

# Oil & natural gas extraction data

Richard Heede  
Climate Mitigation Services  
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## Kuwait Petroleum Corporation, Kuwait

www.kpc.com.kw

Safat

yellow column indicates original reported units

100% State-owned enterprise

### Production / Extraction data

Year

Crude Oil & NGL

Natural Gas

Kuwait production	Kuwait production	Estimated KPC production	Kuwait production	Kuwait production	Estimated KPC production
Thousand bbl / d	Million bbl / yr	Million bbl / yr	Million cf / d	Trillion cf / yr	Billion cf / yr

thousand bbl / yr

1944  
1945  
1946  
1947  
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2012  
2013  
2014  
2015  
2016  
2017  
2018

EIA data	Kuwait oil prod'n
million bbl / yr	Million bbl / yr
	6
	36
	66
	96
	126
	181
	237
	292
	347
	403
	446
	489
	533
	576

EIA data	Kuwait oil prod'n
thousand bbl / d	thousand bbl / d
	1,690
	1,740
	1,960
	2,100
	2,300
	2,360
	2,480
	2,500
	2,610
	2,770
	2,990
	3,200
	3,280
	3,020
	2,550
	2,080
	2,150
	1,970
	2,130
	2,500

Kuwait Petr. Corp	Percent of Kuwait prod'n allocated to KPC
Million bbl / yr	
1	10%
4	10%
7	10%
10	10%
13	10%
18	10%
24	10%
29	10%
35	10%
40	10%
45	10%
49	10%
53	10%
58	10%
62	10%
64	10%
72	10%
77	10%
84	10%
86	10%
91	10%
91	10%
95	10%
101	10%
109	10%
117	10%
195	16.3%
358	32.5%
745	80.0%
759	100%
785	100%
719	100%
777	100%
913	100%
639	100%
463	107%
302	96%
301	74%
399	89%
365	93%
442	81%
371	60%
439	76%
581	84%
388	86%
50	72%
383	96%
682	98%
730	95%
730	93%
730	93%
768	99%
657	82%
596	81%
768	96%
745	96%
715	97%
726	88%
856	94%
778	80%
699	72%
788	83%
847	85%
734	81%
741	83%
914	93%
1,005	99%
935	91%
1,047	103%
1,043	99%
1,044	95%
987	96%
999	95%



Kuwait	Kuwait	Kuwait PetrCorp
gross gas prod'n	net gas prod'n	estimated gas
Bcf/yr	Bcf/yr	Billion cf / yr
na	na	na
na	na	na
na	na	na
na	na	na
na	8	0.8
na	8	0.8
na	8	0.8
na	9	0.9
480	176	18
515	192	19
570	204	20
643	158	16
648	182	30
581	186	60
467	187	150
382	184	184
396	197	197
interpolated	209	209
interpolated	221	221
interpolated	232	232
NA	244	244
NA	100	213
NA	100	149
NA	124	154
NA	144	179
NA	140	171
NA	173	222
NA	187	187
NA	230	230
NA	288	288
NA	148	148
18	18	18
93	93	93
191	191	191
211	211	211
211	211	211
211	211	211
211	211	211
318	318	318
305	305	305
339	339	339
300	300	300
283	283	283
321	321	321
343	343	343
434	434	434
438	438	438
426	426	426
449	449	449
406	406	406
414	414	414
478	478	478
548	548	548
576	576	576
531	531	531
597	597	597
611	611	611
604	604	604
626	626	626

