

Oil & natural gas extraction data

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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 | | | thousand bbl / yr |
|--------------|-------------------|-------------------|--------------------------|---|-------------------|--------------------------|-------------------|
| | 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 | |
| 1944 | EIA data | Kuwait oil prod'n | Kuwait Petr. Corp | Percent of Kuwait prod'n allocated to KPC | Kuwait oil prod'n | 1946-1985 | |
| 1945 | million bbl / yr | Million bbl / yr | Million bbl / yr | | thousand bbl / yr | | |
| 1946 | | 6 | 1 | 10% | 5,900 | prod'n data | |
| 1947 | | 36 | 4 | 10% | 35,850 | interpolated | |
| 1948 | | 66 | 7 | 10% | 65,800 | interpolated | |
| 1949 | | 96 | 10 | 10% | 95,750 | interpolated | |
| 1950 | Total Kuwait | 126 | 13 | 10% | 125,700 | prod'n data | |
| 1951 | Oil prod'n | 181 | 18 | 10% | 181,100 | interpolated | |
| 1952 | data sources: | 237 | 24 | 10% | 236,500 | interpolated | |
| 1953 | 1946-59: various | 292 | 29 | 10% | 291,900 | interpolated | |
| 1954 | 1960-2003: EIA | 347 | 35 | 10% | 347,300 | interpolated | |
| 1955 | 2004: OGJ | 403 | 40 | 10% | 402,700 | prod'n data | |
| 1956 | | 446 | 45 | 10% | 445,980 | interpolated | |
| 1957 | | 489 | 49 | 10% | 489,260 | interpolated | |
| 1958 | EIA data | 533 | 53 | 10% | 532,540 | interpolated | |
| 1959 | thousand bbl / d | 576 | 58 | 10% | 575,820 | interpolated | |
| 1960 | 1,690 | 617 | 62 | 10% | 619,100 | prod'n data | |
| 1961 | 1,740 | 635 | 64 | 10% | 667,580 | interpolated | |
| 1962 | 1,960 | 715 | 72 | 10% | 716,060 | interpolated | |
| 1963 | 2,100 | 767 | 77 | 10% | 764,540 | interpolated | |
| 1964 | 2,300 | 840 | 84 | 10% | 813,020 | interpolated | |
| 1965 | 2,360 | 861 | 86 | 10% | 861,500 | prod'n data | |
| 1966 | 2,480 | 905 | 91 | 10% | 907,320 | interpolated | |
| 1967 | 2,500 | 913 | 91 | 10% | 953,140 | interpolated | |
| 1968 | 2,610 | 953 | 95 | 10% | 998,960 | interpolated | |
| 1969 | 2,770 | 1,011 | 101 | 10% | 1,044,780 | interpolated | |
| 1970 | 2,990 | 1,091 | 109 | 10% | 1,090,600 | prod'n data | |
| 1971 | 3,200 | 1,168 | 117 | 10% | 1,024,620 | interpolated | |
| 1972 | 3,280 | 1,197 | 195 | 16.3% | 958,640 | interpolated | |
| 1973 | 3,020 | 1,102 | 358 | 32.5% | 892,660 | interpolated | |
| 1974 | 2,550 | 931 | 745 | 80.0% | 826,680 | interpolated | |
| 1975 | 2,080 | 759 | 759 | 100% | 760,700 | prod'n data | |
| 1976 | 2,150 | 785 | 785 | 100% | 730,014 | interpolated | |
| 1977 | 1,970 | 719 | 719 | 100% | 699,327 | interpolated | |
| 1978 | 2,130 | 777 | 777 | 100% | 668,641 | interpolated | |
| 1979 | 2,500 | 913 | 913 | 100% | 637,954 | interpolated | |
| 1980 | 1,751 | 639 | 639 | 100% | 607,268 | prod'n data | |
| 1981 | 1,185 | 433 | 463 | 107% | 563,287 | interpolated | |
| 1982 | 863 | 315 | 302 | 96% | 519,306 | interpolated | |
| 1983 | 1,119 | 408 | 301 | 74% | 475,325 | interpolated | |
| 1984 | 1,224 | 447 | 399 | 89% | 431,344 | interpolated | |
| 1985 | 1,077 | 393 | 365 | 93% | 387,363 | prod'n data | |
| 1986 | 1,494 | 545 | 442 | 81% | | | |
| 1987 | 1,680 | 613 | 371 | 60% | | | |
| 1988 | 1,592 | 581 | 439 | 76% | | | |
| 1989 | 1,888 | 689 | 581 | 84% | | | |
| 1990 | 1,240 | 453 | 388 | 86% | | | |
| 1991 | 190 | 69 | 50 | 72% | | | |
| 1992 | 1,092 | 399 | 383 | 96% | | | |
| 1993 | 1,905 | 695 | 682 | 98% | | | |
| 1994 | 2,110 | 770 | 730 | 95% | | | |
| 1995 | 2,152 | 786 | 730 | 93% | | | |
| 1996 | 2,147 | 784 | 730 | 93% | | | |
| 1997 | 2,116 | 772 | 768 | 99% | | | |
| 1998 | 2,200 | 803 | 657 | 82% | | | |
| 1999 | 2,013 | 735 | 596 | 81% | | | |
| 2000 | 2,194 | 801 | 768 | 96% | | | |
| 2001 | 2,117 | 773 | 745 | 96% | | | |
| 2002 | 2,019 | 737 | 715 | 97% | | | |
| 2003 | 2,260 | 825 | 726 | 88% | | | |
| 2004 | 2,506 | 915 | 856 | 94% | | | |
| 2005 | 2,659 | 971 | 778 | 80% | | | |
| 2006 | 2,665 | 973 | 699 | 72% | | | |
| 2007 | 2,604 | 950 | 788 | 83% | | | |
| 2008 | 2,729 | 996 | 847 | 85% | | | |
| 2009 | 2,497 | 911 | 734 | 81% | | | |
| 2010 | 2,450 | 894 | 741 | 83% | | | |
| Total | 106,117 | 42,565 | 25,095 | na | 8,967 | | |



