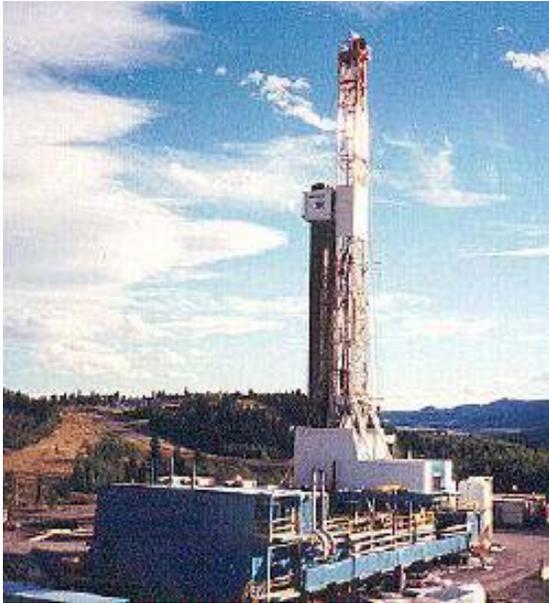




Profile: Oil and Gas Well Drilling and Servicing



Office of General Industry Enforcement

Industry Group 138 – Oil and Gas Field Services

Process Description

The oil and gas well drilling and servicing industry was born in the United States in 1859 when the Drake Well outside Titusville, PA first struck oil. Since then this industry has evolved to become a vital part of the petroleum industry.

Oil and gas well drilling and servicing is part of Major Group 13 in the Standard Industrial Classifications (SIC). This classification is further defined by three subdivisions, including Industry Group 138 – Oil and Gas Field Services.

Industry Group 138 includes SIC 1381 – Drilling Oil and Gas Wells; SIC 1382 – Oil and Gas Field Exploration Services; and SIC 1389 Oil and Gas Field Services, Not Elsewhere Classified.

SIC 1381 includes establishments primarily engaged in drilling wells for oil or gas field operations for others on a contract or fee basis. This industry includes contractors that specialize in the following:

- Directional drilling of oil and gas wells on a contract basis
- Redrilling oil and gas wells on a contract basis
- Reworking oil and gas wells on a contract basis
- Spudding in oil and gas wells on a contract basis
- Well drilling gas, oil, and water intake: on a contract basis
- SIC 1382 includes establishments primarily engaged in performing geophysical, geological, and other exploration services for oil and gas on a contract or fee basis.
- Aerial geophysical exploration, oil and gas field on a contract basis
- Exploration, oil and gas field on a contract basis
- Geological exploration, oil and gas field on a contract basis
- Geophysical exploration, oil and gas field on a contract basis
- Seismograph surveys, oil and gas field on a contract basis

SIC 1389 includes establishments primarily engaged in performing oil and gas field services, not elsewhere classified, for others on a contract or fee basis. Services included are excavating slush pits and cellars; gradings and building of foundations at well locations; well surveying; running, cutting, and pulling casings tubes, and rods; cementing wells; shooting wells; perforating well casings; acidizing and chemically treating wells; and cleaning out, bailing, and swabbing wells. Establishments that have complete responsibility for operating oil and gas wells for others on a contract or fee basis are classified according to the product extracted rather than as oil and gas field services.