Kuwait oil prod'n	1946-1985
thousand bbl / yr	thousand bbl / yr
5,900	prod'n data
35,850	interpolated
65,800	interpolated
95,750	interpolated
125,700	prod'n data
181,100	interpolated
236,500	interpolated
291,900	interpolated
347,300	interpolated
402,700	prod'n data
445,980	interpolated
489,260	interpolated
532,540	interpolated
575,820	interpolated
619,100	prod'n data
667,580	interpolated
716,060	interpolated
764,540	interpolated
813,020	interpolated
861,500	prod'n data
907,320	interpolated
953,140	interpolated
998,960	interpolated
1,044,780	interpolated
1,090,600	prod'n data
1,024,620	interpolated
958,640	interpolated
892,660	interpolated
826,680	interpolated
760,700	prod'n data
730,014	interpolated
699,327	interpolated
668,641	interpolated
637,954	interpolated
607,268	prod'n data
563,287	interpolated
519,306	interpolated
475,325	interpolated
431,344	interpolated
387,363	prod'n data

OGJ Oil Mb OGJ Gas Bcf

371	371
439	439
581	581
388	388
50	18
383	93
682	191
730	211
730	211
730	211
768	318
657	318
596	305
768	339
745	300
715	283
726	321
856	343
778	434
699	438
788	426
847	449
734	406
741	414
914	478
1,005	548
935	576
1,047	531
1,043	597
611	611
987	604

<b>Total</b>			<b>33,068</b>	<b>na</b>	<b>14,150</b>	
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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
94																
95		<b>Alternate production estimate for 2008</b>														
96		Thousand bbl /d	Million bbl /yr				Million cf/d	Bcf.yr								
97		2,832	1,034				1,166	426								

Source: Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance.  
Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

	Total	Liquid fuels	Gas flaring
	ktC	ktC	ktC
1991	130,438	123,118	7,320
	478	451	27

1991 Kuwait fires million tonnes CO2	
Est oil emissions:	451.5
Est gas emissions:	26.8
<b>Total oil &amp; gas</b>	<b>478.3</b>

CDIAC & CMS calculations; see table below

1991 oil field fires		
~250 days @	6 million bbl /d	70-100 million m <sup>3</sup> /d
Say average	4 million bbl /day =	1,000.0 million bbl
Say average	60 million m <sup>3</sup> /day =	529.7 Bcf
Est oil emissions:	390.4	MtCO2
Est gas emissions:	30.8	MtCO2
Total oil & gas	421.3	MtCO2
Compare CDIAC:	478.3	MtCO2
0.390425656 MtCO2 / million barrels		
0.05821048 MtCO2/Bcf		
1 m <sup>3</sup> =	35.31	cubic feet



**US Energy Information Administration, International Energy Statistics**

	Kuwait		Kuwait		Kuwait		gross	Kuwait		Kuwait
	Crude oil, condensate, & NGL	million bbl per yr	Crude oil & NGL	Crude oil & NGL	Prod Marketed Gas	Dry Natural gas		Vented & Flared	Reinjected	
	k bbl per day	million bbl per yr	Mb	Mb	Bcf per year	Bcf per year	Bcf per year	%	Bcf per year	Bcf per year
1980	1,751	639	641	641	NA	244	50	-	-	NA
1981	1,185	433	433	433	NA	100	27	-	-	NA
1982	863	315	315	315	NA	100	17	-	-	NA
1983	1,119	408	408	408	NA	124	21	-	-	NA
1984	1,224	447	449	449	NA	144	23	-	-	NA
1985	1,077	393	411	411	NA	140	10	-	-	NA
1986	1,494	545	442	442	NA	173	23	-	-	NA
1987	1,680	613	391	391	NA	187	25	-	-	NA
1988	1,592	581	469	469	NA	230	32	-	-	NA
1989	1,888	689	514	514	NA	288	39	-	-	NA
1990	1,240	453	352	352	185	148	61	25%	4	250
1991	190	69	68	68	18	18	547	97%	-	565
1992	1,092	399	393	393	109	93	18	14%	-	127
1993	1,905	695	710	710	227	191	18	7%	-	244
1994	2,110	770	761	761	249	211	18	7%	-	267
1995	2,152	786	777	777	249	211	18	7%	-	267
1996	2,147	784	777	777	367	211	18	7%	-	267
1997	2,116	772	780	780	366	327	18	5%	-	384
1998	2,200	803	815	815	356	318	18	5%	-	374
1999	2,013	735	761	761	340	305	18	5%	-	358
2000	2,194	801	819	819	378	339	18	4%	-	396
2001	2,117	773	797	797	337	300	16	5%	-	353
2002	2,019	737	740	740	318	283	25	7%	-	343
2003	2,260	825	864	864	357	321	39	10%	-	396
2004	2,506	915	919	919	388	343	35	8%	-	424
2005	2,659	971	973	973	498	434	0	0%	-	470
2006	2,665	973	998	998	474	438	32	6%	-	505
2007	2,604	950	970	970	461	426	9	2%	-	470
2008	2,729	996	1,015	996	484	449	7	1%	-	490
2009	2,497	911	911	911	406	406	7	2%	-	413
2010	2,450	894	933	933	414	414	8	2%	-	422
2011	2,682	979	1,062	1,062	478	478	8	2%	-	486
2012	2,787	1,017	1,155	1,155	548	548	8	1%	-	556
2013	2,802	1,023	1,141	1,141	548	576	8	1%	-	584
2014	2,794	1,020	1,130	1,130	531	531	8	1%	-	539
2015	2,884	1,053	1,117	1,117	597	597	8	1%	-	605
2016	2,995	1,093	1,146	1,146	611	611	-	-	-	NA
2017	2,828	1,032	1,095	1,095	604	604	-	-	-	NA
2018	2,874	1,049	1,113	1,113						
1990-2011 totals					7,460	6,663	953	12%	4	8,269

