106	19,913	41,419	255	21	276	0	124	43	629	1,979	152	1.33	0.21	3.04
109	13,416	28,199	216	21	237	0	105	77	1,696	554	132	1.68	0.55	12.03
118	23	39	1	0	1	0	1	0	0	14	0	5.13	0.00	0.00
126	744	1,475	10	3	13	0	4	4	69	0	9	1.76	0.54	9.36
139	758	1,924	38	3	41	1	22	5	199	788	18	4.26	0.62	20.69
233	889	1,789	10	2	12	0	5	5	203	194	7	1.34	0.56	22.69
239	465	934	3	0	3	0	1	1	26	5	2	0.64	0.21	5.57
242	9	19	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
260	55	106	2	0	2	0	1	0	0	22	1	3.77	0.00	0.00
261	32	67	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10001	3,644	7,917	69	6	75	0	39	7	147	1,051	36	1.89	0.18	3.71
10014	28	56	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10015	69	138	1	0	1	0	0	0	0	0	1	1.45	0.00	0.00
10092	8	16	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10203	5	10	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10204	49	4	1	0	1	0	1	1	189	0	0	50.00	50.00	9,450.00
10403	12	28	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10420	21,007	42,388	379	8	387	0	185	96	1,602	1,847	202	1.83	0.45	7.56
10421	3,909	9,529	46	1	47	0	19	19	331	0	28	0.99	0.40	6.95

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

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 (ij) - Pipeline - Not Sep.  
 k - Marine - Tanker  
 l - Marine - Inland  
 (kl) - Marine - Not Sep.  
 m - Research & Development  
 n - General Services  
 o - Admin., Engineering, & Other

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases			Extent and Outcome of Injury and Illness				Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work Activity			

### All Functions

Total	231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73
10514	3	6	0	0	0	0	0	0	0	0	0	0.00	0.00	b,o
10532	57	85	0	0	0	0	0	0	0	0	0	0.00	0.00	i
10544	63	117	0	0	0	0	0	0	0	0	0	0.00	0.00	i
10546	99	211	4	0	4	0	2	2	3	0	2	3.79	1.90	f
10560	29	53	2	0	2	0	0	0	0	0	2	7.55	0.00	(ab),o
10570	124	249	1	0	1	0	0	0	0	0	1	0.80	0.00	i
10573	1,924	3,695	11	0	11	0	2	2	38	0	9	0.60	0.11	(ab),c,(ij),o
10575	554	1,103	20	4	24	0	12	7	72	179	12	4.35	1.27	f,i
10586	3,715	7,429	101	0	101	0	64	38	na	na	37	2.72	1.02	(ab),f,(gh)
10620	551	1,185	1	0	1	0	0	0	0	0	1	0.17	0.00	c,i,o
10621	140	270	8	0	8	0	4	2	22	84	4	5.93	1.48	i
10622	457	947	8	0	8	0	4	3	44	3	4	1.69	0.63	c,(gh),i,o
10626	1,348	3,202	34	4	38	0	26	20	194	619	12	2.37	1.25	f
10636	99	197	5	0	5	0	2	1	5	19	3	5.08	1.02	a,b,c,o
10650	45	85	4	0	4	0	1	1	2	0	3	9.41	2.35	f
10651	25	46	3	0	3	0	1	1	112	0	2	13.04	4.35	f
10652	6	13	0	0	0	0	0	0	0	0	0	0.00	0.00	i
10703	16	37	0	0	0	0	0	0	0	0	0	0.00	0.00	i
10710	160	360	6	0	6	0	4	1	2	63	2	3.33	0.56	f
10712	13	31	0	0	0	0	0	0	0	0	0	0.00	0.00	b,(ij),o
10713	466	966	3	0	3	0	3	2	6	5	0	0.62	0.41	a,(ab),b,d,(gh),(ij),j,m,o

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

a - Exploration  
 b - Production  
 (ab) - Exploration & Production - Not Sep.  
 c - Gas Processing  
 d - Drilling  
 e - Petrochemical Manufacturing  
 f - Refining  
 g - Marketing - Wholesale  
 h - Marketing - Retail  
 (gh) - Marketing - Not Sep.  
 i - Pipeline - Liquid  
 j - Pipeline - Gas  
 (ij) - Pipeline - Not Sep.  
 k - Marine - Tanker  
 l - Marine - Inland  
 (kl) - Marine - Not Sep.  
 m - Research & Development  
 n - General Services  
 o - Admin., Engineering, & Other

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work			

### All Functions

Total	231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73
10714	516	1,141	7	0	7	0	1	1	56	0	6	1.23	0.18	9.82
10716	258	557	12	1	13	0	2	2	47	58	11	4.67	0.72	16.88
20016	275	584	4	0	4	0	2	0	0	22	2	1.37	0.00	0.00
20029	405	939	51	1	52	0	21	21	508	271	31	11.08	4.47	108.20
20032	50	102	3	0	3	0	2	2	16	0	1	5.88	3.92	31.37
20037	6	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20038	1,149	2,436	27	2	29	0	4	4	66	6	25	2.38	0.33	5.42
20050	2	6	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20111	3	15	4	0	4	0	4	4	109	35	0	53.33	53.33	1,453.33
20124	140	275	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
30101	47	105	1	0	1	0	1	1	9	10	0	1.90	1.90	17.14
30103	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
30111	184	405	14	1	15	0	8	8	204	105	7	7.41	3.95	100.74
90001	125	310	4	0	4	0	0	0	0	0	4	2.58	0	0
90013	134	293	6	0	6	0	1	1	62	0	5	4.10	0.68	42.32
90024	647	1245	6	3	9	0	4	2	8	70	5	1.45	0.32	1.29
90065	438	789	4	0	4	0	1	0	0	3	3	1.01	0.00	0.00
90099	704	1396	3	0	3	0	1	1	2	0	2	0.43	0.14	0.29
90106	913	1899	7	1	8	0	2	2	76	0	6	0.84	0.21	8.00
90421	53	156	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
93421	30	67	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

a - Exploration  
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 (ab) - Exploration & Production - Not Sep.  
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 (ij) - Pipeline - Not Sep.  
 k - Marine - Tanker  
 l - Marine - Inland  
 (kl) - Marine - Not Sep.  
 m - Research & Development  
 n - General Services  
 o - Admin., Engineering, & Other

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases		Extent and Outcome of Injury and Illness				Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work			
								Number of Days of Restricted Activity	Non-Fatal Cases Without Lost Workdays		

## All Functions

Total	231,332	470,201	4,292	285	4,577	5	2,254	1,114	20,526	21,609	2,318	1.95	0.48	8.73
99421	23	50	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity			

