
1998

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 1998**

API Publication 2377
April 1999



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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**Prepared for the Regulatory Affairs Department
by the Statistics Department**

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April 1999

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Suggested revisions are invited and should be submitted to the director of the Regulatory 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: 1998

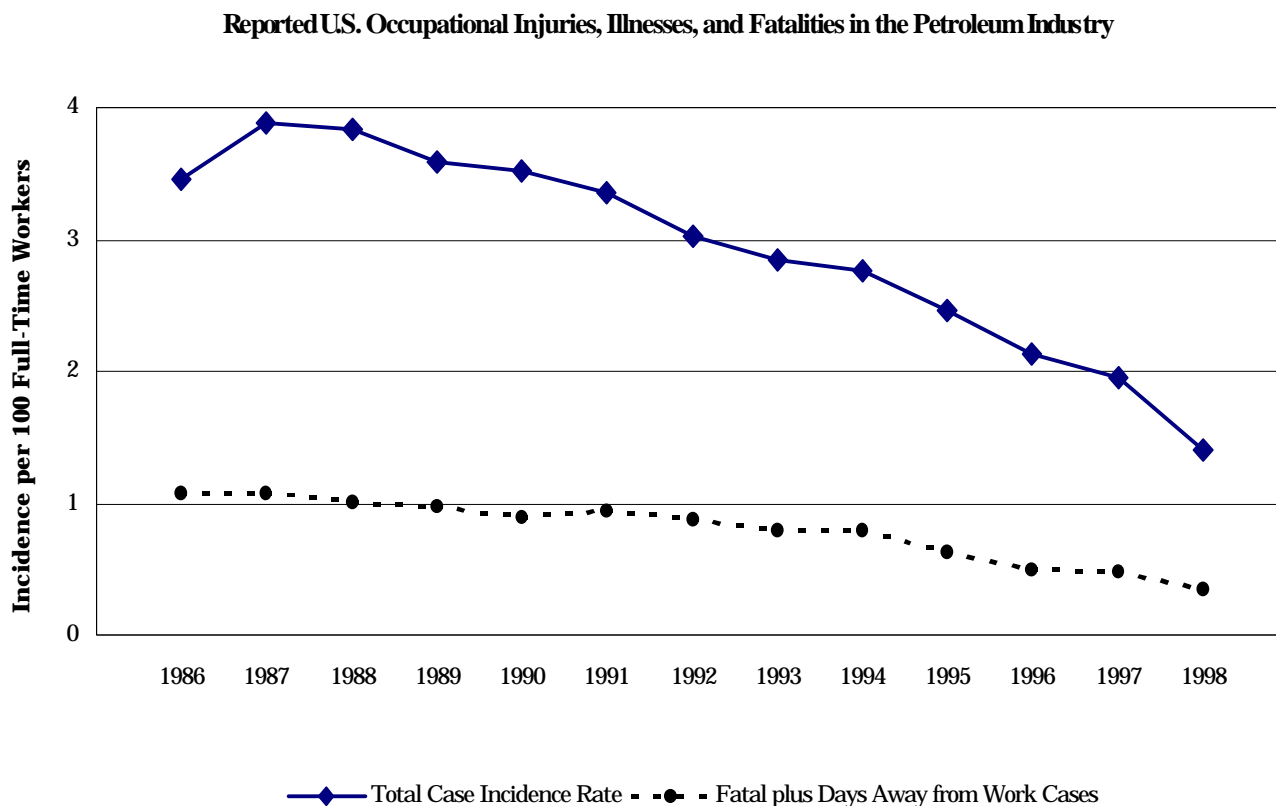
SUMMARY

This report is an aggregate of data submitted to the American Petroleum Institute (API) by 118 oil and gas companies (including 14 subsidiaries), employing 212,850 persons with a total work experience of 435 million hours during 1998. In 1997, 139 companies reported 231,332 employees with a work experience of 470 million hours.

In 1998, the *Total Case Incidence Rate* reported was 1.34, compared to 1.95 for 1997. 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* reported for 1998 was .33 per 200,000 hours worked—or one case for every 303 employees, improving from .48 for 1997—or one case for every 208 employees.

Safety among reporting companies continues to improve, as shown in the figure below. Since 1986, the reported *Total Case Incidence Rate* and *Fatal plus Days Away from Work Incidence Rate* have improved an average of 4.6 and 7.9 percent per year, respectively.



The Survey

Participation in the API annual survey is voluntary and company participation varies from year to year. Therefore, caution should be exercised when using this data to characterize the performance of the industry as a whole. However, 84 companies that responded to this year's survey also responded to last year's survey. These 84 companies represent 86 percent of the total number of employees and 86 percent of the total number of hours reported to API for 1998. 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 incidence 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.

Of the 118 companies that responded to the survey 86 agreed to have their company data published individually. However, the total listed for each function is the total for *all* 118 reporting companies.

Significant differences exist among companies regarding return-to-work policies and practices, i.e., for 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 Rates 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.

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

Employment in the Petroleum Industry				
	E&P and Drilling	Refining and Gas Processing	Oil Pipelines	Total Marketing
BLS	325.9	92.8	14.2	831.5
API	38.8	55.3	10.5	49.1
API Representation Rate	12%	60%	74%	6%

Employment figures are in thousands. 1998 BLS figures are current as of March 1999.

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

This publication is also available on API's electronic bulletin board, ACCESS*API. For subscription information call (202) 682-8511.

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Table 1 -- Company Totals (Including Offshore Activities)

1		2	3	4			5						6		
Function	Key ⁶	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness						Incidence Rates		
				a	b	c	d	e	f	g	h	i	j	k	l
				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
								Cases Involving Days From Away Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				
Exploration	a	1,325	2,566	1	0	1	0	1	1	5	0	0	0.08	0.08	0.39
Production	b	7,312	15,557	85	3	88	0	43	12	245	399	45	1.13	0.15	3.15
E&P-Not sep ¹	ab	29,287	59,938	243	23	266	0	101	83	1,853	526	165	0.89	0.28	6.18
E&P Subtotal		37,924	78,061	329	26	355	0	145	96	2,103	925	210	0.91	0.25	5.39
Gas Processing	c	6,326	12,588	84	1	85	0	35	26	371	179	50	1.35	0.41	5.89
Drilling	d	924	1,857	40	0	40	1	19	19	826	0	20	4.31	2.15	88.96
Petrochemical Mfg.	e	15,672	32,867	193	8	201	1	98	25	510	1,421	102	1.22	0.16	3.10
Refining	f	49,002	102,956	927	56	983	5	482	170	3,466	5,379	496	1.91	0.34	6.73
Marketing-Whole.	g	10,296	21,605	214	5	219	2	145	59	1,083	1,018	72	2.03	0.56	10.03
Marketing-Retail	h	26,415	48,859	389	10	399	1	234	128	3,505	1,484	164	1.63	0.53	14.35
Mrkt-Not sep ²	gh	12,343	25,449	122	12	134	0	47	36	901	80	87	1.05	0.28	7.08
Mrkt. Subtotal		49,054	95,913	725	27	752	3	426	223	5,489	2,582	323	1.57	0.47	11.45
Pipeline-Liquid	i	10,479	21,845	152	19	171	0	71	55	1,057	840	100	1.57	0.50	9.68
Pipeline-Gas	j	270	516	7	0	7	0	3	3	108	100	4	2.71	1.16	41.86
Pipeline-Not sep ³	ij	1,713	3,638	22	4	26	0	13	6	132	131	13	1.43	0.33	7.26
Pipeline Subtotal		12,462	25,999	181	23	204	0	87	64	1,297	1,071	117	1.57	0.49	9.98
Marine-Tanker	k	223	662	12	1	13	0	7	0	0	34	6	3.93	0.00	0.00
Marine-Inland	l	230	835	3	0	3	0	3	1	14	2	0	0.72	0.24	3.35
Marine-Not sep ⁴	kl	1,799	4,306	62	1	63	1	30	22	1,172	179	32	2.93	1.07	54.44
Marine Subtotal		2,252	5,803	77	2	79	1	40	23	1,186	215	38	2.72	0.83	40.88
Research & Dev.	m	6,109	12,237	40	5	45	0	13	11	177	128	32	0.74	0.18	2.89
General Services	n	6,085	12,295	31	7	38	0	17	15	201	213	21	0.62	0.24	3.27
Admin., Eng., Other	o	27,040	54,805	96	32	128	0	40	35	1,175	140	88	0.47	0.13	4.29
Total		212,850	435,381	2,723	187	2,910	11	1,402	707	16,801	12,253	1,497	1.34	0.33	7.72