Updated June 2019  
Crude oil, condensate, & NGL

BP Stat Rev Jun19

Updated June 2019 (dry gas, EIA stats to 2017)

Updated June 2019

	Gas (Ei data)	
	Million cf / day	Bcf/yr
2000	923	337
2001	923	337



An oil refinery in Mina-Al-Ahmadi

**Cell:** I9**Comment:** Rick Heede:

Kuwait Petroleum Corporation is the state-owned entity responsible for Kuwait's hydrocarbon interests throughout the world. [www.kpc.com.kw](http://www.kpc.com.kw)  
See cell note at G16 under "Kuwait Petr. Corp" column for historical summary.

**Cell:** N9**Comment:** Rick Heede:

100 percent state-owned by the government of Kuwait. World Bank (2008b) A Citizen's Guide to National Oil Companies, Part B: Data Directory, World Bank, Washington, & Center for Energy Economics, Bureau of Economic Geology Jackson School of Geosciences University of Texas, Austin, 764 pp. At page 450.  
Also see: Stevens, Paul (2012) "Kuwait Petroleum Corporation (KPC): an enterprise in gridlock," pp. 334-378, in Victor et al, eds, Oil and Governance, Cambridge Univ. Press, 1034 pp.

**Cell:** E12**Comment:** Rick Heede:

Oil & Gas Journal OGJ100, Sep13 and Sep14.

**Cell:** J12**Comment:** Rick Heede:

Oil & Gas Journal OGJ100, Sep13 and Sep14.