| Kuwait | Kuwait | Kuwait PetrCorp |
|------------------|----------------|-----------------|
| gross gas prod'n | net gas prod'n | |
| Bcf/yr | Bcf/yr | Billion cf / yr |
| na | na | estimated gas |
| 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 | 17.6 |
| 515 | 192 | 19.2 |
| 570 | 204 | 20.4 |
| 643 | 158 | 15.8 |
| 648 | 182 | 29.5 |
| 581 | 186 | 60.5 |
| 467 | 187 | 149.5 |
| 382 | 184 | 183.8 |
| 396 | 197 | 197.1 |
| interpolated | 209 | 208.8 |
| interpolated | 221 | 220.6 |
| interpolated | 232 | 232.3 |
| NA | 244 | 244.0 |
| NA | 100 | 212.6 |
| NA | 100 | 148.8 |
| NA | 124 | 153.7 |
| NA | 144 | 179.0 |
| NA | 140 | 171.0 |
| NA | 173 | 221.5 |
| NA | 187 | 187.2 |
| NA | 230 | 230.0 |
| NA | 288 | 288.2 |
| 250 | 185 | 185.0 |
| 565 | 18 | 15.5 |
| 127 | 93 | 93.6 |
| 244 | 191 | 157.8 |
| 267 | 211 | 164.7 |
| 267 | 211 | 211.6 |
| 385 | 328 | 210.5 |
| 384 | 327 | 209.3 |
| 374 | 318 | 206.9 |
| 358 | 305 | 182.9 |
| 396 | 339 | 270.0 |
| 353 | 300 | 249.4 |
| 343 | 283 | 317.6 |
| 396 | 321 | 335.8 |
| 424 | 343 | 324.7 |
| 533 | 434 | 347.3 |
| 505 | 438 | 366.5 |
| 470 | 426 | 371.0 |
| 525 | 449 | 501.0 |
| 413 | 371 | 434.0 |
| 422 | 414 | 418.0 |

OGJ100



1991 Kuwait fires million tonnes CO2
Est oil emissions: 451.5
Est gas emissions: 26.8
Total oil & gas 478.3
CDIAC & CMS calculations; see table below

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| Alternate production estimate for 2008 | | | |
|--|-----------------|--------------|--------|
| Thousand bbl /d | Million bbl /yr | Million cf/d | Bcf.yr |
| 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

CDIAC country data

Kuwait Oil Fires

1991

ktC

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

MtCO2

| 1991 oil field fires | | |
|----------------------|-------------------------------------|----------------------------------|
| ~250 days @ | 6 million bbl /d | 70-100 million m ³ /d |
| Say average | 4 million bbl /day = | 1,000.0 million bbl |
| Say average | 60 million m ³ /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 ³ = | 35.31 | cubic feet |