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Table 2 -- Offshore Functions

1		2	3	4			5						6		
Function	Key ⁵	Average Number of Employees	Hours Worked (Thousands)	Recordable Cases			Extent and Outcome of Injury and Illness						Incidence Rates		
				a	b	c	d	e	f	g	h	i	j	k	l
				Injuries	Illnesses	Total	Fatalities	Cases Involving Days From Away Work Plus Days of Restricted Activity	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	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Offshore Production	b	2,124	4,689	34	0	34	0	15	6	209	115	19	1.45	0.26	8.91
Offshore Drilling	d	243	519	1	0	1	0	0	0	0	0	1	0.39	0.00	0.00
Combinations of Above- Not sep ⁶	abd	1,135	2,693	19	2	21	0	14	8	194	38	7	1.56	0.59	14.41
Total Offshore		3,506	7,915	54	2	56	0	29	14	403	153	27	1.42	0.35	10.18

Incidence Rate Formulas

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

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

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

Endnotes

- ¹ E&P data unable to be separated into Exploration or Production functions.
- ² Marketing data unable to be separated into Wholesale or Retail functions.
- ³ Pipeline data unable to be separated into Liquid or Gas functions.
- ⁴ Marine data unable to be separated into Tanker or Inland.
- ⁵ Keyed to definitions outlined in the API Occupational Injuries, Illnesses, and Fatalities Instruction Manual.
- ⁶ 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).

U.S. Occupational Injuries and Illnesses for 1998

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 Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

All Functions

	Total	212,850	435,381	2,723	187	2,910	11	1,402	707	16,801	12,253	1,497	1.34	0.33	7.72	
ARCO	8,848	19,237	109	1	110	0	55	29	665	755	55	1.14	0.30	6.91	a,(ab),b,d,f,(gh),(ij),(kl),m,n	
ARCO Alaska - Kuparuk ¹	23	50	1	0	1	0	1	1	65	0	0	4.00	4.00	260.00	i	
ARCO Alaska - Oliktok ¹	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
ARCO Pipe Line Co. ¹	658	1,515	11	0	11	0	7	2	124	112	4	1.45	0.26	16.37	(ij)	
Alyeska Pipeline Srvc	846	1,711	10	7	17	0	5	4	61	65	12	1.99	0.47	7.13	i	
Amoco Corporation	17,775	37,412	221	7	228	1	83	30	663	998	144	1.22	0.17	3.54	(ab),e,f,(gh),i,(kl),o	
Amoco Pipeline Co. ¹	600	1,686	6	1	7	0	4	4	50	0	3	0.83	0.47	5.93	i	
Anschutz Ranch East PL	5	13	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
BP America	11,709	23,417	0	0	142	0	19	3	0	0	123	1.21	0.03	0.00	(ab),e,f,g,h,	
BWOC	13	31	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	b,g,(ij),n,o	
Belle Fourche Pipeline	77	154	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
Buckeye Pipe Line Co.	580	1,350	8	0	8	0	2	2	13	77	6	1.19	0.30	1.93	i	
Butte Pipeline Co.	16	37	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
CITGO Petroleum	4,812	10,005	47	3	50	0	21	14	176	366	29	1.00	0.28	3.52	f,g,h,i,n	
CITGO Pipeline Co. ¹	34	99	1	0	1	0	0	0	0	0	1	2.02	0.00	0.00	i	
CITGO Prod Pipeline ¹	31	76	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
Calnev Pipe Line Co.	70	134	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
Cenex Harvest States	240	488	6	0	6	0	6	0	0	67	0	2.46	0.00	0.00	f	
Central FLA Pipeline	17	34	1	0	1	0	1	1	1	6	0	5.88	5.88	5.88	i	

¹ A subsidiary of another reporting company. Subsidiary numbers are not included in the totals.

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

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Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

All Functions

	<i>Total</i>	<i>212,850</i>	<i>435,381</i>	<i>2,723</i>	<i>187</i>	<i>2,910</i>	<i>11</i>	<i>1,402</i>	<i>707</i>	<i>16,801</i>	<i>12,253</i>	<i>1,497</i>	<i>1.34</i>	<i>0.33</i>	<i>7.72</i>
Chevron Corporation	20,838	41,106	238	44	282	0	131	69	1,673	179	151	1.37	0.34	8.14	(ab),e,f,(gh),(ij),m,n,o
Chevron Pipeline Co. ¹	625	1,225	8	4	12	0	4	3	7	5	8	1.96	0.49	1.14	(ij)
Chicap Pipe Line Co.	21	41	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i,o
Clark Ref & Mrktg	833	1,723	11	0	11	0	5	0	0	201	6	1.28	0.00	0.00	f,
Collins Pipeline Co.	12	26	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
Colonial Pipeline Co.	678	1,390	2	0	2	0	1	1	4	0	1	0.29	0.14	0.58	i
Conoco Inc.	10,496	21,827	45	2	47	0	14	5	353	122	33	0.43	0.05	3.24	(ab),c,f,(gh),i,(kl),m,n,o,
Dome Pipeline Corp.	53	104	2	0	2	0	1	0	0	16	1	3.85	0.00	0.00	i
Enbridge (U.S.) Inc.	356	732	8	1	9	0	2	0	0	42	7	2.46	0.00	0.00	i
Enbridge Pipelines (ND)	33	69	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
EnergyPro Inc.	6	17	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	b,
Enterprise Prod Optg	494	1,091	3	0	3	0	1	1	152	0	2	0.55	0.18	27.86	c,i,o,
Equilon Enterprises LLC	9,788	20,194	147	7	154	2	53	35	496	452	99	1.53	0.37	4.91	f,g,h,i,m,o
Equilon Pipeline Co. ¹	1,398	2,862	12	2	14	0	6	5	307	271	8	0.98	0.35	21.45	i
Ewing Bank Pipeline	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
Explorer Pipeline Co.	130	277	2	0	2	0	2	2	86	0	0	1.44	1.44	62.09	i
Exxon Co. U.S.A.	16,433	34,187	165	36	201	3	98	19	1,282	831	100	1.18	0.13	7.50	b,f,g,h,(kl),n,o
Exxon Pipeline Co.	430	960	1	1	2	0	1	0	0	25	1	0.42	0.00	0.00	i
Fina Oil & Chemical	2,868	6,123	58	1	59	0	35	12	327	590	24	1.93	0.39	10.68	(ab),e,f,g,h,i,m,o

¹ A subsidiary of another reporting company. Subsidiary numbers are not included in the totals.

