

Oil and natural gas extraction data

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 Climate Mitigation Services
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Occidental Petroleum, USA

yellow column indicates original reported units Investor-owned

www.oxy.com Los Angeles

Production / Extraction data

Year	Crude Oil & NGL				Natural Gas				Background data
	Net production	Company 1	Company 2	Sum production	Net production	Company 1	Company 2	Sum production	
	Thousand bbl /d	Million bbl /yr	Million bbl /yr	Million bbl /yr	Million cf/d	Billion cf/yr	Billion cf/yr	Billion cf/yr	
		Occidental 1920-2010	Vintage Petr. 1992-2004			Vintage Petr. 1992-2004	Occidental Petroleum		



- 15 1950
- 16 1951
- 17 1952
- 18 1953
- 19 1954
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- 77 2012
- 78 2013
- 79 2014
- 80 2015
- 81 2016
- 82 2017
- 83 2018

Year	Crude Oil & NGL		Natural Gas	
	Company 1	Company 2	Company 1	Company 2
1950	0.36		0.08	
1951	20.4	interpolated	1.7	interpolated
1952	40.4	interpolated	3.4	interpolated
1953	60.4	interpolated	5.1	interpolated
1954	80.4	interpolated	6.7	interpolated
1955	100.4	interpolated	8.4	interpolated
1956	120.4	interpolated	10.1	interpolated
1957	140.5	interpolated	11.7	interpolated
1958	160.5	interpolated	13.4	interpolated
1959	180.5	interpolated	15.0	interpolated
1960	200.5	interpolated	16.7	interpolated
1961	220.5	interpolated	18.4	interpolated
1962			20.0	interpolated
1963			21.7	interpolated
1964	659.0	240.5	64.0	23.4
1965	586.4	214.0	66.0	24.1
1966	380.0	138.7	55.0	20.1
1967	252.0	92.0	93.0	33.9
1968	166.0	60.6	94.0	34.3
1969	143.0	52.2	93.0	33.9
1970	174.0	63.5	96.0	35.0
1971	252.0	92.0	106.0	36.7
1972	326.0	119.0	115.0	42.0
1973	353.0	128.8	109.0	39.8
1974	296.0	108.0	170.0	62.1
1975	266.0	97.1	756.0	275.9
1976	282.0	102.9		258.0
1977	423.0	154.4		265.0
1978				265.0
1979				298.0
1980				308.0
1981				283.0
1982				258.0
1983				257.0
1984				14.6
1985				35.6
1986				28.9
1987				30.6
1988				32.4
1989				42.7
1990				47.2
1991				48.4
1992				53.7
1993				75.6
1994				69.9
1995				27.8
1996				61.3
1997				165.0
1998				272.0
1999				261.0
2000				913
2001				997
2002				1,180
2003				1,223
2004				1,286
2005				1,234
2006				887
2007				978
2008				954
2009				809
2010				844
2011				
2012				
2013				
2014				
2015				
2016				
2017				
2018				
Total				

Occidental owns Island Creek (1984)
 1970 AnnRpt shows coal sales \$ 1961

Year	Coal Sales (\$)
1970	22.9
1971	22.6
1972	22.9
1973	20.8
1974	17.6
1975	16.8
1976	13.7
1977	19.5
1978	19.4
1979	16.1
1980	10.5
1981	11.7

no data
 See Oxy / Island Creek Coal for details

Proven Reserves, 2010

Oil (million bbl)	Gas (Bcf)
2,476	5,320

471

Occidental acquired Anadarko, 8 Aug 2019
 Reflect in 2019 update

Total	8,065	na	11,638	230
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	Comparative Oil and Gas Proved Reserves and Sales Volumes											
	2018				2017				2016			
	Oil	NGL	Gas	BOE (a)	Oil	NGL	Gas	BOE (a)	Oil	NGL	Gas	BOE (a)
Proved Reserves												
United States	1,186	284	1,445	1,711	1,107	247	1,205	1,555	960	219	1,045	1,353
International	397	202	2,650	1,041	408	198	2,626	1,043	397	201	2,729	1,053
Total	1,583	486	4,095	2,752	1,515	445	3,831	2,598	1,357	420	3,774	2,406
Sales Volumes												
United States	91	25	119	136	73	20	108	111	69	19	132	110
International	62	11	189	104	66	11	188	109	74	11	217	121
Total	153	36	308	240	139	31	296	220	143	30	349	231