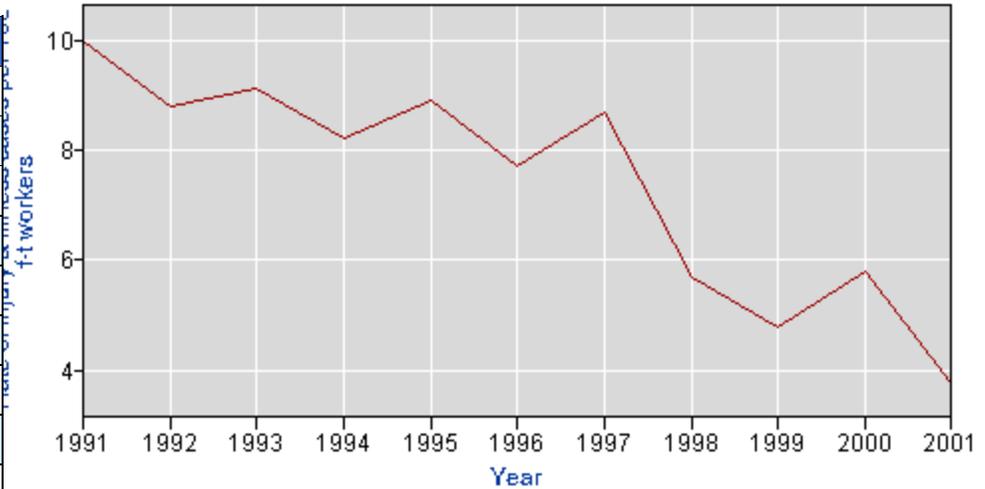
- Acidizing wells on a contract basis
- Bailing wells on a contract basis
- Building oil and gas well foundations on a contract basis
- Cementing oil and gas well casings on a contract basis
- Chemically treating wells on a contract basis
- Cleaning lease tanks, oil and gas field on a contract basis
- Cleaning wells on a contract basis
- Derrick building, repairing, and dismantling oil and gas-on a contract basis
- Dismantling of oil well rigs (oil field service) on a contract basis
- Erecting lease tanks, oil and gas field on a contract basis
- Excavating slush pits and cellars on a contract basis

- Fishing for tools, oil and gas field on a contract basis
- Gas compressing natural gas at the field on a contract basis
- Gas well rig building, repairing, and dismantling on a contract basis
- Grading oil and gas well foundations on a contract basis
- Hard banding service on a contract basis
- Hot oil treating of oil field tanks on a contract basis
- Hot shot service on a contract basis
- Hydraulic fracturing wells on a contract basis
- Impounding and storing salt water in connection with petroleum
- Lease tanks, oil and gas field: erecting, cleaning, and repairing on a contract basis
- Logging wells on a contract basis
- Mud service, oil field drilling on a contract basis
- Oil sampling service for oil companies on a contract basis
- Oil well logging on a contract basis
- Perforating well casings on a contract basis
- Pipe testing service, oil and gas field: on a contract basis
- Plugging and abandoning wells on a contract basis
- Pumping of oil and gas wells on a contract basis
- Removal of condensate gasoline from field gathering lines on a contract basis
- Roustabout service on a contract basis
- Running, cutting, and pulling casings, tubes, and rods: oil and
- Servicing oil and gas wells on a contract basis
- Shooting wells on a contract basis
- Shot-hole drilling service, oil and gas field: on a contract basis
- Surveying wells on a contract basis, except seismographic
- Swabbing wells: on a contract basis

BLS Profile Total Recordable Case Rate (Industry Group – 138)

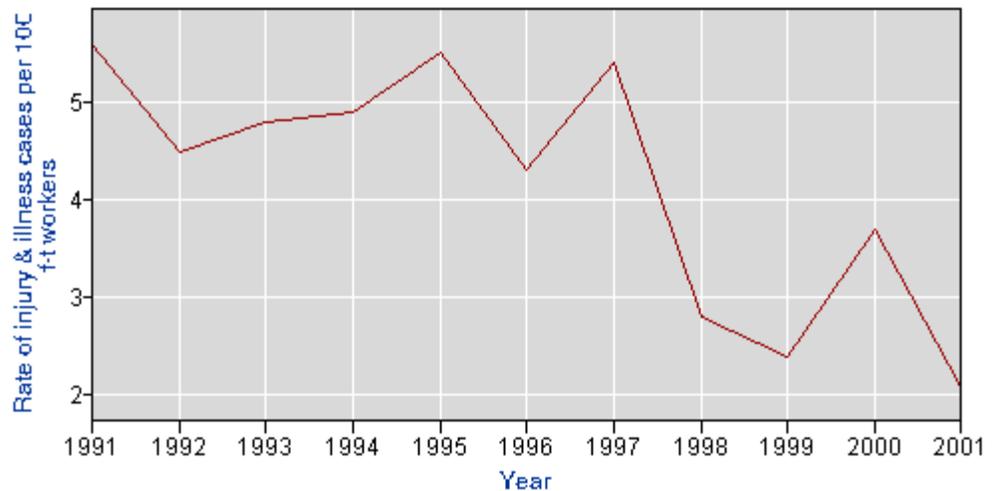
Year	Annual
1991	10.0(F)
1992	8.8
1993	9.1
1994	8.2
1995	8.9
1996	7.7
1997	8.7
1998	5.7
1999	4.8
2000	5.8
2001	3.8