US Energy Information Administration, International Energy Statistics

www.eia.gov/emeu/internationalenergy.html

vented & flared of

| | Kuwait | Kuwait |
|------|---------------|--------------------|
| | k bbl per day | million bbl per yr |
| 1980 | 1,751 | 639 |
| 1981 | 1,185 | 433 |
| 1982 | 863 | 315 |
| 1983 | 1,119 | 408 |
| 1984 | 1,224 | 447 |
| 1985 | 1,077 | 393 |
| 1986 | 1,494 | 545 |
| 1987 | 1,680 | 613 |
| 1988 | 1,592 | 581 |
| 1989 | 1,888 | 689 |
| 1990 | 1,240 | 453 |
| 1991 | 190 | 69 |
| 1992 | 1,092 | 399 |
| 1993 | 1,905 | 695 |
| 1994 | 2,110 | 770 |
| 1995 | 2,152 | 786 |
| 1996 | 2,147 | 784 |
| 1997 | 2,116 | 772 |
| 1998 | 2,200 | 803 |
| 1999 | 2,013 | 735 |
| 2000 | 2,194 | 801 |
| 2001 | 2,117 | 773 |
| 2002 | 2,019 | 737 |
| 2003 | 2,260 | 825 |
| 2004 | 2,506 | 915 |
| 2005 | 2,659 | 971 |
| 2006 | 2,665 | 973 |
| 2007 | 2,604 | 950 |
| 2008 | 2,729 | 996 |
| 2009 | 2,497 | 911 |
| 2010 | 2,450 | 894 |
| 2011 | 2,682 | 979 |
| 2012 | 2,787 | 1,017 |

updated April 2013

| Kuwait | Kuwait | Kuwait | gross | Kuwait | Kuwait |
|-------------------|-----------------|-----------------|-------|--------------|--------------|
| Prod Marketed Gas | Dry Natural gas | Vented & Flared | % | Reinjected | Gross Prod'n |
| Bcf per year | Bcf per year | Bcf per year | | Bcf per year | Bcf per year |
| NA | 244 | 50 | | NA | NA |
| NA | 100 | 27 | | NA | NA |
| NA | 100 | 17 | | NA | NA |
| NA | 124 | 21 | | NA | NA |
| NA | 144 | 23 | | NA | NA |
| NA | 140 | 10 | | NA | NA |
| NA | 173 | 23 | | NA | NA |
| NA | 187 | 25 | | NA | NA |
| NA | 230 | 32 | | NA | NA |
| NA | 288 | 39 | | NA | NA |
| 185 | 185 | 25 | 10% | 4 | 250 |
| 18 | 18 | 547 | 97% | - | 565 |
| 109 | 93 | 18 | 14% | - | 127 |
| 227 | 191 | 18 | 7% | - | 244 |
| 249 | 211 | 18 | 7% | - | 267 |
| 249 | 211 | 18 | 7% | - | 267 |
| 367 | 328 | 18 | 5% | - | 385 |
| 366 | 327 | 18 | 5% | - | 384 |
| 356 | 318 | 18 | 5% | - | 374 |
| 340 | 305 | 18 | 5% | - | 358 |
| 378 | 339 | 18 | 4% | - | 396 |
| 337 | 300 | 16 | 5% | - | 353 |
| 318 | 283 | 25 | 7% | - | 343 |
| 357 | 321 | 39 | 10% | - | 396 |
| 388 | 343 | 35 | 8% | - | 424 |
| 498 | 434 | 35 | 7% | - | 533 |
| 474 | 438 | 32 | 6% | - | 505 |
| 461 | 426 | 9 | 2% | - | 470 |
| 484 | 449 | 7 | 1% | 34 | 525 |
| 406 | 371 | 7 | 2% | - | 413 |
| 414 | 414 | 8 | 2% | - | 422 |
| 478 | 478 | 8 | 2% | - | 486 |

| | | | | | | |
|------------------|-------|-------|-----|-----|----|-------|
| 1990-2011 totals | 7,460 | 6,784 | 951 | 11% | 38 | 8,486 |
|------------------|-------|-------|-----|-----|----|-------|

| 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
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:

EIA national stats = 726.4 million bbl. Research concessionaires in Kuwait.

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

CMS has estimated Kuwait Petroleum Corporation crude and NGL production for 1946-2004. KPC annual reports have been published since 1980/1981. The estimates below should be considered preliminary, inasmuch as the copies of the annual reports photocopied on our behalf by the Arab World Documentation Unit at University of Exeter (www.ex.ac.uk/awdu) were largely incomplete, frequently omitting data on crude oil and natural gas production. The years we do have data roughly corroborate CMS estimates (see 1985 and 1993, which are chiefly based on EIA estimates of total production in Kuwait.

Note (Dec11), the publications webpage of KPC still does not have annual reports available for download or viewing, "coming soon" since 2009.

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 areage 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

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:

Production data 1960-2003 from EIA (2004) AER 2003, Table 11.5.

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), 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), 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), 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), 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: 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: F81

Comment: Rick Heede:

OGJ100 6Sep2010 pg 69

Cell: K81

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: E89

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: J89

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: D166

Comment: Rick Heede:

Gas production from EI (2003) Top 100, p. 165.

Cell: N171

Comment: Rick Heede:

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