**Cell:** G16**Comment:** Rick Heede:

The Kuwait Oil Company (KOC) was created as joint venture between the Anglo-Persian Oil Company and Gulf Oil through a concession agreement in 1934 from the state of Kuwait for the entire land area (except the Neutral Zone), a 93-year non-renegotiable lifetime, and exclusive rights to exploration and production within Kuwait.  
The Kuwaiti government nonetheless set up the Kuwait National Petroleum Company (KNPC) as the national oil company in 1960 to operate along the KOC, with 40 percent of the equity available to the public. The KOC voluntarily relinquished some acreage and KNPC offered tracts to potential bidders; Hispanoil won the rights, although KNPC's four private directors resigned in protest over the company's failure to explore for oil without foreign partners. In the years following the 1967 Arab-Israeli War several governments in the Persian Gulf and North Africa negotiated the General Agreement on Participation, including Kuwait (in October 1972), and Kuwait immediately secured a 25 percent interest in KOC and a planned 51 percent share in 1982 -- for which Kuwait paid the relatively low compensation of \$200 per bbl of production capacity (Saudi Arabia, for example, paid \$351, Abu Dhabi \$580, and Qatar \$592).  
However, the Kuwait General Assembly demanded more favorable terms, especially a higher equity share, and in June 1973 Kuwait re-negotiated an immediate 40 percent equity, rising to 60 percent in January 1974; by mid-1974, the government announced that it would acquire 100 percent of the equity. The Kuwait Petroleum Corporation was created in the late 1970s as a holding company for the many oil-related subsidiaries. National control was asserted in the "founding law" (Law 6, 1980).  
Stevens, Paul (2012) "Kuwait Petroleum Corporation (KPC): an enterprise in gridlock," pp. 334-378, in Victor et al, eds, Oil and Governance, Cambridge Univ. Press, 1034 pp. See pp. 340-341.  
This project applies a ten percent royalty rate for the years through Sep 1972, then 25 percent Oct72 through June 1973, 40 percent from July to December 1973, 60 percent Jan - Jun 1974, and 100 percent of production from July 1974 forward.

**Cell:** H16**Comment:** Rick Heede:

This project applies a ten percent royalty rate for the years through Sep 1972, then 25 percent Oct72 through June 1973, 40 percent from July to December 1973, 60 percent Jan - Jun 1974, and 100 percent of production from July 1974 forward.  
See comment in cell F16 for details.  
We use KPC's own production data from 1981-1986, and Oil & Gas Journal estimates from 1987-2010. Note that OGJ estimates are 1 percent to 60 percent lower than EIA estimates for total liquids production for Kuwait.

**Cell:** M16**Comment:** Rick Heede:

See also (for oil production 1946, 1955, 1960, 1965, etc): [http://lcweb2.loc.gov/frd/cs/kuwait/kw\\_appen.html#table6](http://lcweb2.loc.gov/frd/cs/kuwait/kw_appen.html#table6)  
Source: Based on information from M.W. Khouja and P.G. Sadler, The Economy of Kuwait, London, 1979, 26; Kuwait, Ministry of Planning, Central Statistical Office, Annual Statistical Abstract, 1989, Kuwait, 1990, Table 200, 210; and Organization of the Petroleum Exporting Countries, Annual Statistical Bulletin, 1993, Vienna, 1993, 23.

**Cell:** D32**Comment:** Rick Heede (Dec09):

Retreating Iraqi forces put oil and gas fields on fire in late February 1991; the last fires were extinguished on 6Nov91. An estimated 5 to 6 million bbl of oil and 70 to 100 million cubic meters of natural gas were burned "per day." CMS assumes an average of 4 million bbl of oil and 60 million m<sup>3</sup> of natural gas were combusted per average day over the 250 day period. Thus 1 billion bbl of oil and 530 Bcf of gas were burned. Calculations and sources are shown in the Table below this worksheets.

**Cell:** J32**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1964, page 348, marketed production 1960-1964.

**Cell:** J36**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1968, page 750, marketed production 1964-1967. Gross production not shown.

**Cell:** J40**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1970, page 764, gross and marketed production 1968-1970.

**Cell:** J43**Comment:** Rick Heede:

U.S. Bureau of Mines, Minerals Yearbook 1972, page 846, gross and marketed production 1970.

**Cell:** J44**Comment:** Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1974, page 887, reports both gross and marketed production for 1972-1973.

**Cell:** J46**Comment:** Rick Heede:

U.S. Bureau of Mines Minerals Yearbook 1976, page 887, reports both gross and marketed production for 1974-1976.