F: Includes fatalities



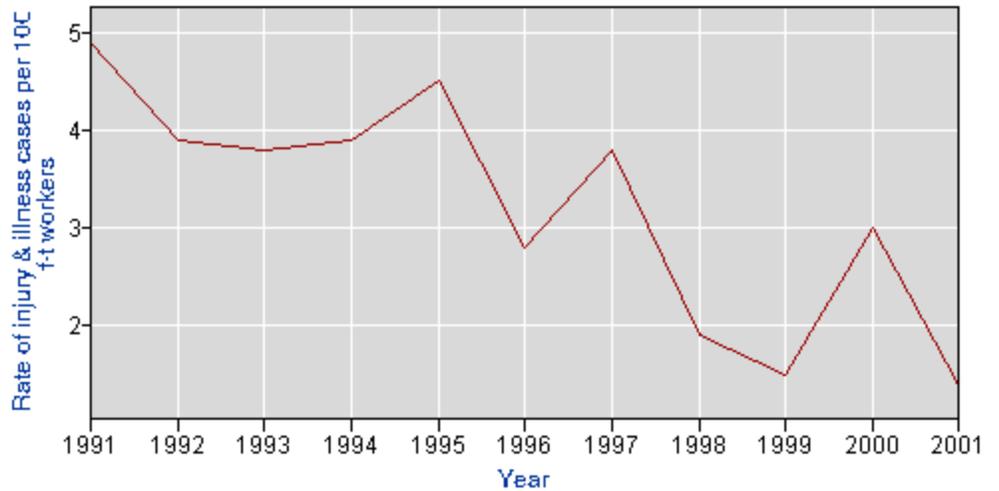
Lost Workday Case Rate (Industry Group – 138)

Year	Annual
1991	5.6
1992	4.5
1993	4.8
1994	4.9
1995	5.5
1996	4.3
1997	5.4
1998	2.8
1999	2.4
2000	3.7
2001	2.1



Cases with Days Away Rate (Industry Group – 138)

Year	Annual
1991	4.9
1992	3.9
1993	3.8
1994	3.9
1995	4.5
1996	2.8
1997	3.8
1998	1.9
1999	1.5
2000	3.0
2001	1.4



Fatality Rate for Industry Group 138 (2001): 27.8
National Average – All Industries (2001): 4.3

Source: Bureau of Labor Statistics (National data)

Fatality rates are number of fatalities per 100,000 workers.

National Summary by Region NAICS 213111 & 213112

Regions	Establishments with 10 or more employees		Number of FY 2003 Inspections	
	Establishments	Employees	Total	Programmed
1	23	NA	0	0
2	63	NA	0	0
3	358	NA	2	0
4	421	NA	2	0
5	445	NA	0	0
6	6,300	NA	102	49
7	542	NA	1	0
8	787	NA	17	0
9	NA	NA	0	0
10	13	NA	6	2

Equivalent Industry Group 138

Regions	Establishments with 10 or more employees		Number of FY 2003 Inspections	
	Establishments	Employees	Total	Programmed
1	23	NA	0	0
2	63	NA	0	0
3	358	NA	2	0
4	421	NA	3	0
5	445	NA	0	0
6	6,300	NA	101	47
7	542	NA	1	0
8	787	NA	16	0
9	NA	NA	0	0
10	13	NA	8	8

NA = Data not available

Establishment and employment counts come from Dunn & Bradstreet, June 2003.

Inspection data from IMIS database.

Inspection and establishment counts include only Federal Area Office inspections and establishments in Federal OSHA states.