## Exploration

<i>Total</i>	911	1,717	3	0	3	0	1	0	0	33	2	0.35	0.00	0.00
14	195	394	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
58	89	186	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
65	295	531	3	0	3	0	1	0	0	33	2	1.13	0.00	0.00
99	84	112	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10203	5	10	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10636	4	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	36	74	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00



# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
						Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity				

### Production

Total	13,323	28,008	191	13	204	0	107	52	1,114	1,285	97	1.46	0.37	7.95
13	253	351	6	0	6	0	5	5	51	0	1	3.42	2.85	29.06
14	236	484	4	0	4	0	1	1	6	45	3	1.65	0.41	2.48
41	2,901	6,398	29	3	32	0	20	3	87	542	12	1.00	0.09	2.72
58	319	652	4	0	4	0	1	1	162	0	3	1.23	0.31	49.69
65	1,701	3,316	14	0	14	0	7	2	13	231	7	0.84	0.12	0.78
99	2,686	6,029	19	4	23	0	18	9	57	27	5	0.76	0.30	1.89
109	3,902	8,007	73	6	79	0	32	15	459	365	47	1.97	0.37	11.47
10092	4	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10514	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10636	9	22	1	0	1	0	1	0	0	5	0	9.09	0.00	0.00
10712	3	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	119	247	1	0	1	0	1	1	1	0	0	0.81	0.81	0.81
20016	275	584	4	0	4	0	2	0	0	22	2	1.37	0.00	0.00
30103	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates				
			Injuries	Illnesses	Total	Fatalities	Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity	Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
														Lost Workday Cases	

### Exploration and Production -- Not Separated

Total	26,471	55,594	344	22	366	0	155	142	2,207	537	211	1.32	0.51	7.94
11	315	691	4	0	4	0	0	0	0	0	4	1.16	0.00	0.00
14	2,018	4,867	37	0	37	0	6	5	137	92	31	1.52	0.21	5.63
19	357	743	3	0	3	0	3	3	34	0	0	0.81	0.81	9.15
24	4,434	8,959	70	0	70	0	44	44	158	8	26	1.56	0.98	3.53
27	490	1,083	10	1	11	0	8	8	122	0	3	2.03	1.48	22.53
31	351	709	9	0	9	0	4	4	57	0	5	2.54	1.13	16.08
32	1,387	2,885	5	0	5	0	1	1	133	0	4	0.35	0.07	9.22
90	4,187	8,710	22	1	23	0	7	5	144	10	16	0.53	0.11	3.31
106	3,401	7,074	31	1	32	0	13	9	205	16	19	0.90	0.25	5.80
109	326	728	1	5	6	0	1	1	5	0	5	1.65	0.27	1.37
10001	378	840	5	1	6	0	4	4	112	38	2	1.43	0.95	26.67
10420	2,469	5,148	31	0	31	0	14	14	201	60	17	1.20	0.54	7.81
10560	19	36	2	0	2	0	0	0	0	0	2	11.11	0.00	0.00
10573	341	675	4	0	4	0	1	1	35	0	3	1.19	0.30	10.37
10586	916	1,832	8	0	8	0	7	3	na	na	1	0.87	0.33	na
10713	15	31	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20032	50	102	3	0	3	0	2	2	16	0	1	5.88	3.92	31.37
20038	1,149	2,436	27	2	29	0	4	4	66	6	25	2.38	0.33	5.42
20124	30	64	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates			
					Fatalities	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
						Injuries	Illnesses	Total						
													Total Lost Workday Cases	Involving Days Away From Work
Gas Processing														
Total	3,788	7,797	48	1	49	0	18	6	283	99	31	1.26	0.15	7.26
14	15	30	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
32	692	1,440	3	0	3	0	1	0	0	5	2	0.42	0.00	0.00
57	19	36	2	0	2	0	2	2	45	0	0	11.11	11.11	250.00
65	132	267	3	0	3	0	2	0	0	73	1	2.25	0.00	0.00
90	1,127	2,347	17	0	17	0	8	2	231	21	9	1.45	0.17	19.69
99	223	460	1	1	2	0	0	0	0	0	2	0.87	0.00	0.00
109	553	1,129	6	0	6	0	1	1	4	0	5	1.06	0.18	0.71
10573	297	572	6	0	6	0	1	1	3	0	5	2.10	0.35	1.05
10620	321	705	1	0	1	0	0	0	0	0	1	0.28	0.00	0.00
10622	25	47	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10636	14	29	3	0	3	0	0	0	0	0	3	20.69	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness						Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Total Lost Workday Cases	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
								Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
Drilling														
Total	743	1,487	31	1	32	0	27	23	466	24	5	4.30	3.09	62.68
14	39	81	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
65	38	71	0	1	1	0	0	0	0	0	1	2.82	0.00	0.00
99	226	469	1	0	1	0	0	0	0	0	1	0.43	0.00	0.00
10204	49	4	1	0	1	0	1	1	189	0	0	50.00	50.00	9,450.00
10420	186	372	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	4	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20124	7	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness							Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity					
Petrochemical Manufacturing															
Total	17,925	37,583	279	27	306	0	155	69	1,213	1,774	151	1.63	0.37	6.46	
11	608	1,302	8	0	8	0	2	0	0	4	6	1.23	0.00	0.00	
13	616	1,310	25	0	25	0	13	3	41	270	12	3.82	0.46	6.26	
24	2,833	5,688	34	1	35	0	11	11	221	5	24	1.23	0.39	7.77	
90	3,031	6,306	71	4	75	0	46	30	149	40	29	2.38	0.95	4.73	
99	3,631	7,644	40	5	45	0	18	6	552	132	27	1.18	0.16	14.44	
106	4,958	10,313	63	14	77	0	42	9	69	779	35	1.49	0.17	1.34	
10001	995	1,991	16	0	16	0	9	0	0	323	7	1.61	0.00	0.00	
10420	1,103	2,813	16	3	19	0	8	4	169	216	11	1.35	0.28	12.02	