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Company Name	Average Number of Employees	Hours Worked in Thousands	Recordable Cases			Extent and Outcome of Injury and Illness						Incidence Rates		
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All Functions

	Total	212,850	435,381	2,723	187	2,910	11	1,402	707	16,801	12,253	1,497	1.34	0.33	7.72	
Gensis Pipeline	44	100	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
Giant Ref Co.	222	503	6	0	6	0	1	0	0	9	5	2.39	0.00	0.00	0.00	f,
Howell Petroleum	133	268	5	0	5	0	3	3	15	0	2	3.73	2.24	11.19	(ab)	
Interstate Energy Co.	26	56	1	0	1	0	0	0	0	0	1	3.57	0.00	0.00	0.00	i
Kentucky Hydrocab	19	43	1	0	1	0	1	1	32	0	0	4.65	4.65	148.84	c,	
Kerr-McGee O & G	544	1,132	3	0	3	0	1	1	5	0	2	0.53	0.18	0.88	a,b	
LOOP LLC	124	248	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	i
Long Drilling Co.	3	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	a,
Lyondell-Citgo Ref	1,348	3,130	40	2	42	0	28	17	592	272	14	2.68	1.09	37.83	f,	
Marathon Ashland Pet	7,745	15,096	148	2	150	0	78	8	256	1,114	72	1.99	0.11	3.39	f,g,h,i,k,o	
Marathon Oil Co.	3,382	6,372	28	1	29	0	11	5	266	174	18	0.91	0.16	8.35	a,b,c,d,m,n,o	
Michael D. Lillis	4	3	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	a,b
Mobil East of Rockies ¹	318	640	1	na	1	na	na	na	na	na	na	0.31	na	na	na	i
Mobil Oil Corporation	20,653	40,546	296	11	307	0	151	51	na	na	156	1.51	0.25	na	(ab),e,f,g,h,(ij),l,m,o	
Mobil PL (New Eng.) ¹	13	29	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	i
Motiva Enterprises LLC	4,935	10,038	57	0	57	2	17	10	20	0	38	1.14	0.24	0.40	f,g,h,o	
Nat'l Coop Ref Assn	555	1,060	27	2	29	0	15	10	133	213	14	5.47	1.89	25.09	f,i	
Occidental O&G Corp.	1,014	2,544	11	1	12	0	3	3	76	0	9	0.94	0.24	5.98	(ab),o	
Oiltanking Houston	57	85	1	0	1	0	0	0	0	0	1	2.35	0.00	0.00	0.00	i,n

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U.S. Occupational Injuries and Illnesses for 1998

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 Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

All Functions

	Total	212,850	435,381	2,723	187	2,910	11	1,402	707	16,801	12,253	1,497	1.34	0.33	7.72	
Olympic Pipe Line Co.	66	137	2	0	2	0	2	2	24	0	0	2.92	2.92	35.04	i	
Phillips Petroleum Co.	17,801	37,002	192	9	201	1	82	42	764	741	118	1.09	0.23	4.13	(ab),c,e,f,g,h,i,m,n,o	
Phillips Pipe Line Co. ¹	660	1,376	17	0	17	0	8	3	8	23	9	2.47	0.44	1.16	i	
Placid Refining Co.	200	415	2	na	2	na	na	na	na	na	na	0.96	na	na	f	
Plains All American	121	250	6	0	6	0	4	2	2	82	2	4.80	1.60	1.60	i	
Plantation Pipe Line	275	531	7	0	7	0	3	3	18	0	4	2.64	1.13	6.78	i	
Portland Pipe Line	48	93	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i,o	
Questar Pipeline Co.	128	268	7	0	7	0	3	3	29	32	4	5.22	2.24	21.64	j,n,o	
Razorback Pipeline Co.	2	5	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
Santa Fe Energy Res.	396	792	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	a,b,o	
Seadrift Pipeline Corp.	92	191	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i,j	
Seagull Energy Corp.	492	1,022	5	0	5	0	1	1	5	0	4	0.98	0.20	0.98	a,(ab),b,d,(gh),(ij),j,m,o	
Shakespeare Oil Co.	30	57	2	0	2	0	1	1	40	0	1	7.02	3.51	140.35	(ab)	
Shell Oil Company	14,410	29,775	103	16	119	0	41	15	204	670	78	0.80	0.10	1.37	a,(ab),b,c,d,e,f,m,n,o	
TEPPCO	527	1,124	6	0	6	0	5	4	200	43	1	1.07	0.71	35.59	i	
TEPSCO	35	100	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i	
Texaco Inc.	8,785	18,189	70	0	70	0	28	18	428	362	42	0.77	0.20	4.71	a,(ab),c,m,n,o	
Tosco Ref Co - Avon	714	1,500	17	5	22	0	15	0	0	567	7	2.93	0.00	0.00	f	
Tosco Ref Co - Rodeo	415	1,009	10	1	11	0	9	4	143	74	2	2.18	0.79	28.35	f	

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U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

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(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 Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

All Functions

<i>Total</i>	<i>212,850</i>	<i>435,381</i>	<i>2,723</i>	<i>187</i>	<i>2,910</i>	<i>11</i>	<i>1,402</i>	<i>707</i>	<i>16,801</i>	<i>12,253</i>	<i>1,497</i>	<i>1.34</i>	<i>0.33</i>	<i>7.72</i>	
Trans Mtn Oil Pipeline	9	20	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
TransMontaigne Pipeline	41	89	1	0	1	0	1	1	39	9	0	2.25	2.25	87.64	i
Union TX Petrochem	181	357	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	c,e,(ij),o
United Refining Co.	408	930	41	6	47	0	21	15	142	120	26	10.11	3.23	30.54	f,g,h,i
Valero Ref Co - LA	272	494	12	0	12	0	7	1	7	35	5	4.86	0.40	2.83	f
Venada National	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	a
West Shore Pipe Line ¹	23	74	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	i
Williams Energy Svcs	2,755	4,833	46	5	51	0	26	23	223	144	25	2.11	0.95	9.23	c,i
Wolverine Pipe Line ¹	54	117	1	0	1	0	0	0	0	0	1	1.71	0.00	0.00	i
Wynnewood Ref Co.	188	423	13	2	15	0	8	6	78	105	7	7.09	2.84	36.88	f

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U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Exploration

<i>Total</i>	<i>1,325</i>	<i>2,566</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>0</i>	<i>1</i>	<i>1</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>0.08</i>	<i>0.08</i>	<i>0.39</i>
ARCO	220	441	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Kerr-McGee O & G	94	195	1	0	1	0	1	1	5	0	0	1.03	1.03	5.13
Long Drilling Co.	3	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Marathon Oil Co.	328	597	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Michael D. Lillis	2	1	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Santa Fe Energy Res.	84	168	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	47	98	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	147	267	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Texaco Inc.	349	711	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Venada National	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Production

<i>Total</i>	<i>7,312</i>	<i>15,557</i>	<i>85</i>	<i>3</i>	<i>88</i>	<i>0</i>	<i>43</i>	<i>12</i>	<i>245</i>	<i>399</i>	<i>45</i>	<i>1.13</i>	<i>0.15</i>	<i>3.15</i>
ARCO	466	996	12	0	12	0	10	4	92	74	2	2.41	0.80	18.47
BWOC	5	13	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
EnergyPro Inc.	6	17	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Exxon Co. U.S.A.	2,799	6,095	25	2	27	0	13	1	5	137	14	0.89	0.03	0.16
Kerr-McGee O & G	450	937	2	0	2	0	0	0	0	0	2	0.43	0.00	0.00
Marathon Oil Co.	1,747	3,449	19	1	20	0	6	0	0	46	14	1.16	0.00	0.00
Michael D. Lillis	2	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Santa Fe Energy Res.	152	304	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	120	250	2	0	2	0	0	0	0	0	2	1.60	0.00	0.00
Shell Oil Company	1,191	2,647	18	0	18	0	9	4	127	36	9	1.36	0.30	9.60

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Exploration and Production -- Not Separated

	<i>Total</i>	<i>29,287</i>	<i>59,938</i>	<i>243</i>	<i>23</i>	<i>266</i>	<i>0</i>	<i>101</i>	<i>83</i>	<i>1,853</i>	<i>526</i>	<i>165</i>	<i>0.89</i>	<i>0.28</i>	<i>6.18</i>
ARCO	2,328	4,804	21	0	21	0	4	4	55	24	17	0.87	0.17	2.29	
Amoco Corporation	3,020	6,282	23	0	23	0	7	7	74	27	16	0.73	0.22	2.36	
BP America	1,869	3,737	na	na	14	0	3	1	na	na	11	0.75	0.05	na	
Chevron Corporation	4,068	7,726	39	1	40	0	21	21	279	8	19	1.04	0.54	7.22	
Conoco Inc.	1,390	2,891	6	0	6	0	1	0	0	6	5	0.42	0.00	0.00	
Fina Oil & Chemical	308	682	5	0	5	0	1	0	0	29	4	1.47	0.00	0.00	
Howell Petroleum	133	268	5	0	5	0	3	3	15	0	2	3.73	2.24	11.19	
Mobil Oil Corporation	1,844	3,925	21	0	21	0	11	10	614	3	10	1.07	0.51	31.29	
Occidental O&G Corp.	770	1,710	5	0	5	0	2	2	70	0	3	0.58	0.23	8.19	
Phillips Petroleum Co.	4,333	9,013	24	0	24	0	5	4	48	35	19	0.53	0.09	1.07	
Seagull Energy Corp.	19	40	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Shakespeare Oil Co.	30	57	2	0	2	0	1	1	40	0	1	7.02	3.51	140.35	
Shell Oil Company	1,961	4,003	7	12	19	0	2	2	23	0	17	0.95	0.10	1.15	
Texaco Inc.	3,925	8,249	49	0	49	0	20	11	307	341	29	1.19	0.27	7.44	