Average Case and Demographic Characteristics

Average cases per year, 1995 – 2000		5,657
Demographics of worker	Sex	98.5% men
	Age	14.9% ages 20-24 38.3% ages 25-34 27.5% ages 35-44 15.1% ages 45-54
	Length of service with employer	51.9% less than one year 26.7% 1-5 years
	Race/ethnic origin	57.9% white non-Hispanic 24.6% Hispanic – any race
Characteristics of injury/illness	Days away from work	18.1% 1-5 days 34.6% 6-30 days 37.4% 31 or more days
	Nature of injury/illness	32.9% sprains/strains 18.9% fractures 15.9% “all other” natures 11.3% bruises/contusions
	Part of body affected	26.0% arms/wrists/hands/fingers 22.8% legs/knees/feet/toes 20.2% back
	Source of injury/illness	31.1% parts/materials 15.1% floors/ground surfaces 14.0% “all other” sources 9.9% machinery
	Event or exposure	23.0% struck by object 18.8% overexertion 12.2% caught in object/equipment/material

Source: OSHA Office of Statistical Analysis compilation of BLS data

Note: The percentages on this table do not sum to 100%. Only the most frequently coded characteristics are listed. The “All Other” category should not be interpreted as being all inclusive of the categories not listed above.

**Inspection Summary
FY 2003
Federal OSHA Inspection Data
Industry Group 138**

Federal Data Only	I	II	III	IV	V	VI	VII	VIII	IX	X	Total
Total Inspections	0	0	2	3	0	101	1	16	0	8	131
Safety	0	0	2	2	0	79	1	15	0	8	99
Health	0	0	0	1	0	22	0	1	0	0	24
Inspections by Type											
Unprogrammed											
Accidents	0	0	2	3	0	54	1	16	0	0	76
Complaints	0	0	0	1	0	31	1	6	0	0	39
Referrals	0	0	2	2	2	10	0	3	0	0	17
Monitoring	0	0	0	0	0	2	0	3	0	0	5
Variance	0	0	0	0	0	0	0	0	0	0	0
Follow-Up	0	0	0	0	0	0	0	0	0	0	0
Unprog. Related	0	0	0	0	0	3	0	0	0	0	3
Other	0	0	0	0	0	8	0	4	0	0	12
	0	0	0	0	0	0	0	0	0	0	0
Programmed											
Planned	0	0	0	0	0	47	0	0	0	8	55
Prog. Related	0	0	1	0	0	47	0	0	0	2	49
Other	0	0	0	0	0	0	0	0	0	6	6
	0	0	0	0	0	0	0	0	0	0	0

Source: IMIS Database

Top 10 Violations Cited

Standard	#Cited	#Insp	Description
5(a)(1)	57	31	General Duty Clause (Section of OSHA Act)
1910.146	26	5	Permit-Required Confined Spaces
1910.23	18	13	Guarding Floor & Wall Openings & Holes
1910.132	18	14	Personal Protective Equipment, General
1910.151	15	13	Medical Services & First Aid
1910.134	12	6	Respiratory Protection
1910.157	11	5	Portable Fire Extinguishers
1910.147	6	4	The Control of Hazardous Energy, Lockout/Tagout
1910.184	6	3	Slings
1910.212	6	6	Machines, General Requirements

Source: IMIS Database – FY 2003 (Federal only).

Some Potential Hazards and Their Sources

Hazard	Source
Struck by	Falling/moving pipe; tongs and/or spinning chain, kelly, rotary table, etc.; high pressure hose connection failure causing employees to be struck by whipping hose; tools/debris dropped from elevated location in rig; vehicles
Caught in/Between	Collars and tongs, spinning chain, and pipe; clothing gets caught in rotary table/drill string;
Fire/Explosion/High Pressure release	Well blowout, drilling/tripping out/swabbing etc. results in release of gas which might be ignited if not controlled at the surface; welding/cutting near combustible materials, uncontrolled ignition sources near the well head, e.g. heater in the doghouse, unapproved or poorly maintained electrical equipment; aboveground detonation of perforating gun
Rig Collapse	Overloading beyond the rated capacity of the rig; improper anchoring/guying; improper raising and lowering the rig; existing maintenance issues with the rig structure which impacts the integrity
Falls	Fall from elevated areas of the rig, i.e. stabbing board, monkey board, ladder, etc.; Fall from rig floor to grade
Hydrogen Sulfide (H ₂ S) Exposure	H ₂ S release during drilling, swabbing, perforating operations, etc resulting in employee exposures; production tank gauging operations, gaugers sometimes exposed to H ₂ S