### Petrochemical Manufacturing

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates					
			Injuries	Illnesses	Total	Fatalities	Total Lost Workday Cases	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
								Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity						
Refining																
Total	44,054	94,084	1,066	80	1,146	1	558	277	5,390	8,437	587	2.44	0.59	11.46		
11	669	1,460	18	0	18	0	7	0	0	89	11	2.47	0.00	0.00		
13	1,544	3,102	75	2	77	0	45	16	799	841	32	4.96	1.03	51.52		
14	1,475	3,264	22	0	22	0	7	1	5	169	15	1.35	0.06	0.31		
24	4,648	9,921	96	1	97	0	51	49	86	30	46	1.96	0.99	1.73		
32	2,172	4,517	19	0	19	0	15	0	0	229	4	0.84	0.00	0.00		
41	3,963	8,476	52	17	69	0	39	13	123	550	30	1.63	0.31	2.90		
43	373	856	93	15	108	0	26	26	519	208	82	25.23	6.07	121.26		
65	1,671	3,407	44	4	48	0	18	1	16	263	30	2.82	0.06	0.94		
90	2,565	5,333	57	3	60	0	42	9	374	760	18	2.25	0.34	14.03		
99	4,069	7,991	56	11	67	0	34	5	325	819	33	1.68	0.13	8.13		
106	4,715	9,806	90	3	93	0	45	8	168	1,135	48	1.90	0.16	3.43		
109	1,987	4,239	54	3	57	0	30	21	745	159	27	2.69	0.99	35.15		
139	758	1,924	38	3	41	1	22	5	199	788	18	4.26	0.62	20.69		
10001	1,331	2,826	32	5	37	0	16	0	0	612	21	2.62	0.00	0.00		
10420	3,852	8,617	55	3	58	0	30	14	453	589	28	1.35	0.32	10.51		
10421	2,302	5,694	42	0	42	0	15	15	283	0	27	1.48	0.53	9.94		
10546	99	211	4	0	4	0	2	2	3	0	2	3.79	1.90	2.84		
10575	399	773	13	3	16	0	9	4	25	179	7	4.14	1.03	6.47		
10586	1,469	2,938	38	0	38	0	20	15	na	na	18	2.59	1.02	na		
10626	1,348	3,202	34	4	38	0	26	20	194	619	12	2.37	1.25	12.12		
10650	45	85	4	0	4	0	1	1	2	0	3	9.41	2.35	4.71		

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness					Incidence Rates				
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity					
														Non-Fatal Cases Without Lost Workdays	
Refining															
Total	44,054	94,084	1,066	80	1,146	1	558	277	5,390	8,437	587	2.44	0.59	11.46	
10651	25	46	3	0	3	0	1	1	112	0	2	13.04	4.35	486.96	
10710	160	360	6	0	6	0	4	1	2	63	2	3.33	0.56	1.11	
10716	258	557	12	1	13	0	2	2	47	58	11	4.67	0.72	16.88	
20029	312	750	47	1	48	0	20	20	463	168	28	12.80	5.33	123.47	
30111	184	405	14	1	15	0	8	8	204	105	7	7.41	3.95	100.74	

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity			

### Marketing -- Wholesale

<b>Total</b>	<b>14,131</b>	<b>29,650</b>	<b>377</b>	<b>7</b>	<b>384</b>	<b>0</b>	<b>242</b>	<b>108</b>	<b>2,285</b>	<b>1,412</b>	<b>142</b>	<b>2.59</b>	<b>0.73</b>	<b>15.41</b>
11	187	361	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
13	5,582	11,096	194	3	197	0	115	26	558	936	82	3.55	0.47	10.06
41	1,904	4,356	20	0	20	0	10	1	13	52	10	0.92	0.05	0.60
65	737	1,443	13	1	14	0	6	0	0	70	8	1.94	0.00	0.00
90	435	905	1	0	1	0	0	0	0	0	1	0.22	0.00	0.00
99	1,767	3,670	18	0	18	0	11	0	0	30	7	0.98	0.00	0.00
109	204	445	13	0	13	0	11	11	368	2	2	5.84	4.94	165.39
10001	452	1,139	11	0	11	0	10	3	35	78	1	1.93	0.53	6.15
10420	1,326	2,961	32	2	34	0	25	15	145	244	9	2.30	1.01	9.79
10421	644	1,457	1	0	1	0	1	1	7	0	0	0.14	0.14	0.96
20029	25	57	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00



# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates			
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
							Total Lost Workday Cases	Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
														Non-Fatal Cases Without Lost Workdays
Marketing -- Retail														
Total	32,256	55,707	1,197	15	1,212	1	616	172	2,329	5,800	595	4.35	0.62	8.36
11	404	729	21	0	21	0	17	7	200	343	4	5.76	1.92	54.87
13	13,330	20,338	764	13	777	0	409	46	473	4,625	368	7.64	0.45	4.65
41	3,935	6,871	31	0	31	0	9	3	53	26	22	0.90	0.09	1.54
65	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
90	2,750	5,720	24	1	25	1	2	2	10	0	22	0.87	0.10	0.35
109	1,475	3,318	31	1	32	0	16	15	61	4	16	1.93	0.90	3.68
10420	6,586	11,075	210	0	210	0	91	35	452	699	119	3.79	0.63	8.16
10421	104	222	2	0	2	0	2	2	30	0	0	1.80	1.80	27.03
20029	52	118	4	0	4	0	1	1	45	103	3	6.78	1.69	76.27

# **U.S. Occupational Injuries and Illnesses for 1997** **Covering Petroleum and Petrochemical Operations of Reporting Companies**

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates			
			Injuries	Illnesses	Total	Fatalities	Total Lost Workday Cases	Lost Workday Cases		Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
								Cases Involving Days Away From Work	Number of Days Away From Work					Number of Days of Restricted Activity

## **Marketing -- Not Separated**

<b>Total</b>	<b>14,423</b>	<b>29,416</b>	<b>216</b>	<b>21</b>	<b>237</b>	<b>2</b>	<b>106</b>	<b>71</b>	<b>548</b>	<b>302</b>	<b>129</b>	<b>1.61</b>	<b>0.50</b>	<b>3.73</b>
14	1,101	2,169	11	0	11	0	6	2	38	51	5	1.01	0.18	3.50
24	2,968	5,884	49	18	67	2	30	28	249	90	35	2.28	1.02	8.46
32	3,104	6,454	4	0	4	0	2	1	25	20	2	0.12	0.03	0.77
106	5,311	11,048	63	2	65	0	22	15	111	49	43	1.18	0.27	2.01
109	377	767	3	1	4	0	1	1	4	0	3	1.04	0.26	1.04
10586	1,330	2,659	55	0	55	0	37	20	na	na	18	4.14	1.50	na
10622	22	44	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	30	62	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates			
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Non-Fatal Cases Without Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity				