**Cell:** F53**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1981/1982 Annual Report, p. 16, reports crude oil production of 260 million bbl being 159 million bbl less than in 1980-1981. The report also mentions that "KPC also received 28.1 million barrels of the total production of crude oil from the Partitioned Zone (Wafra)."  
KPC production of propane and butane totaled 1.4 million tonnes. Using 11.5 bbl per tonne ([www.eppo.go.th/ref/UNIT-OIL.html](http://www.eppo.go.th/ref/UNIT-OIL.html)), 1.4 million tonnes = 16.1 million bbl, which we add to crude oil production.  
Total estimated production 1980-81 is 260 + 159 + 28.1 + 16.1 = 463.2 million bbl.

**Cell:** K53**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1982/1983 Annual Report shows natural gas production of 148.8 billion cubic feet is "30 percent less than in 1980-81" (148.8 / 0.7 = 212.6 Bcf).

**Cell:** F54**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1981/1982 Annual Report, p. 16, reports crude oil production of 260 million bbl (average of 0.712 million bbl per day). The report also mentions that "KPC also received 26 million barrels of the total production of crude oil from the Partitioned Zone (Wafra)."  
KPC production of propane and butane totaled 1.4 million tonnes. Using 11.5 bbl per tonne ([www.eppo.go.th/ref/UNIT-OIL.html](http://www.eppo.go.th/ref/UNIT-OIL.html)), 1.4 million tonnes = 16.1 million bbl, which we add to crude oil production.

**Cell:** K54**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1982/1983 Annual Report shows natural gas production of 148.8 billion cubic feet.

**Cell:** F55**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1982/1983 Annual Report, p. 14, reports crude oil production of 262.6 million bbl (average of 0.7193 million bbl per day). The report also mentions that "KPC also received 22.4 million barrels of the total production of crude oil from the Partitioned Zone (Wafra)."  
KPC production of propane and butane totaled 1.4 million tonnes. Using 11.5 bbl per tonne ([www.eppo.go.th/ref/UNIT-OIL.html](http://www.eppo.go.th/ref/UNIT-OIL.html)), 1.4 million tonnes = 16.1 million bbl, which we add to crude oil production.

**Cell:** K55**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1982/1983 Annual Report shows natural gas production of 153.7 billion cubic feet.

**Cell:** F56**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1983/1984 Annual Report, p. 15, reports crude oil production of 356 million bbl (average of 0.973 million bbl per day). The report also mentions that "KPC also received 22.5 million barrels of the total production of crude oil from the Partitioned Zone (Wafra)."  
KPC production of propane and butane totaled 1.8 million tonnes. Using 11.5 bbl per tonne ([www.eppo.go.th/ref/UNIT-OIL.html](http://www.eppo.go.th/ref/UNIT-OIL.html)), 1.8 million tonnes = 20.7 million bbl, which we add to crude oil production.

**Cell:** K56**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1983/1984 Annual Report shows natural gas production of 179 billion cubic feet.

**Cell:** F57**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1984/1985 Annual Report, p. 16, reports crude oil production of 318.6 million bbl (average of 0.873 million bbl per day). The report states that "KPC also received 26 million barrels of the total production of crude oil from the Partitioned Zone (Wafra)."  
CMS also adds NGL/condensate production of 20.7 million bbl (from 1.8 million tonnes of propane and butane in 1984 (1985 production not stated)).

**Cell:** K57**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1984/1985 Annual Report shows natural gas production of 171 billion cubic feet.

**Cell:** F58**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1985/1986 Annual Report, p. 16, reports crude oil production of 396.4 million bbl (average of 1.086 million bbl per day). The report also mentions that "KPC also received about 24.6 million barrels of the total production of crude oil from the Partitioned Zone (Wafra), compared with about 26 million barrels in the previous year."

**Cell:** K58**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1985/1986 Annual Report, p. 16, reports natural gas production of 221.5 billion cubic feet, significantly exceeding EIA's estimated gas production of 140 Bcf.

**Cell:** G63**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1990-1991 Annual Report provides partial data on oil production after the destruction of 80 percent of oil facilities during the Gulf War. The report mentions minor production of 9,000 bbl per day in Jun91, rising to 50,000 bbl per day "at the end of the period" (CMS does not have KPC's fiscal year).