2001 BLS Industry Data for Industry Group 138 – OIL AND GAS FIELD SERVICES

All Reported Cases	3041	
Nature of Illness or Injury	Number	% Total
Sprains, Strains	933	30.68
Fractures	583	19.17
Cuts, Punctures	323	10.62
Bruises	403	13.25
Heat Burns	0	0.00
Chemical Burns	0	0.00
Amputations	0	0.00
Carpal Tunnel	0	0.00
Tendonitis	0	0.00
Mult Trauma Total	91	2.99
Mult Trauma with Fracture	0	0.00
Mult Trauma with Sprain	0	0.00
Back Pain Total	107	3.52
Back Pain Hurt Back Only	0	0.00
All Other	523	17.20
Part of Body Affected	Number	% Total
Head Total	124	4.08
Eyes	0	0.00
Neck	84	2.76
Trunk Total	845	27.79
Trunk Back	417	13.71
Trunk Shoulder	147	4.83
Upper Extremities Total	761	25.02
Upper Extremities Finger	322	10.59
Upper Extremities Hand	237	7.79
Upper Extremities Wrist	69	2.27
Lower Extremities Total	863	28.38
Lower Extremities Knee	328	10.79
Lower Extremities Foot Toe	179	5.89
Body Systems	66	2.17
Multiple Body Parts	283	9.31
All Other Body Parts	0	0.00
Source of Injury or Illness	Number	% Total
Chem and Chem Products	114	3.75
Containers	169	5.56
Furniture and Fixtures	0	0.00
Machinery	168	5.52
Parts and Materials	876	28.81
Worker Motion	329	10.82
Floors Walkways	571	18.78
Handtools	193	6.35
Vehicle	305	10.03

Health Care Patient	0	0.00
All Other Sources	278	9.14

Sex	Number	% Total
Men	3011	99.01
Women	0	0.00
Sex Not Reported	0	0.00

Age	Number	% Total
Under 14	0	0.00
14 to 15	0	0.00
16 to 19	0	0.00
20 to 24	501	16.47
25 to 34	816	26.83
35 to 44	992	32.62
45 to 54	544	17.89
55 to 64	101	3.32
65 and Over	0	0.00
Not Reported	0	0.00

Race	Number	% Total
White Non Hispanic	1920	63.14
Black Non Hispanic	183	6.02
Hispanic	639	21.01
Asian or Pacific Islander	0	0.00
American Indian	0	0.00
Race Not Reported	283	9.31

Length of Service	Number	% Total
Less than 3 Months	716	23.54
3 to 11 Months	976	32.09
1 to 5 years	831	27.33
More than 5 Years	381	12.53
Service Not Reported	137	4.51

Days away from work	Number	% Total
1 Day	173	5.69
2 Days	151	4.97
3 to 5 Days	432	14.21
6 to 10 Days	396	13.02
11 to 20 Days	399	13.12
21 to 30 Days	232	7.63
31 Days or More	1259	41.40
Median Days Away	19	N/A

Event/Exposure Leading to Injury	Number	% Total
Total Contact with Objects	1282	42.16
Struck by Object	852	28.02
Struck Against Object	111	3.65
Caught in Object	297	9.77
Fall to Lower Level	286	9.40
Fall on Same Level	330	10.85

Slips or Trips	72	2.37
Overexertion Total	481	15.82
Overexertion in Lifting	241	7.93
Repetitive Motion	54	1.78
Exposure to Harmful Substance	97	3.19
Transportation Accidents	201	6.61
Fires and Explosions	0	0.00
Total Assaults – Violent Acts	0	0.00
Assaults by Person	0	0.00
All Other Assaults	0	0.00
All Other Events	230	7.56

Photo Credits

- 1) Title page photos from OSHA website – Oil and Gas Well Drilling and Servicing eTool (<http://www.osha.gov/SLTC/etools/oilandgas/index.html>)