## Pipeline -- Liquid

Total	11,777	23,659	190	11	201	1	88	63	1,264	814	112	1.70	0.54	10.69
11	67	155	1	0	1	0	0	0	0	0	1	1.29	0.00	0.00
13	1,004	1,257	45	0	45	1	27	13	374	362	17	7.16	2.23	59.51
14	654	1,567	6	1	7	0	3	3	29	11	4	0.89	0.38	3.70
17	600	1,305	3	0	3	0	1	1	2	0	2	0.46	0.15	0.31
29	652	1,353	8	0	8	0	0	0	0	0	8	1.18	0.00	0.00
32	501	1,042	1	0	1	0	0	0	0	0	1	0.19	0.00	0.00
33	16	32	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
38	129	277	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
41	429	940	1	0	1	0	1	0	0	5	0	0.21	0.00	0.00
60	352	700	6	1	7	0	4	2	18	61	3	2.00	0.57	5.14
65	438	789	4	0	4	0	1	0	0	3	3	1.01	0.00	0.00
90	539	1,123	6	1	7	0	3	1	5	5	4	1.25	0.18	0.89
91	260	506	2	0	2	0	0	0	0	0	2	0.79	0.00	0.00
93	29	58	2	0	2	0	1	1	6	0	1	6.90	3.45	20.69
99	704	1,396	3	0	3	0	1	1	2	0	2	0.43	0.14	0.29
106	913	1,899	7	1	8	0	2	2	76	0	6	0.84	0.21	8.00
118	16	31	1	0	1	0	1	0	0	14	0	6.45	0.00	0.00
126	744	1,475	10	3	13	0	4	4	69	0	9	1.76	0.54	9.36
233	889	1,789	10	2	12	0	5	5	203	194	7	1.34	0.56	22.69
239	465	934	3	0	3	0	1	1	26	5	2	0.64	0.21	5.57
242	9	19	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness				Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases		Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity			

### Pipeline -- Liquid

<b>Total</b>	<b>11,777</b>	<b>23,659</b>	<b>190</b>	<b>11</b>	<b>201</b>	<b>1</b>	<b>88</b>	<b>63</b>	<b>1,264</b>	<b>814</b>	<b>112</b>	<b>1.70</b>	<b>0.54</b>	<b>10.69</b>
260	55	106	2	0	2	0	1	0	0	22	1	3.77	0.00	0.00
261	32	67	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10001	125	310	4	0	4	0	0	0	0	0	4	2.58	0.00	0.00
10014	28	56	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10015	69	138	1	0	1	0	0	0	0	0	1	1.45	0.00	0.00
10403	12	28	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10421	106	273	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10532	57	85	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10544	63	117	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10570	124	249	1	0	1	0	0	0	0	0	1	0.80	0.00	0.00
10575	155	330	7	1	8	0	3	3	47	0	5	4.85	1.82	28.48
10620	61	129	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10621	140	270	8	0	8	0	4	2	22	84	4	5.93	1.48	16.30
10622	266	568	7	0	7	0	4	3	44	3	3	2.46	1.06	15.49
10703	16	37	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10714	516	1,141	7	0	7	0	1	1	56	0	6	1.23	0.18	9.82
20029	16	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20037	6	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20050	2	6	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20111	3	15	4	0	4	0	4	4	109	35	0	53.33	53.33	1,453.33
30101	47	105	1	0	1	0	1	1	9	10	0	1.90	1.90	17.14

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness				Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity			

### Pipeline -- Liquid

<b>Total</b>	<b>11,777</b>	<b>23,659</b>	<b>190</b>	<b>11</b>	<b>201</b>	<b>1</b>	<b>88</b>	<b>63</b>	<b>1,264</b>	<b>814</b>	<b>112</b>	<b>1.70</b>	<b>0.54</b>	<b>10.69</b>
90001	125	310	4	0	4	0	0	0	0	0	4	2.58	0.00	0.00
90013	134	293	6	0	6	0	1	1	62	0	5	4.10	0.68	42.32
90065	438	789	4	0	4	0	1	0	0	3	3	1.01	0.00	0.00
90099	704	1,396	3	0	3	0	1	1	2	0	2	0.43	0.14	0.29
90106	913	1,899	7	1	8	0	2	2	76	0	6	0.84	0.21	8.00
90421	53	156	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
93421	30	67	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
99421	23	50	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# **U.S. Occupational Injuries and Illnesses for 1997** **Covering Petroleum and Petrochemical Operations of Reporting Companies**

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity				

## **Pipeline -- Gas**

<b>Total</b>	3,825	8,524	81	8	89	0	31	31	820	195	58	2.09	0.73	19.24
31	3,178	7,185	66	5	71	0	24	24	664	118	47	1.98	0.67	18.48
74	50	96	2	0	2	0	0	0	0	0	2	4.17	0.00	0.00
10713	49	101	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

## **Pipeline --Not Separated**

<b>Total</b>	1,596	3,335	28	3	31	0	11	9	48	70	20	1.86	0.54	2.88
24	647	1,245	6	3	9	0	4	2	8	70	5	1.45	0.32	1.29
109	563	1,266	14	0	14	0	5	5	5	0	9	2.21	0.79	0.79
10420	357	758	8	0	8	0	2	2	35	0	6	2.11	0.53	9.23
10573	21	48	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10712	3	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	5	10	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
90024	647	1,245	6	3	9	0	4	2	8	70	5	1.45	0.32	1.29

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates			
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work		
							Total Lost Workday Cases	Involving Days Away From Work	Cases Involving Days Away From Work					

## Marine --Tanker No data was reported for this function

### Marine --Inland

Total	301	634	8	0	8	0	5	0	0	57	3	2.52	0.00	0.00
13	292	616	8	0	8	0	5	0	0	57	3	2.60	0.00	0.00
10652	6	13	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

### Marine --Not Separated

Total	1,892	4,680	56	5	61	0	35	23	1,215	186	26	2.61	0.98	51.92
14	480	1,162	18	4	22	0	5	5	199	0	17	3.79	0.86	34.25
32	161	334	2	0	2	0	0	0	0	0	2	1.20	0.00	0.00
41	853	2,006	18	1	19	0	13	6	726	186	6	1.89	0.60	72.38
106	77	159	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10420	153	682	7	0	7	0	7	7	80	0	0	2.05	2.05	23.46

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Total Lost Workday Cases	Involving Days Away From Work	Number of Days Away From Work				

### Research and Development

<b>Total</b>	<b>6,606</b>	<b>13,342</b>	<b>40</b>	<b>7</b>	<b>47</b>	<b>0</b>	<b>12</b>	<b>5</b>	<b>69</b>	<b>103</b>	<b>35</b>	<b>0.70</b>	<b>0.07</b>	<b>1.03</b>
11	127	265	4	0	4	0	1	0	0	7	3	3.02	0.00	0.00
13	366	724	7	0	7	0	1	0	0	10	6	1.93	0.00	0.00
14	465	930	1	4	5	0	1	0	0	16	4	1.08	0.00	0.00
24	1,122	2,192	4	2	6	0	2	2	15	0	4	0.55	0.18	1.37
32	231	479	1	0	1	0	0	0	0	0	1	0.42	0.00	0.00
65	164	294	2	0	2	0	0	0	0	0	2	1.36	0.00	0.00
90	1,105	2,300	1	0	1	0	0	0	0	0	1	0.09	0.00	0.00
99	1,089	2,127	7	0	7	0	2	0	0	19	5	0.66	0.00	0.00
109	321	784	3	1	4	0	1	0	0	24	3	1.02	0.00	0.00
10420	1,549	3,110	10	0	10	0	4	3	54	27	6	0.64	0.19	3.47
10713	38	79	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00



# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness						Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
General Services														
Total	5,556	11,129	37	21	58	0	27	17	624	306	31	1.04	0.31	11.21
13	727	1,493	9	0	9	0	5	1	28	36	4	1.21	0.13	3.75
14	63	131	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
24	2,536	4,579	14	17	31	0	14	12	559	145	17	1.35	0.52	24.42
32	269	560	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
41	489	1,016	4	2	6	0	3	0	0	19	3	1.18	0.00	0.00
65	134	244	1	0	1	0	0	0	0	0	1	0.82	0.00	0.00
74	75	161	7	0	7	0	4	3	26	106	3	8.70	3.73	32.30
90	508	1,058	1	1	2	0	0	0	0	0	2	0.38	0.00	0.00
10421	753	1,883	1	1	2	0	1	1	11	0	1	0.21	0.11	1.17

### General Services

# U.S. Occupational Injuries and Illnesses for 1997 Covering Petroleum and Petrochemical Operations of Reporting Companies

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness					Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases			Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days of Restricted Activity			

## Administration, Engineering and Other

Total	31,754	63,855	100	43	143	0	60	46	651	175	83	0.45	0.14	2.04
11	577	1,030	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
13	2,315	4,549	14	3	17	0	8	4	22	32	9	0.75	0.18	0.97
14	2,535	5,250	12	5	17	0	6	6	20	9	11	0.65	0.23	0.76
24	2,542	4,754	4	17	21	0	6	4	70	7	15	0.88	0.17	2.94
27	907	2,138	5	0	5	0	4	4	147	0	1	0.47	0.37	13.75
32	1,951	4,057	4	0	4	0	2	1	5	63	2	0.20	0.05	0.25
41	2,529	5,260	3	6	9	0	4	4	142	0	5	0.34	0.15	5.40
65	1,543	2,703	2	0	2	0	1	0	0	3	1	0.15	0.00	0.00
74	38	79	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
90	984	2,052	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
93	18	33	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
99	3,633	7,391	5	6	11	0	2	2	29	0	9	0.30	0.05	0.78
106	538	1,120	1	0	1	0	0	0	0	0	1	0.18	0.00	0.00
109	3,708	7,516	18	4	22	0	7	7	45	0	15	0.59	0.19	1.20
118	7	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10001	363	811	1	0	1	0	0	0	0	0	1	0.25	0.00	0.00
10092	4	8	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10420	3,426	6,852	10	0	10	0	4	2	13	12	6	0.29	0.06	0.38
10514	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10560	10	17	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10573	1,265	2,400	1	0	1	0	0	0	0	0	1	0.08	0.00	0.00

**U.S. Occupational Injuries and Illnesses for 1997**  
**Covering Petroleum and Petrochemical Operations of Reporting Companies**

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness							Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
Administration, Engineering and Other														
Total	31,754	63,855	100	43	143	0	60	46	651	175	83	0.45	0.14	2.04
10620	169	351	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10622	144	288	1	0	1	0	0	0	0	0	1	0.69	0.00	0.00
10636	72	138	1	0	1	0	1	1	5	14	0	1.45	1.45	7.25
10712	7	15	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10713	170	354	2	0	2	0	2	1	5	5	0	1.13	0.56	2.82
20124	103	197	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

# U.S. Occupational Injuries and Illnesses for 1997

## Covering Petroleum and Petrochemical Operations of Reporting Companies

### Offshore Functions

a - Offshore Exploration      b - Offshore Production      d - Offshore Drilling      (abd) - Combination of Above - Not Sep.

Company ID	Average Number of Employees	Hours Worked in Thousands	Recordable Cases		Extent and Outcome of Injury and Illness							Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Non-Fatal Cases Without Lost Workdays	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work	
							Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

### All Offshore Functions

Total	6,109	12,815	126	5	131	0	90	67	994	360	41	2.04	1.05	15.51
14	230	522	7	0	7	0	4	4	12	18	3	2.68	1.53	4.60
24	2143	4234	50	0	50	0	36	32	114	8	14	2.36	1.51	5.38
27	68	199	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
32	160	333	1	0	1	0	1	1	133	0	0	0.60	0.60	79.88
41	616	1380	8	1	9	0	6	1	53	184	3	1.30	0.14	7.68
58	190	384	4	0	4	0	1	1	162	0	3	2.08	0.52	84.38
65	132	453	8	0	8	0	5	1	4	68	3	3.53	0.44	1.77
99	976	2029	12	2	14	0	9	4	9	6	5	1.38	0.39	0.89
106	327	681	6	0	6	0	4	4	188	0	2	1.76	1.17	55.21
10001	61	126	5	1	6	0	4	4	112	38	2	9.52	6.35	177.78
10573	24	57	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10586	349	698	6	0	6	0	6	2	na	na	0	1.72	0.57	na
10713	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20032	12	26	3	0	3	0	2	2	16	0	1	23.08	15.38	123.08
20038	43	82	4	0	4	0	3	3	25	0	1	9.76	7.32	60.98
20111	3	15	4	0	4	0	4	4	109	35	0	53.33	53.33	1,453.33
20124	10	20	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

**U.S. Occupational Injuries and Illnesses for 1997**  
**Covering Petroleum and Petrochemical Operations of Reporting Companies**  
**Offshore Functions**

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness						Incidence Rates	
			Injuries	Illnesses	Total	Lost Workday Cases					Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Lost Workday Cases						
						Fatalities	Total Lost Workday Cases	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity		

**Offshore Exploration**

*No data was reported for this function*

**Offshore Production**

<b>Total</b>	<b>2,165</b>	<b>4,635</b>	<b>46</b>	<b>3</b>	<b>49</b>	<b>0</b>	<b>32</b>	<b>22</b>	<b>645</b>	<b>281</b>	<b>17</b>	<b>2.11</b>	<b>0.95</b>	<b>27.83</b>
14	230	522	7	0	7	0	4	4	12	18	3	2.68	1.53	4.60
41	553	1,243	8	1	9	0	6	1	53	184	3	1.45	0.16	8.53
58	190	384	4	0	4	0	1	1	162	0	3	2.08	0.52	84.38
99	802	1,667	12	1	13	0	9	4	9	6	4	1.56	0.48	1.08
106	327	681	6	0	6	0	4	4	188	0	2	1.76	1.17	55.21
10001	44	91	5	1	6	0	4	4	112	38	2	13.19	8.79	246.15
10713	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
20111	3	15	4	0	4	0	4	4	109	35	0	53.33	53.33	1,453.33