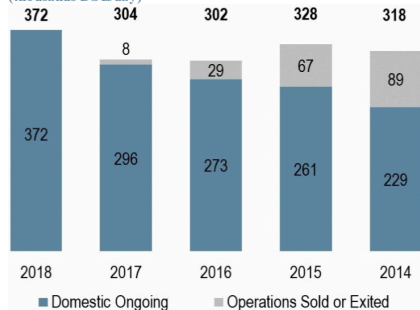
Note: The detailed proved reserves information presented in accordance with Item 1202(a)(2) to Regulation S-K under the Securities Exchange Act of 1934 (Exchange Act) is provided under the heading "Supplemental Oil and Gas Information". Proved reserves are stated on a net basis after applicable royalties.

(a) Natural gas volumes are converted to barrels of oil equivalent (BOE) at six thousand cubic feet (Mcf) of gas per one barrel of oil. Barrels of oil equivalent does not necessarily result in price equivalence. The price of natural gas on a BOE basis is currently substantially lower than the corresponding price for oil and has been similarly lower for a number of years. For example, in 2018, the average daily prices of West Texas Intermediate (WTI) oil and New York Mercantile Exchange (NYMEX) natural gas were \$64.77 per barrel and \$2.97 per Mcf, respectively, resulting in an oil to gas ratio of over 20 to 1.

Occidental Form 10-K for 2018, p. 3.

Domestic Production Volumes

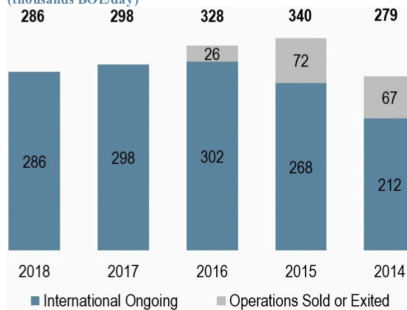
(thousands BOE/day)



Occidental Form 10-K for 2018, p. 15.

International Production Volumes

(thousands BOE/day)



Occidental Form 10-K for 2018, p. 16.

Production per Day by Products

	2016	2015	2014
United States			
Oil (MBBL)			
Permian Resources	77	71	43
Permian EOR	108	110	111
South Texas and Other	4	21	29
Total	189	202	183
NGLs (MBBL)			
Permian Resources	21	16	12
Permian EOR	27	29	30
South Texas and Other	5	10	13
Total	53	55	55
Natural gas (MMCF)			
Permian Resources	158	137	120
Permian EOR	59	37	38
South Texas and Other	144	250	318
Total	361	424	476
Latin America			
Oil (MBBL) - Colombia	33	35	27
Natural gas (MMCF) - Bolivia	8	10	11
Middle East/North Africa			
Oil (MBBL)			
Al Hosn	12	7	-
Dolphin	7	7	7
Oman	77	82	69
Qatar	65	66	69
Other	7	32	28
Total	168	194	173
NGLs (MBBL)			
Al Hosn	20	10	-
Dolphin	8	8	7
Total	28	18	7
Natural gas (MMCF)			
Al Hosn	190	109	-
Dolphin	166	158	143
Oman	115	44	43
Other	114	237	236
Total	585	548	422
Total Production (MBOE) (a)	630	668	597

Oxy 10-K, 2016, page 22.

Comparative Oil and Gas Proved Reserves and Sales Volumes

Oil, which includes condensate, and NGLs are in millions of barrels; natural gas is in billions of cubic feet (Bcf); barrels of oil equivalent (BOE) are in millions.