**Cell:** G65**Comment:** Rick Heede:

Kuwait Petroleum Corporation 1992-1993 Annual Report reports average crude oil production of 1.4 million bbl per day. (Note: oil production is expanding rapidly in the post-Gulf War I recovery period; in Feb93 it reached 2.0 million bbl /day.  
CMS also adds NGL/condensate production of 20.7 million bbl (from 1.8 million tonnes of propane and butane in 1984 (1993 production not stated)).

**Cell:** F68**Comment:** Rick Heede:

Data from OGJ (1999) OGJ100 to check veracity of EIA data reported in column E.

**Cell:** M68**Comment:** Rick Heede:

Data from OGJ (1999) OGJ100 to check veracity of EIA data reported in column E.

**Cell:** E72**Comment:** Rick Heede:

EIA data slightly lower than OGJ100 estimates, the latter 768 in 2000 and 745 in 2001.

**Cell:** K72**Comment:** Rick Heede:

OGJ 100 data for 2000-2001.  
EI data differs greatly: 336.9 Bcf in both 2000 and 2001.

**Cell:** N72**Comment:** Rick Heede:

OGJ 100 data for 2000-2001.  
EI data differs greatly: 336.9 Bcf in both 2000 and 2001.

**Cell:** F81**Comment:** Rick Heede:

OGJ100 6Sep2010 pg 69

**Cell:** K81**Comment:** Rick Heede:

OGJ100 6Sep2010 pg 69

**Cell:** M81**Comment:** Rick Heede:

OGJ100 6Sep2010 pg 69

**Cell:** N81**Comment:** Rick Heede:

OGJ100 6Sep2010 pg 69

**Cell:** F82**Comment:** Rick Heede:

OGJ 3 Oct 2011 pg 49

**Cell:** K82**Comment:** Rick Heede:

OGJ 3 Oct 2011 pg 49

**Cell:** M82**Comment:** Rick Heede:

OGJ 3 Oct 2011 pg 49

**Cell:** N82

**Comment:** Rick Heede:  
OGJ 3 Oct 2011 pg 49

**Cell:** K86

**Comment:** Rick Heede:  
Oil & Gas Journal, OGJ100, September 2015 and 2017, for Kuwait Petroleum Corporation.

**Cell:** N86

**Comment:** Rick Heede:  
Oil & Gas Journal, OGJ100, September 2015 and 2017, for Kuwait Petroleum Corporation.

**Cell:** F90

**Comment:** Rick Heede:  
Kuwait Petroleum Corporation (KPC) does not report production on its website. CAI uses Oil & G as Journal OGJ100 for September 2019, page 34-35: 998.8 Mb crude oil (presumably including condensate and NGL).

**Cell:** J90

**Comment:** Rick Heede:  
Kuwait Petroleum Corporation (KPC) does not report production on its website. CAI uses Oil & G as Journal OGJ100 for September 2019, page 34-35. Natural gas production: 626.4 Bcf.

**Cell:** E97

**Comment:** Rick Heede:  
Kuwait Petroleum "working interest liquids production in 2008" at 2,832 thousand bbl per day.  
Victor, Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance. Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

**Cell:** J97

**Comment:** Rick Heede:  
Kuwait Petroleum's "working interest natural gas production in 2008" at 1,166 thousand cf per day.  
Victor, Hults, & Thurber, 2012, Introduction, Table 1.1, page 24, in Victor et al, eds, 2012, Oil and Governance. Table 1.1 is based on information from Wood Mackenzie's Pathfinder Database; www.woodmacresearch.com

**Cell:** D178

**Comment:** Rick Heede:  
Gas production from EI (2003) Top 100, p. 165.

**Cell:** P192

**Comment:** Rick Heede:

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**Cell:** P193

**Comment:** Rick Heede:

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