**Offshore Drilling**

<b>Total</b>	<b>254</b>	<b>534</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0.37</b>	<b>0.00</b>	<b>0.00</b>
41	63	137	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
99	174	362	0	1	1	0	0	0	0	0	1	0.55	0.00	0.00
10001	17	35	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

**U.S. Occupational Injuries and Illnesses for 1997**  
**Covering Petroleum and Petrochemical Operations of Reporting Companies**  
**Offshore Functions**

Company ID	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases		Extent and Outcome of Injury and Illness							Incidence Rates		
			Injuries	Illnesses	Total	Fatalities	Lost Workday Cases				Non-Fatal Cases Without Lost Workdays	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Total Lost Workday Cases	Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
Combinations of Above -- Not Separated														
Total	3,690	7,646	80	1	81	0	58	45	349	79	23	2.12	1.18	9.13
24	2,143	4,234	50	0	50	0	36	32	114	8	14	2.36	1.51	5.39
27	68	199	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
32	160	333	1	0	1	0	1	1	133	0	0	0.60	0.60	79.88
65	132	453	8	0	8	0	5	1	4	68	3	3.53	0.44	1.77
10573	24	57	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
10586	349	698	6	0	6	0	6	2	na	na	0	1.72	0.57	na
20032	12	26	3	0	3	0	2	2	16	0	1	23.08	15.38	123.08
20038	43	82	4	0	4	0	3	3	25	0	1	9.76	7.32	60.98
20124	10	20	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

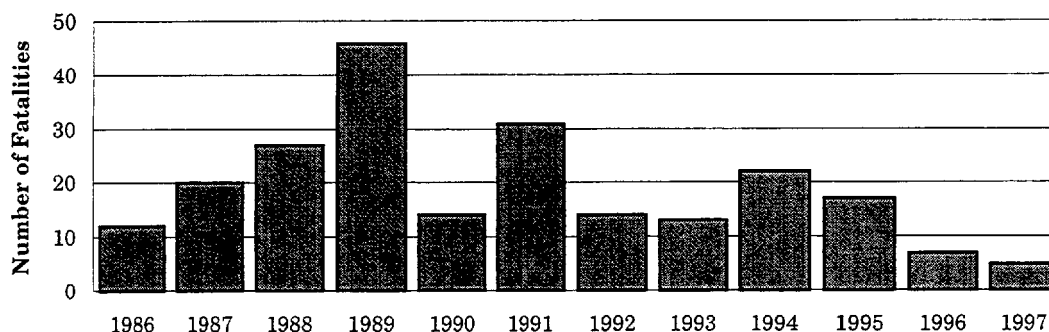
**Combinations of Above -- Not Separated**

**1997—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1997**  
**As Reported to the American Petroleum Institute**

**Summary of Fatal Injuries in the Petroleum Industry as Reported to the American Petroleum Institute for 1997**

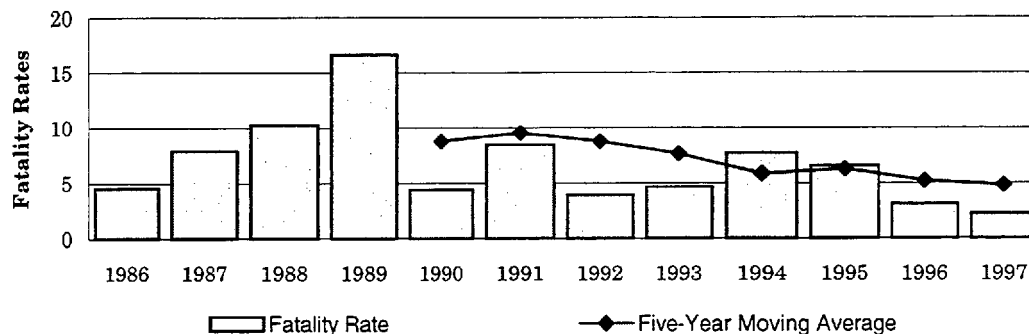
One hundred and thirty-nine oil and gas companies and their subsidiaries, employing 231,332 workers reported 5 on-duty fatal accidents during 1997. This is equivalent to one fatality for every 46,266 workers employed. Comparatively, in 1996, the industry experienced one fatality for every 32,601 employees. The graph below shows the number of fatalities reported in this publication for the last 12 years.

**Reported U.S. Occupational Fatalities in the Petroleum Industry**



The change in the number of employees represented by this survey every year accounts for some of the variation in the data. Therefore, the following graph shows the fatality rate<sup>1</sup> for the past 12 years. However, as with any data, the factors that cause variations over time can also be cyclical, seasonal, trend, or irregular (random). Any combination of these factors can further cloud any visual interpretation of the data. Because this is annual data, cyclical and seasonal variations may be discounted. By calculating a *moving average*<sup>2</sup> for each year, we can smooth-out the effect of irregular variations and thus observe a trend. The trend in the rate of fatalities in the petroleum industry continues to improve as is shown below by the five-year moving average line.

**Reported U.S. Occupational Fatality Rates in the Petroleum Industry**  
(per 100,000 Employees)



<sup>1</sup> Fatality rate = (number of fatalities\*100,000)/number of employees. This is the number of fatalities per 100,000 employees.

<sup>2</sup> A five-year moving average for a given year is the average of that year and the 4 preceding years. For example, the 5-year moving average for 1990, using rounded numbers, shown on the graph equals (4+17+10+8+5)/5=8.8.

1997—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1997  
As Reported to the American Petroleum Institute

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## FATALITIES

Four companies reported experiencing at least one fatality during 1997. Each of them submitted detailed information on the circumstances surrounding the five on-duty fatalities reported to API.

API has published information provided by member companies on fatal accidents in the petroleum industry since 1933. Each incident is described in a brief narrative and is intended to provide information that could be used to avoid the occurrence of similar accidents in the future.