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Gas Processing

<i>Total</i>	<i>6,326</i>	<i>12,588</i>	<i>84</i>	<i>1</i>	<i>85</i>	<i>0</i>	<i>35</i>	<i>26</i>	<i>371</i>	<i>179</i>	<i>50</i>	<i>1.35</i>	<i>0.41</i>	<i>5.89</i>
Conoco Inc.	809	1,682	5	0	5	0	0	0	0	0	5	0.59	0.00	0.00
Enterprise Prod Optg	293	664	2	0	2	0	0	0	0	0	2	0.60	0.00	0.00
Kentucky Hydrocab	19	43	1	0	1	0	1	1	32	0	0	4.65	4.65	148.84
Marathon Oil Co.	143	288	2	0	2	0	2	2	168	20	0	1.39	1.39	116.67
Phillips Petroleum Co.	1,106	2,301	15	1	16	0	8	4	35	110	8	1.39	0.35	3.04
Shell Oil Company	1,715	3,499	23	0	23	0	8	7	36	1	15	1.31	0.40	2.06
Texaco Inc.	527	1,100	4	0	4	0	0	0	0	0	4	0.73	0.00	0.00
Union TX Petrochem	18	27	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Williams Energy Svcs	1,552	2,696	27	0	27	0	15	12	100	48	12	2.00	0.89	7.42

U.S. Occupational Injuries and Illnesses for 1998 **Covering Petroleum and Petrochemical Operations of Reporting Companies**

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
						Fatalities	Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Drilling

<i>Total</i>	<i>924</i>	<i>1,857</i>	<i>40</i>	<i>0</i>	<i>40</i>	<i>1</i>	<i>19</i>	<i>19</i>	<i>826</i>	<i>0</i>	<i>20</i>	<i>4.31</i>	<i>2.15</i>	<i>88.96</i>
ARCO	68	141	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Marathon Oil Co.	44	80	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	8	15	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	306	625	1	0	1	0	0	0	0	0	1	0.32	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Petrochemical Manufacturing

<i>Total</i>	<i>15,672</i>	<i>32,867</i>	<i>193</i>	<i>8</i>	<i>201</i>	<i>1</i>	<i>98</i>	<i>25</i>	<i>510</i>	<i>1,421</i>	<i>102</i>	<i>1.22</i>	<i>0.16</i>	<i>3.10</i>
Amoco Corporation	3,501	7,282	43	3	46	1	24	5	198	416	21	1.26	0.16	5.44
BP America	877	1,754	na	na	3	0	0	0	0	0	3	0.34	0.00	0.00
Chevron Corporation	2,783	5,643	33	1	34	0	11	na	na	na	23	1.21	0.00	na
Fina Oil & Chemical	615	1,430	11	0	11	0	6	0	0	34	5	1.54	0.00	0.00
Mobil Oil Corporation	1,155	2,652	14	0	14	0	8	2	90	191	6	1.06	0.15	6.79
Phillips Petroleum Co.	3,009	6,259	61	1	62	0	30	17	219	183	32	1.98	0.54	7.00
Shell Oil Company	3,624	7,628	31	3	34	0	19	1	3	597	15	0.89	0.03	0.08
Union TX Petrochem	108	219	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Refining

	<i>Total</i>	<i>49,002</i>	<i>102,956</i>	<i>927</i>	<i>56</i>	<i>983</i>	<i>5</i>	<i>482</i>	<i>170</i>	<i>3,466</i>	<i>5,379</i>	<i>496</i>	<i>1.91</i>	<i>0.34</i>	<i>6.73</i>
ARCO	1,361	3,069	34	0	34	0	22	12	217	384	12	2.22	0.78	14.14	
Amoco Corporation	4,641	9,654	86	2	88	0	39	6	314	554	49	1.82	0.12	6.51	
BP America	1,251	2,502	na	na	13	0	5	0	na	na	8	1.04	0.00	na	
CITGO Petroleum	3,172	6,598	37	1	38	0	18	11	107	366	20	1.15	0.33	3.24	
Cenex Harvest States	240	488	6	0	6	0	6	0	0	67	0	2.46	0.00	0.00	
Chevron Corporation	4,641	9,756	91	0	91	0	44	na	na	na	47	1.87	0.00	na	
Clark Ref & Mrktg	833	1,723	11	0	11	0	5	0	0	201	6	1.28	0.00	0.00	
Conoco Inc.	2,199	4,573	20	2	22	0	8	3	98	73	14	0.96	0.13	4.29	
Equilon Enterprises LLC	5,600	11,379	105	4	109	2	29	18	na	na	78	1.92	0.35	na	
Exxon Co. U.S.A.	3,622	8,352	56	20	76	0	38	8	39	246	38	1.82	0.19	0.93	
Fina Oil & Chemical	670	1,464	13	0	13	0	6	2	130	105	7	1.78	0.27	17.76	
Giant Ref Co.	222	503	6	0	6	0	1	0	0	9	5	2.39	0.00	0.00	
Lyondell-Citgo Ref	1,348	3,130	40	2	42	0	28	17	592	272	14	2.68	1.09	37.83	
Marathon Ashland Pet	3,404	6,821	77	0	77	0	40	6	187	662	37	2.26	0.18	5.48	
Mobil Oil Corporation	3,844	8,205	46	3	49	0	34	10	364	985	15	1.19	0.24	8.87	
Motiva Enterprises LLC	3,200	6,504	51	0	51	2	14	7	18	na	35	1.57	0.28	0.55	
Nat'l Coop Ref Assn	398	737	21	2	23	0	13	8	114	172	10	6.24	2.17	30.94	
Phillips Petroleum Co.	2,778	5,778	52	6	58	1	26	10	332	339	31	2.01	0.38	11.49	
Placid Refining Co.	200	415	2	na	2	na	na	na	na	na	na	0.96	na	na	
Shell Oil Company	1,024	2,090	13	0	13	0	2	0	0	36	11	1.24	0.00	0.00	
Tosco Ref Co - Avon	714	1,500	17	5	22	0	15	0	0	567	7	2.93	0.00	0.00	
Tosco Ref Co - Rodeo	415	1,009	10	1	11	0	9	4	143	74	2	2.18	0.79	28.35	

U.S. Occupational Injuries and Illnesses for 1998
Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Refining

<i>Total</i>	<i>49,002</i>	<i>102,956</i>	<i>927</i>	<i>56</i>	<i>983</i>	<i>5</i>	<i>482</i>	<i>170</i>	<i>3,466</i>	<i>5,379</i>	<i>496</i>	<i>1.91</i>	<i>0.34</i>	<i>6.73</i>
United Refining Co.	317	759	39	5	44	0	20	15	142	117	24	11.59	3.95	37.42
Valero Ref Co - LA	272	494	12	0	12	0	7	1	7	35	5	4.86	0.40	2.83
Wynnewood Ref Co.	188	423	13	2	15	0	8	6	78	105	7	7.09	2.84	36.88

U.S. Occupational Injuries and Illnesses for 1998

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							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Marketing -- Wholesale