## REFINING

### 01/21/97 — Fire and Explosion

At approximately 7:41 p.m. on January 21, 1997, a pipe ruptured at a hydrocracker unit which caused an explosion and fire. This incident caused the fatality of a hydrocracker operator and forty-six minor injuries were reported by other employees and contractors in the days following the incident. No significant off-site impacts were reported.<sup>3</sup>

The pipe ruptured as a result of being subjected to excessively high temperature and not being properly depressured, per emergency procedures. Cause for the excessive temperature was a very high rapid temperature excursion<sup>4</sup> which started in catalyst bed 4 of Reactor 3 in Stage 2 of the hydrocracker. Although, no single or conclusive cause for the temperature excursion could be determined after the explosion, all possible causes for the temperature excursion were identified. Possible reasons identified for the temperature excursion include: spontaneous formation of a "hot spot" in bed 4; the flow characteristics of fluids in bed 4; or the possibility of uneven liquid distribution within the bed.

A contributing cause for the pipe rupture was that the operators did not depressure the unit as specified in emergency procedures for safely controlling temperature excursions. Reasons for the operators not depressuring the unit include: the incident occurred very rapidly and was outside previous experiences; they did not believe the control room temperature indicators; and they were confused and distracted by process information which was inconsistent with past temperature excursion experiences.

Corrective actions were identified to respond to the possible causes for the reactor temperature excursion. These actions include installation of new controls which will automatically depressure the unit in the event of a future high temperature excursion, and retraining of operations personnel.

This report summarizes the results of a 3 month refinery investigation into the causes of this incident. The first section of the report describes the investigation procedure. The next several sections describe the physical design and operation of the hydrocracker unit, as well as its control system, operational history, operator staffing and training, and the events leading up to the incident itself. The last section of the report presents conclusions and recommendations based on the investigation results.

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<sup>3</sup> Details of the emergency response and notifications at the time of the incident are contained in the 72-hour report made by the company to the county Department of Health Services.

<sup>4</sup> A temperature excursion is an episode in which temperatures deviate outside of a normal operating range.



**1997—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1997  
As Reported to the American Petroleum Institute**

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**06/20/97 — Drowning**

At approximately 3:15 a.m. an employee fell into the water at an asphalt facility wharf and subsequently died. There were no witnesses. No other incidents of this kind are known to have occurred previously at the facility.

Because there were no witnesses, the team was unable to ascertain what happened. It appears, however, that our employee lost his balance, tripped or stumbled and fell into the water. He was not wearing a personal flotation device.

Shortly, before, our employee and a crewmember of the barge had finished tying the barge up to the wharf. Our employee told the crewman he was going to walk south to Berth 3 at the wharf to assist in tying up the second barge just arriving. The two parted company, the crewman moving forward (north) on the barge to perform some checks before loading cargo and the employee going south toward Berth 3. A short while later the crewman heard a noise, noticed our employee was not visible and began walking aft on the barge to investigate. When he reached the Berth 4 loading manifold area he saw our employee in the water between the wharf and the barge and went to get assistance. Our employee was pulled from the water but emergency medical personnel were unable to revive him.

The employee was not wearing a personal flotation device (PFD). Given the nature of his work activity and the water hazard he should have been wearing a PFD.

**MARKETING RETAIL**

**05/20/97 — Motor Vehicle Accident**

An employee was working at a terminal installing computer equipment and was returning at 9:25 p.m. on May 20, 1997 he was involved in a motor vehicle accident and subsequently died from injuries sustained. Our employee was traveling north on Interstate 5 when a tractor trailer truck traveling South on I-5 performed an illegal U-turn through the median onto the northbound I-5. At the time of impact the tractor trailer was perpendicular to northbound traffic flow. Our employee hit the truck broadside at a full rate of speed. The tractor trailer had none of the legally required side reflectors, this area of the freeway is not lit, the truck was not visible. The truck driver was cited for causing this incident with a combination of an illegal U-turn and insufficient lighting on his truck.

**05/31/97 — Murder**

An employee was shot by an ex-employee. The employee died at the scene. The assailant then committed suicide. Motive of the assailant is unknown.

**PIPELINE LIQUID**

**06/16/97 — Struck By An Unknown Object**

An employee was mowing grass with a tractor when he was struck by an unknown object which lodged behind his left knee. The object could not be removed surgically and caused a blood clot and heart attack ten (10) days later. Source of the object is unknown, but it did not come from the mowing operation. Additional protective equipment was recommended by the investigation.

## 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix A

### Participating Companies

#### Alpha Listing

(list includes ID only for companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
14	ARCO
10621	All American Pipeline Company
233	Alyeska Pipeline Service Company
	Amerada Hess Corporation
	American Refining Group Inc.
106	Amoco Corporation
90106	Amoco Pipeline Company
20038	Anadarko Petroleum Corporation
20037	Anschutz Ranch East Pipeline Inc.
13	Ashland Inc.
90013	Ashland Pipeline
	BHP Petroleum (Americas) Inc.
10001	BP America
90001	BP Oil Pipeline Company
10712	BWOC Inc.
99421	Badger Pipeline Company
	Big West Oil/Flying J Inc.
17	Buckeye Pipe Line Company
	Burlington Resources Inc.
10703	Butte Pipe Line Company
10421	CITGO Petroleum Corporation
90421	CITGO Pipeline Company
93421	CITGO Products Pipeline Company
19	Cabot Oil & Gas Corporation
10015	Calneve Pipe Line Company
	Carnegie Natural Gas Company
	Cenex Pipeline Company
10014	Central Florida Pipeline Corporation
10203	Charles B. Wilson Jr. Inc.
30103	Chermac Energy Corporation
24	Chevron Corporation
90024	Chevron Pipe Line Company
118	Chicap Pipeline
	Ciniza Pipe Line Company
	Clearfield Energy Inc.
10403	Collins Pipeline Company
29	Colonial Pipeline Company

**1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry**

## Appendix A

### Participating Companies

#### Alpha Listing

(list includes ID only for companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
31	Columbia Energy Group
32	Conoco Inc. Consumer Gasoline Stations Inc.
33	Cook Inlet Pipe Line Company
10546	Cross Oil Refining & Marketing Inc. Dearing Inc. Devon Energy Corporation Dixie Pipeline Company
260	Dome Pipeline Corporation EEC Inc. ERGON Inc. Eberly & Meade Inc. EnergyPro Inc.
10620	Enterprise Products Company
20111	Ewing Bank Pipeline Company Excalibur Exploration
38	Explorer Pipeline Company
41	Exxon Company U.S.A.
43	Farmland Industries Inc.
11	Fina Oil & Chemical Company Fina Oil & Chemical/Pipeline H & C Oil Operating Inc. Hanley Petroleum Inc. Heartland Exploration Inc. Hellman Properties LLC
20032	Howell Petroleum Corporation Hunt Oil Company Jack L. Phillips Jacobus Company James K. Anderson Inc. Justiss Oil Company Inc. Kaneb Pipe Line Company
57	Kentucky Hydrocarbon
58	Kerr-McGee O&G
10570	LOOP LLC
60	Lakehead Pipe Line Company Inc.
10092	Lone Mountain Production Company