	<i>Total</i>	<i>10,296</i>	<i>21,605</i>	<i>214</i>	<i>5</i>	<i>219</i>	<i>2</i>	<i>145</i>	<i>59</i>	<i>1,083</i>	<i>1,018</i>	<i>72</i>	<i>2.03</i>	<i>0.56</i>	<i>10.03</i>
BP America	122	244	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
BWOC	1	3	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
CITGO Petroleum	689	1,434	3	0	3	0	0	0	0	0	0	3	0.42	0.00	0.00
Equilon Enterprises LLC	730	1,623	9	1	10	0	7	3	18	68	3	1.23	0.37	2.22	
Exxon Co. U.S.A.	2,039	4,591	30	3	33	2	24	2	361	296	7	1.44	0.17	15.73	
Fina Oil & Chemical	91	188	1	0	1	0	1	0	0	14	0	1.06	0.00	0.00	
Marathon Ashland Pet	2,180	4,062	47	1	48	0	30	1	65	413	18	2.36	0.05	3.20	
Mobil Oil Corporation	1,341	3,094	40	0	40	0	24	10	127	227	16	2.59	0.65	8.21	
Motiva Enterprises LLC	675	1,384	5	0	5	0	3	3	2	na	2	0.72	0.43	0.29	
Phillips Petroleum Co.	435	905	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
United Refining Co.	24	50	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	

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							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Marketing -- Retail

<i>Total</i>	<i>26,415</i>	<i>48,859</i>	<i>389</i>	<i>10</i>	<i>399</i>	<i>1</i>	<i>234</i>	<i>128</i>	<i>3,505</i>	<i>1,484</i>	<i>164</i>	<i>1.63</i>	<i>0.53</i>	<i>14.35</i>
BP America	7,590	15,180	na	na	112	0	11	2	na	na	101	1.48	0.03	na
CITGO Petroleum	69	139	2	0	2	0	2	2	63	0	0	2.88	2.88	90.65
Equilon Enterprises LLC	330	666	4	0	4	0	1	1	na	na	3	1.20	0.30	na
Exxon Co. U.S.A.	4,310	7,103	35	1	36	1	13	3	251	95	22	1.01	0.11	7.07
Fina Oil & Chemical	378	759	20	0	20	0	16	7	182	383	4	5.27	1.84	47.96
Marathon Ashland Pet	79	148	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Mobil Oil Corporation	6,876	11,059	144	8	152	0	63	11	104	988	89	2.75	0.20	1.88
Motiva Enterprises LLC	300	615	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Phillips Petroleum Co.	2,750	5,720	17	0	17	0	2	1	13	15	15	0.59	0.03	0.46
United Refining Co.	51	106	2	1	3	0	1	0	0	3	2	5.66	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998
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							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Marketing -- Not Separated

<i>Total</i>	<i>12,343</i>	<i>25,449</i>	<i>122</i>	<i>12</i>	<i>134</i>	<i>0</i>	<i>47</i>	<i>36</i>	<i>901</i>	<i>80</i>	<i>87</i>	<i>1.05</i>	<i>0.28</i>	<i>7.08</i>
ARCO	829	1,805	8	0	8	0	7	2	107	40	1	0.89	0.22	11.86
Amoco Corporation	5,406	11,245	63	1	64	0	9	8	27	1	55	1.14	0.14	0.48
Chevron Corporation	3,096	6,136	47	11	58	0	31	26	767	39	27	1.89	0.85	25.00
Conoco Inc.	2,989	6,216	4	0	4	0	0	0	0	0	4	0.13	0.00	0.00
Seagull Energy Corp.	23	47	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

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							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Pipeline -- Liquid

	<i>Total</i>	<i>10,479</i>	<i>21,845</i>	<i>152</i>	<i>19</i>	<i>171</i>	<i>0</i>	<i>71</i>	<i>55</i>	<i>1,057</i>	<i>840</i>	<i>100</i>	<i>1.57</i>	<i>0.50</i>	<i>9.68</i>
ARCO Alaska - Kuparuk ¹	23	50	1	0	1	0	1	1	65	0	0	4.00	4.00	260.00	
ARCO Alaska - Oliktok ¹	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Alyeska Pipeline Srv	846	1,711	10	7	17	0	5	4	61	65	12	1.99	0.47	7.13	
Amoco Corporation	600	1,686	6	1	7	0	4	4	50	0	3	0.83	0.47	5.93	
Amoco Pipeline Co. ¹	600	1,686	6	1	7	0	4	4	50	0	3	0.83	0.47	5.93	
Anschutz Ranch East PL	5	13	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Belle Fourche Pipeline	77	154	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Buckeye Pipe Line Co.	580	1,350	8	0	8	0	2	2	13	77	6	1.19	0.30	1.93	
Butte Pipeline Co.	16	37	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
CITGO Petroleum	120	249	1	0	1	0	0	0	0	0	1	0.80	0.00	0.00	
CITGO Pipeline Co. ¹	34	99	1	0	1	0	0	0	0	0	1	2.02	0.00	0.00	
CITGO Prod Pipeline ¹	31	76	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Calnev Pipe Line Co.	70	134	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Central FLA Pipeline	17	34	1	0	1	0	1	1	1	6	0	5.88	5.88	5.88	
Chicap Pipe Line Co.	15	30	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Collins Pipeline Co.	12	26	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Colonial Pipeline Co.	678	1,390	2	0	2	0	1	1	4	0	1	0.29	0.14	0.58	
Conoco Inc.	523	1,089	4	0	4	0	2	0	0	30	2	0.73	0.00	0.00	
Dome Pipeline Corp.	53	104	2	0	2	0	1	0	0	16	1	3.85	0.00	0.00	
Enbridge (U.S.) Inc.	356	732	8	1	9	0	2	0	0	42	7	2.46	0.00	0.00	
Enbridge Pipelines (ND)	33	69	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	

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U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

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Pipeline -- Liquid

	<i>Total</i>	<i>10,479</i>	<i>21,845</i>	<i>152</i>	<i>19</i>	<i>171</i>	<i>0</i>	<i>71</i>	<i>55</i>	<i>1,057</i>	<i>840</i>	<i>100</i>	<i>1.57</i>	<i>0.50</i>	<i>9.68</i>
Enterprise Prod Optg	72	159	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Equilon Enterprises LLC	1,398	2,862	12	2	14	0	6	5	307	271	8	0.98	0.35	21.45	
Equilon Pipeline Co. ¹	1,398	2,862	12	2	14	0	6	5	307	271	8	0.98	0.35	21.45	
Ewing Bank Pipeline	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Explorer Pipeline Co.	130	277	2	0	2	0	2	2	86	0	0	1.44	1.44	62.09	
Exxon Pipeline Co.	430	960	1	1	2	0	1	0	0	25	1	0.42	0.00	0.00	
Fina Oil & Chemical	39	88	2	0	2	0	1	1	5	6	1	4.55	2.27	11.36	
Gensis Pipeline	44	100	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Interstate Energy Co.	26	56	1	0	1	0	0	0	0	0	1	3.57	0.00	0.00	
LOOP LLC	124	248	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Marathon Ashland Pet	547	1,061	2	0	2	0	1	1	4	5	1	0.38	0.19	0.75	
Mobil East of Rockies ¹	318	640	1	0	1	0	1	0	0	14	0	0.31	0.00	0.00	
Mobil PL (New Eng.) ¹	13	29	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Nat'l Coop Ref Assn	157	323	6	0	6	0	2	2	19	41	4	3.72	1.24	11.77	
Oiltanking Houston	10	15	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Olympic Pipe Line Co.	66	137	2	0	2	0	2	2	24	0	0	2.92	2.92	35.04	
Phillips Petroleum Co	660	1,376	17	0	17	0	8	3	8	23	9	2.47	0.44	1.16	
Phillips Pipe Line Co ¹	660	1,376	17	0	17	0	8	3	8	23	9	2.47	0.44	1.16	
Plains All American	121	250	6	0	6	0	4	2	2	82	2	4.80	1.60	1.60	
Plantation Pipe Line	275	531	7	0	7	0	3	3	18	0	4	2.64	1.13	6.78	
Portland Pipe Line	30	60	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	

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Pipeline -- Liquid

	<i>Total</i>	<i>10,479</i>	<i>21,845</i>	<i>152</i>	<i>19</i>	<i>171</i>	<i>0</i>	<i>71</i>	<i>55</i>	<i>1,057</i>	<i>840</i>	<i>100</i>	<i>1.57</i>	<i>0.50</i>	<i>9.68</i>
Razorback Pipeline Co	2	5	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seadrift Pipeline Corp	51	107	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
TEPPCO	527	1,124	6	0	6	0	5	4	200	43	1	1.07	0.71	35.59	
TEPSCO	35	100	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Trans Mtn Oil Pipeline	9	20	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
TransMontaigne Pipeline	41	89	1	0	1	0	1	1	39	9	0	2.25	2.25	87.64	
United Refining Co.	16	15	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
West Shore Pipe Line ¹	23	74	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	
Williams Energy Svcs	1,203	2,137	19	5	24	0	11	11	123	96	13	2.25	1.03	11.51	
Wolverine Pipe Line ¹	54	117	1	0	1	0	0	0	0	0	1	1.71	0.00	0.00	

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Pipeline -- Gas

<i>Total</i>	<i>270</i>	<i>516</i>	<i>7</i>	<i>0</i>	<i>7</i>	<i>0</i>	<i>3</i>	<i>3</i>	<i>108</i>	<i>100</i>	<i>4</i>	<i>2.71</i>	<i>1.16</i>	<i>41.86</i>
Questar Pipeline Co.	48	95	3	0	3	0	1	1	10	0	2	6.32	2.11	21.05
Seadrift Pipeline Corp.	41	84	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	51	106	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

Pipeline -- Not Separated

<i>Total</i>	<i>1,713</i>	<i>3,638</i>	<i>22</i>	<i>4</i>	<i>26</i>	<i>0</i>	<i>13</i>	<i>6</i>	<i>132</i>	<i>131</i>	<i>13</i>	<i>1.43</i>	<i>0.33</i>	<i>7.26</i>
ARCO	658	1,515	11	0	11	0	7	2	124	112	4	1.45	0.26	16.37
ARCO Pipe Line Co. ¹	658	1,515	11	0	11	0	7	2	124	112	4	1.45	0.26	16.37
BWOC	2	5	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Chevron Corporation	625	1,225	8	4	12	0	4	3	7	5	8	1.96	0.49	1.14
Chevron Pipeline Co. ¹	625	1,225	8	4	12	0	4	3	7	5	8	1.96	0.49	1.14
Mobil Oil Corporation	385	805	3	0	3	0	2	1	1	14	1	0.75	0.25	0.25
Seagull Energy Corp.	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Union TX Petrochem	41	84	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

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U.S. Occupational Injuries and Illnesses for 1998

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Marine -- Tanker

<i>Total</i>	<i>223</i>	<i>662</i>	<i>12</i>	<i>1</i>	<i>13</i>	<i>0</i>	<i>7</i>	<i>0</i>	<i>0</i>	<i>34</i>	<i>6</i>	<i>3.93</i>	<i>0.00</i>	<i>0.00</i>
Marathon Ashland Pet	223	662	12	1	13	0	7	0	0	34	6	3.93	0.00	0.00

Marine -- Inland

<i>Total</i>	<i>230</i>	<i>835</i>	<i>3</i>	<i>0</i>	<i>3</i>	<i>0</i>	<i>3</i>	<i>1</i>	<i>14</i>	<i>2</i>	<i>0</i>	<i>0.72</i>	<i>0.24</i>	<i>3.35</i>
Mobil Oil Corporation	230	835	3	0	3	0	3	1	14	2	0	0.72	0.24	3.35

Marine -- Not Separated

<i>Total</i>	<i>1,799</i>	<i>4,306</i>	<i>62</i>	<i>1</i>	<i>63</i>	<i>1</i>	<i>30</i>	<i>22</i>	<i>1,172</i>	<i>179</i>	<i>32</i>	<i>2.93</i>	<i>1.07</i>	<i>54.44</i>
ARCO	252	1,019	18	0	18	0	4	4	69	121	14	3.53	0.79	13.54
Amoco Corporation	189	393	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Conoco Inc.	146	303	2	0	2	0	2	1	130	13	0	1.32	0.66	85.81
Exxon Co. U.S.A.	833	1,833	13	1	14	0	8	5	626	45	6	1.53	0.55	68.30

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Research and Development

<i>Total</i>	<i>6,109</i>	<i>12,237</i>	<i>40</i>	<i>5</i>	<i>45</i>	<i>0</i>	<i>13</i>	<i>11</i>	<i>177</i>	<i>128</i>	<i>32</i>	<i>0.74</i>	<i>0.18</i>	<i>2.89</i>
ARCO	417	836	1	1	2	0	0	0	0	0	2	0.48	0.00	0.00
Chevron Corporation	982	1,876	6	3	9	0	3	2	31	54	6	0.96	0.21	3.31
Conoco Inc.	254	528	1	0	1	0	0	0	0	0	1	0.38	0.00	0.00
Equilon Enterprises LLC	330	672	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Fina Oil & Chemical	134	272	2	0	2	0	2	1	9	14	0	1.47	0.74	6.62
Marathon Oil Co.	161	288	4	0	4	0	2	2	64	48	2	2.78	1.39	44.44
Mobil Oil Corporation	1,628	3,271	12	0	12	0	4	4	32	12	8	0.73	0.24	1.96
Phillips Petroleum Co.	1,195	2,486	2	0	2	0	0	0	0	0	2	0.16	0.00	0.00
Seagull Energy Corp.	41	86	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	748	1,477	7	1	8	0	1	1	15	0	7	1.08	0.14	2.03
Texaco Inc.	187	381	4	0	4	0	1	1	26	0	3	2.10	0.52	13.65

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

General Services

<i>Total</i>	<i>6,085</i>	<i>12,295</i>	<i>31</i>	<i>7</i>	<i>38</i>	<i>0</i>	<i>17</i>	<i>15</i>	<i>201</i>	<i>213</i>	<i>21</i>	<i>0.62</i>	<i>0.24</i>	<i>3.27</i>
ARCO	13	27	1	0	1	0	0	0	0	0	1	7.41	0.00	0.00
BWOC	3	6	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
CITGO Petroleum	762	1,585	4	2	6	0	1	1	6	0	5	0.76	0.13	0.76
Chevron Corporation	1,038	1,939	9	5	14	0	9	9	123	73	5	1.44	0.93	12.69
Conoco Inc.	299	622	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Exxon Co. U.S.A.	515	1,071	4	0	4	0	2	0	0	12	2	0.75	0.00	0.00
Marathon Oil Co.	79	144	2	0	2	0	1	1	34	60	1	2.78	1.39	47.22
Oiltanking Houston	47	70	1	0	1	0	0	0	0	0	1	2.86	0.00	0.00
Phillips Petroleum Co.	538	1,121	3	0	3	0	2	2	19	36	1	0.54	0.36	3.39
Questar Pipeline Co.	69	155	4	0	4	0	2	2	19	32	2	5.16	2.58	24.52
Shell Oil Company	2,420	4,938	3	0	3	0	0	0	0	0	3	0.12	0.00	0.00
Texaco Inc.	301	615	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998

Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Administration, Engineering and Other

<i>Total</i>	<i>27,040</i>	<i>54,805</i>	<i>96</i>	<i>32</i>	<i>128</i>	<i>0</i>	<i>40</i>	<i>35</i>	<i>1,175</i>	<i>140</i>	<i>88</i>	<i>0.47</i>	<i>0.13</i>	<i>4.29</i>
ARCO	2,236	4,584	3	0	3	0	1	1	1	0	2	0.13	0.04	0.04
Amoco Corporation	418	870	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
BWOC	2	4	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Chevron Corporation	3,605	6,805	5	19	24	0	8	8	466	0	16	0.71	0.24	13.70
Chicap Pipe Line Co.	6	11	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Conoco Inc.	1,887	3,923	3	0	3	0	1	1	125	0	2	0.15	0.05	6.37
Enterprise Prod Optg	129	268	1	0	1	0	1	1	152	0	0	0.75	0.75	113.43
Equilon Enterprises LLC	1,400	2,992	17	0	17	0	10	8	171	113	7	1.14	0.53	11.43
Exxon Co. U.S.A.	2,315	5,142	2	9	11	0	0	0	0	0	11	0.43	0.00	0.00
Fina Oil & Chemical	633	1,240	4	1	5	0	2	1	1	5	3	0.81	0.16	0.16
Marathon Ashland Pet	1,312	2,342	10	0	10	0	0	0	0	0	10	0.85	0.00	0.00
Marathon Oil Co.	880	1,526	1	0	1	0	0	0	0	0	1	0.13	0.00	0.00
Mobil Oil Corporation	3,350	6,700	13	0	13	0	2	2	13	0	11	0.39	0.06	0.39
Motiva Enterprises LLC	760	1,535	1	0	1	0	0	0	0	0	1	0.13	0.00	0.00
Occidental O&G Corp.	244	834	6	1	7	0	1	1	6	0	6	1.68	0.24	1.44
Phillips Petroleum Co.	997	2,043	1	1	2	0	1	1	90	0	1	0.20	0.10	8.81
Portland Pipe Line	18	33	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Questar Pipeline Co.	11	18	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Santa Fe Energy Res.	160	320	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	181	376	3	0	3	0	1	1	5	0	2	1.60	0.53	2.66
Shell Oil Company	1,274	2,601	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Texaco Inc.	3,496	7,133	13	0	13	0	7	6	95	21	6	0.36	0.17	2.66