## 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix A

### Participating Companies

#### Alpha Listing

(list includes ID only for companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
10626	Lyondell Citgo Refining Company
	M. D. Abel Company
	Mack Energy Corporation
65	Marathon Oil Company
90065	Marathon Pipe Line Company
	McGowan Working Partners
10622	Mid-America Pipeline Company
	Miller Oil Company
	Mitchell Energy Corporation
10420	Mobil Oil Corporation
	Mobil Pipeline
10636	Mustang Fuel Corporation
10575	National Cooperative Refinery Association
	Navajo Refining Co Pipeline Division
27	Occidental Oil & Gas Corporation
10532	Oiltanking Houston Inc.
10544	Olympic Pipe Line Company
	Oryx Energy Company
10710	Paramount Petroleum Corporation
	Patina Oil & Gas Corporation
10586	Pennzoil Company
90	Phillips Petroleum Company
	Placid Refining Company
91	Plantation Pipe Line Company
20124	Pogo Producing Company
93	Portland Pipe Line Corporation
	Precision Operating Inc.
74	Questar Pipeline Company
20050	Razorback Pipeline Company
	Royal Petroleum Corporation
	Santa Fe Energy Resources
239	Santa Fe Pacific Pipeline Partners
	Seadrift Pipeline Company
10713	Seagull Energy Corporation
10560	Shakespeare Oil Company Inc.
99	Shell Oil Company
90099	Shell Pipe Line Company

## 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix A

### Participating Companies

#### Alpha Listing

(list includes ID only for companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
10514	Shepler & Thomas Inc. Somerset Refinery
10651	Southland Oil Co - Lumberton
10650	Southland Oil Co - Sandersville
10652	Southland Oil Co - Vicksburg Stokes Production
10714	TEPPCO
261	TEPSCO/Tellepsen Pipeline Services Company
109	Texaco Inc. Three B Oil Company
20016	Thums Long Beach Company Tipperary Oil & Gas Corporation
139	Tosco Refining Company
242	Trans Mountain Oil Pipe Line
30101	TransMontaigne Pipeline Inc. Tripledee Drilling Company UOP Inc.
10573	Union Pacific Resources Union Texas Petrochemicals
20029	United Refining Company
10716	Valero Refining Company Venada National Walter Duncan Inc.
10204	Weal Drilling Company Inc. Westico Energy Company
126	Williams Pipe Line Company
30111	Wynnewood Refining Company Wyoming Pipeline Company

## 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix B

### Participating Companies Numeric Listing

(list includes only companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
11	Fina Oil & Chemical Company
13	Ashland Inc.
14	ARCO
17	Buckeye Pipe Line Company
19	Cabot Oil & Gas Corporation
24	Chevron Corporation
27	Occidental Oil & Gas Corporation
29	Colonial Pipeline Company
31	Columbia Energy Group
32	Conoco Inc.
33	Cook Inlet Pipe Line Company
38	Explorer Pipeline Company
41	Exxon Company U.S.A.
43	Farmland Industries Inc.
57	Kentucky Hydrocarbon
58	Kerr-McGee O&G
60	Lakehead Pipe Line Company Inc.
65	Marathon Oil Company
74	Questar Pipeline Company
90	Phillips Petroleum Company
91	Plantation Pipe Line Company
93	Portland Pipe Line Corporation
99	Shell Oil Company
106	Amoco Corporation
109	Texaco Inc.
118	Chicap Pipeline
126	Williams Pipe Line Company
139	Tosco Refining Company
233	Alyeska Pipeline Service Company
239	Santa Fe Pacific Pipeline Partners
242	Trans Mountain Oil Pipe Line
260	Dome Pipeline Corp
261	TEPSCO/Tellepsen Pipeline Services Company
10001	BP America
10014	Central Florida Pipeline Corporation
10015	Calnev Pipe Line Company
10092	Lone Mountain Production Company

## 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix B

### Participating Companies Numeric Listing

(list includes only companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

Company ID	Company Name
10203	Charles B. Wilson Jr. Inc.
10204	Weal Drilling Company Inc.
10403	Collins Pipeline Company
10420	Mobil Oil Corporation
10421	CITGO Petroleum Corporation
10514	Shepler & Thomas Inc.
10532	Oiltanking Houston Inc.
10544	Olympic Pipe Line Company
10546	Cross Oil Refining & Marketing Inc.
10560	Shakespeare Oil Company Inc.
10570	LOOP LLC
10573	Union Pacific Resources
10575	National Cooperative Refinery Association
10586	Pennzoil Company
10620	Enterprise Products Company
10621	All American Pipeline Company
10622	Mid-America Pipeline Company
10626	Lyondell Citgo Refining Company
10636	Mustang Fuel Corporation
10650	Southland Oil Co - Sandersville
10651	Southland Oil Co - Lumberton
10652	Southland Oil Co - Vicksburg
10703	Butte Pipe Line Company
10710	Paramount Petroleum Corporation
10712	BWOC Inc.
10713	Seagull Energy Corporation
10714	TEPPCO
10716	Valero Refining Company
20016	Thums Long Beach Company
20029	United Refining Company
20032	Howell Petroleum Corporation
20037	Anschutz Ranch East Pipeline Inc.
20038	Anadarko Petroleum Corporation
20050	Razorback Pipeline Company
20111	Ewing Bank Pipeline Company
20124	Pogo Producing Company
30101	TransMontaigne Pipeline Inc.

**1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry****Appendix B**  
**Participating Companies**  
**Numeric Listing**

(list includes only companies that agreed to have their numbers published individually)

(ID greater than 90000 represents a subsidiary of a large company. Subsidiary numbers are not included in totals)

<b>Company ID</b>	<b>Company Name</b>
30103	Chermac Energy Corporation
30111	Wynnewood Refining Company
90001	BP Oil Pipeline Company
90013	Ashland Pipeline
90024	Chevron Pipe Line Company
90065	Marathon Pipe Line Company
90099	Shell Pipe Line Company
90106	Amoco Pipeline Company
90421	CITGO Pipeline Company
93421	CITGO Products Pipeline Company
99421	Badger Pipeline Company



# 1997 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

## Appendix C

(list includes only companies that agreed to have their numbers published individually)

Company ID	Hours Worked or Exposure Hours per Day While on Duty	Duty Cycle	
		Days On	Days Off
24	12	7	7
27	16	7	7
32	12	7	7
41	12	7	7
58	12	7	7
65	12	7	7
10001	12	7	7
10586	12	7	7
10713	12	7	7
20032	12	7	7
20038	12	7	7
20111	12	7	7
20124	na	na	na

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