U.S. Occupational Injuries and Illnesses for 1998
Covering Petroleum and Petrochemical Operations of Reporting Companies

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Administration, Engineering and Other

<i>Total</i>	<i>27,040</i>	<i>54,805</i>	<i>96</i>	<i>32</i>	<i>128</i>	<i>0</i>	<i>40</i>	<i>35</i>	<i>1,175</i>	<i>140</i>	<i>88</i>	<i>0.47</i>	<i>0.13</i>	<i>4.29</i>
Union TX Petrochem	14	27	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998
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 Name	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
							Cases Involving Days Away From Work Plus Days of Restricted Activity	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 Offshore Functions

<i>Total</i>	<i>3,506</i>	<i>7,915</i>	<i>54</i>	<i>2</i>	<i>56</i>	<i>0</i>	<i>29</i>	<i>14</i>	<i>403</i>	<i>153</i>	<i>27</i>	<i>1.42</i>	<i>0.35</i>	<i>10.18</i>	
ARCO	246	522	8	0	8	0	6	3	82	37	2	3.07	1.15	31.42	b
Amoco Corporation	278	578	5	0	5	0	1	1	na	0	4	1.73	0.35	na	b
Conoco Inc.	136	283	3	0	3	0	1	0	0	6	2	2.12	0.00	0.00	(abd)
Ewing Bank Pipeline	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	a
Exxon Co. U.S.A.	607	1,429	6	0	6	0	3	0	0	78	3	0.84	0.00	0.00	b,d
Howell Petroleum	11	24	2	0	2	0	2	2	14	0	0	16.67	16.67	116.67	(abd)
Kerr-McGee O & G	165	331	2	0	2	0	0	0	0	0	2	1.21	0.00	0.00	b
Marathon Oil Co.	125	438	3	0	3	0	3	0	0	19	0	1.37	0.00	0.00	(abd)
Occidental O&G Corp.	68	199	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	(abd)
Santa Fe Energy Res.	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	b
Seagull Energy Corp.	2	5	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	b
Shell Oil Company	1,151	2,505	14	0	14	0	5	2	127	0	9	1.12	0.16	10.14	(abd),b

U.S. Occupational Injuries and Illnesses for 1998
Covering Petroleum and Petrochemical Operations of Reporting Companies
Offshore Functions

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Offshore Exploration

<i>Total</i>	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Ewing Bank Pipeline	4	14	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

Offshore Production

<i>Total</i>	2,124	4,689	34	0	34	0	15	6	209	115	19	1.45	0.26	8.91
ARCO	246	522	8	0	8	0	6	3	82	37	2	3.07	1.15	31.42
Amoco Corporation	278	578	5	0	5	0	1	1	na	0	4	1.73	0.35	na
Exxon Co. U.S.A.	546	1,282	6	0	6	0	3	0	0	78	3	0.94	0.00	0.00
Kerr-McGee O & G	165	331	2	0	2	0	0	0	0	0	2	1.21	0.00	0.00
Santa Fe Energy Res.	1	2	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Seagull Energy Corp.	2	5	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	864	1,919	13	0	13	0	5	2	127	na	8	1.35	0.21	13.24

Offshore Drilling

<i>Total</i>	243	519	1	0	1	0	0	0	0	0	1	0.39	0.00	0.00
Exxon Co. U.S.A.	61	147	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	182	372	1	0	1	0	0	0	0	na	1	0.54	0.00	0.00

U.S. Occupational Injuries and Illnesses for 1998
Covering Petroleum and Petrochemical Operations of Reporting Companies
Offshore Functions

Company Name	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	Total Cases	Fatal plus Days Away From Work Cases	Lost Work Days -- Days Away From Work
							Cases Involving Days Away From Work Plus Days of Restricted Activity	Cases Involving Days Away From Work	Number of Days Away From Work	Number of Days of Restricted Activity				

Combination of Above -- Not Separated

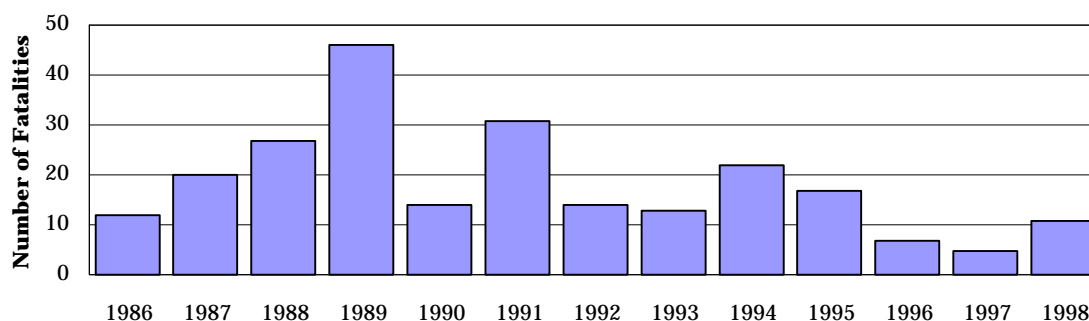
<i>Total</i>	<i>1,135</i>	<i>2,693</i>	<i>19</i>	<i>2</i>	<i>21</i>	<i>0</i>	<i>14</i>	<i>8</i>	<i>194</i>	<i>38</i>	<i>7</i>	<i>1.56</i>	<i>0.59</i>	<i>14.41</i>
Conoco Inc.	136	283	3	0	3	0	1	0	0	6	2	2.12	0.00	0.00
Howell Petroleum	11	24	2	0	2	0	2	2	14	0	0	16.67	16.67	116.67
Marathon Oil Co.	125	438	3	0	3	0	3	0	0	19	0	1.37	0.00	0.00
Occidental O&G Corp.	68	199	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00
Shell Oil Company	105	214	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00

1998—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1998 As Reported to the American Petroleum Institute

Summary of Fatal Injuries in the Petroleum Industry as Reported to the American Petroleum Institute for 1998

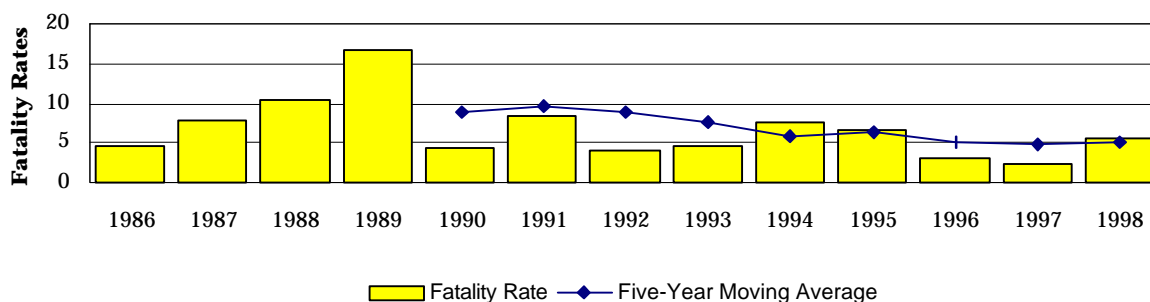
One hundred and eighteen oil and gas companies and their subsidiaries, employing 212,850 workers reported 11 on-duty fatal accidents during 1998. This is equivalent to one fatality for every 19,350 workers employed. Comparatively, in 1997, there was one fatality for every 46,266 employees. The graph below shows the number of fatalities reported in this publication for the last 13 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 rate¹ for the past 13 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*² 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)



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

² 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.

**1998—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1998
As Reported to the American Petroleum Institute**

FATALITIES

Seven companies reported experiencing at least one fatality during 1998. Six of them submitted detailed information about the circumstances surrounding eight of the eleven on-duty fatalities that were 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.

DRILLING

09/07/98 — Fall

A crew was preparing rig down and disassembled drilling rig for movement to another well site. Two crewmembers ascended derrick to hook up cable for the lowering of the derrick. The victim was inexperienced at this procedure. As the line was cut loose before tension was applied, the line started moving and struck the victim causing him to fall approximately 75 feet to the rig floor.

The immediate cause of the accident was the line movement striking the employee. The basic cause was 1) lack of task knowledge, 2) failure to wear fall arrest equipment, and 3) lack of job planning.

Similar accidents can be prevented by: 1) having knowledge of the task, 2) following the rules and procedures for the task, 3) communication among the persons involved, and 4) knowledge and use of proper fall arrest equipment.

REFINING

02/08/98 — Toxic Gas

The employee was found unconscious. He was later pronounced dead at the hospital. The employee was preparing the pig launcher system that is used to clean a propane pipeline, but he failed to completely block in the pig launcher system from the flare system by closing a depressurizing valve. This failure permitted gas that contained hydrogen sulfide from the flare system to escape to the atmosphere.

09/13/98 — Chemical Exposure

The employee, a stock spec/pumper, was splashed with sulfuric acid and died as a result of complications of the resultant injury.

10/16/98 — Struck By Equipment

The employee was working in the switchyard as an engine operator. The fatality occurred when the engine operator was working with two other employees to move a string of rail cars that located on refinery property. The engine operator radioed the other crewmembers to move the string of rail cars. The crew did so in a smooth and normal manner. As the train was moving, one of the crewmembers saw the engine operator's body lying next to the rail tracks.

1998—Summary of On-Duty Fatal Injuries in the Petroleum Industry—1998
As Reported to the American Petroleum Institute

11/25/98 — Fire

The refinery experienced a severe windstorm that caused the entire refinery to lose its electrical power and steam. At the time of the power and steam loss, one of the delayed coking unit (DCU) drums was receiving feed charge. When the bottom head to the partially filled coke drum was opened, the hydrocarbon liquids that were released were above the auto ignition temperature and were the likely source of ignition for the resulting fire. Two plant employees died due to smoke inhalation.

Marine — Tanker

08/27/98 — Struck By Equipment

A vessel was being docked when the line parted under tension and struck a seaman in the head. Such an accident can be prevented by avoiding the “Line of Fire” when docking vessels and when lines are being taken up.

Appendix A

1998 Summary of U.S. Occupational Injuries, Illnesses and Fatalities in the Petroleum Industry

List of Participants

ARCO
ARCO Alaska Inc - Kuparuk Pipeline¹
ARCO Alaska Inc - Oliktok Pipeline¹
ARCO Pipe Line Company¹
Alyeska Pipeline Service Co
Amerada Hess Corporation
American Refining Group Inc
Amoco Corporation
Amoco Pipeline Company¹
Anschutz Ranch East Pipeline Inc
BP America
BWOC
Belle Fourche Pipeline Company
Buckeye Pipe Line Company
Burlington Resources
Butte Pipeline Company
CITGO Petroleum Corporation
CITGO Pipeline Co.¹
CITGO Products Pipeline Co.¹
Calnev Pipe Line Company (GATX)
Carnegie Natural Gas Co
Caza Drilling Inc.
Cenex Harvest States
Cenex Pipeline Co
Central Florida Pipeline Corp. (GATX)
Chermac Energy Corporation
Chevron Corporation
Chevron Pipeline Company¹
Chicap Pipe Line Company
Ciniza Pipe Line Company
Clark Refining & Marketing
Collins Pipeline Company
Colonial Pipeline Company
Conoco Inc
Cross Oil Refining & Marketing Inc.
D&R Oil

¹ A subsidiary whose numbers are included in the report
of a larger company. Subsidiary numbers are not included
in the totals.

Appendix A

1998 Summary of U.S. Occupational Injuries, Illnesses and Fatalities in the Petroleum Industry

List of Participants

Devon Energy Corporation
Dixie Pipeline Company
Dome Pipeline Corp
Eberly & Meade Inc
Elf Exploration Inc
Enbridge (U.S.) Inc
Enbridge Pipelines (North Dakota) Inc
EnergyPro Inc
Enterprise Products Operating LP
Equilon Enterprises LLC
Equilon Pipeline Company¹
Equistar Pipeline Operations
Ergon Oil Purchasing Inc
Ergon Trucking Inc
Ewing Bank Pipeline Co
Explorer Pipeline Company
Exxon Company U.S.A.
Exxon Pipeline Company
Fina Oil & Chemical Co
Fina Oil & Chemical Co (Pipelines)¹
Flying J Refinery/Big West Oil
Genesis Pipeline
Giant Refining Company
Green Energy Inc
Howell Petroleum Corporation
Hunt Oil Company
Interstate Energy Co.
Justiss Oil Co Inc
Kaneb Pipe Line Company
Kentucky Hydrocarbons
Kerr-McGee Oil & Gas Corp.
LOOP LLC
Long Drilling Company
Lyondell-Citgo Refining Co. L.P.
MR Drilling Company
Marathon Ashland Petroleum LLC

¹ A subsidiary whose numbers are included in the report
of a larger company. Subsidiary numbers are not included
in the totals.

Appendix A

1998 Summary of U.S. Occupational Injuries, Illnesses and Fatalities in the Petroleum Industry

List of Participants

Marathon Oil Company
Michael D. Lillis
Miller Oil Company
Mobil East of the Rockies Crude Pipeline¹
Mobil Oil Corporation
Mobil Pipe Line Co. /New England Business Unit¹
Motiva Enterprises LLC
National Cooperative Refinery Assn
Navajo Refining Co. (Pipeline Divison)
Occidental Oil & Gas Corporation
Oiltanking Houston Inc.
Olympic Pipe Line Co.
Pennzoil Products Co
Phillips Petroleum Company
Phillips Pipe Line Company¹
Placid Refining Company LLC
Plains All American Inc.
Plantation Pipe Line Company
Portland Pipe Line Corp.
Questar Pipeline Company
Razorback Pipeline Company
Santa Fe Energy Resources Inc.
Seadrift Pipeline Corp.
Seagull Energy Corporation
Shakespeare Oil Company Inc
Shell Oil Company
TEPPCO
TEPSCO/Tellepsen Pipeline Services Co
Texaco Inc.
Thums Long Beach Company
Tosco Refining Co - Avon
Tosco Refining Co - Rodeo
Trans Mountain Oil Pipeline Corp Ltd
TransMontaigne Pipeline Inc.
UOP
Union Texas Petrochemicals Corp

¹ A subsidiary whose numbers are included in the report
of a larger company. Subsidiary numbers are not included
in the totals.

Appendix A

1998 Summary of U.S. Occupational Injuries, Illnesses and Fatalities in the Petroleum Industry

List of Participants

United Refining Co.
Valero Refining Co - Louisiana
Venada National
W.L. Belden Trust
West Shore Pipe Line¹
Williams Energy Services
Withrow Engineering Inc
Wolverine Pipe Line Company¹
Wynnewood Refining Co
Wyoming Pipeline Company

¹ A subsidiary whose numbers are included in the report
of a larger company. Subsidiary numbers are not included
in the totals.

1998 Occupational, Injuries, Illnesses, and Fatalities in the Petroleum Industry

Appendix B

Shift Information for Offshore Employees

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

Company Name	Hours Worked or Exposure Hours per Day	Duty Cycle	
	While on Duty	Days On	Days Off
ARCO	12	7	7
Amoco Corporation	12	7	7
Conoco Inc.	12	7	7
Ewing Bank Pipeline	16	7	7
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