	2016				2015				2014 (a)			
	Oil	NGLs	Gas	BOE (b)	Oil	NGLs	Gas	BOE (b)	Oil	NGLs	Gas	BOE (b)
Proved Reserves												
United States	960	219	1,045	1,353	915	186	1,019	1,271	1,273	222	1,714	1,781
International	397	201	2,729	1,053	394	144	2,349	929	497	140	2,413	1,038
Total	1,357	420	3,774	2,406	1,309	330	3,368	2,200	1,770	362	4,127	2,819
Sales Volumes												
United States	69	19	132	110	73	20	155	119	67	20	173	116
International	74	11	217	121	86	7	205	127	74	2	158	102
Total	143	30	349	231	159	27	360	246	141	22	331	218

Note: The detailed proved reserves information presented in accordance with Item 1202(a)(2) to Regulation S-K under the Securities Exchange Act of 1934 (Exchange Act) is provided under the heading "Supplemental Oil and Gas Information". Proved reserves are stated on a net basis after applicable royalties.

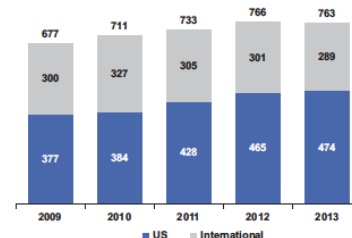
(a) Excludes proved reserves and sales volumes for Occidental's California oil and gas operations, which were transferred to California Resources Corporation (California Resources) in November 2014, and has been treated as discontinued operations.

(b) Natural gas volumes are converted to BOE at six thousand cubic feet (Mcf) of gas per one barrel of oil. Barrels of oil equivalent does not necessarily result in price equivalence. The price of natural gas on a barrel of oil equivalent basis is currently substantially lower than the corresponding price for oil and has been similarly lower for a number of years. For example, in 2016, the average prices of West Texas Intermediate (WTI) oil and New York Mercantile Exchange (NYMEX) natural gas were \$43.32 per barrel and \$2.42 per Mcf, respectively, resulting in an oil to gas ratio of 18 to 1.

Occidental AnnRpt & 10-K, page 3 (pdf page 16).

Worldwide Production Volumes

(thousands BOE/day)



Occidental AnnRpt & 10-K, page 15.

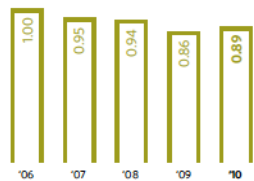
Worldwide Production Volumes

(thousands BOE/day)



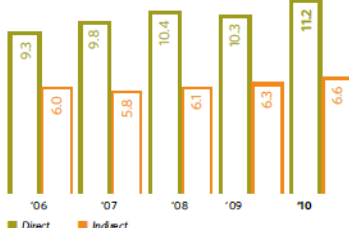
Energy use index

Base year 2006=1.0
(excludes energy used to generate electricity exported to the grid)



Estimated GHG emissions

(equity share basis)*
Million metric tons CO₂ equivalents



Oxy SRI report 2010, page 12.
Direct: Scope 1. Indirect: Scope 2.

Enhanced Oil Recovery
500 billion cubic feet
Amount of carbon dioxide Oxy injected into oil reservoirs in the Permian Basin in 2010, making Oxy the largest handler of CO₂ in the world.

Oxy SRI report 2010, page 12.



Oxy AR2012. Oxy's PS-1 complex, Qatar

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

Occidental ("Oxy") was established in 1920 in California. Led by Armand Hammer into early production in Libya and Soviet Union.

2010: Oxy announced the acquisition of assets in South Texas and North Dakota and the selling of its assets in Argentina. Eni, Oxy and Korea Gas signed a contract with Iraq's state-owned South Oil Company and Missan Oil Company as State Partner, to redevelop the Zubair Field, near Basra in southern Iraq. The government of Abu Dhabi selected Oxy to help develop the Shah Gas Field, one of the largest gas fields in the Middle East. Oxy holds a 40-percent participating interest in a 30-year contract.

2009: Oxy announced a significant discovery of oil and gas reserves in Kern County, California — believed to be the state's largest oil and gas discovery in 35 years. Oxy and Mubadala Development Company (Mubadala) with the National Oil and Gas Authority of Bahrain (NOGA) started operations for the further development of the Bahrain Field. Oxy also acquired the commodities investment company Phibro from Citigroup and OxyChem acquired Dow Chemical Company's calcium chloride operations, the world's largest.

2008: Oxy signed agreements for various projects in the Middle East/North Africa region, including an agreement to develop gas fields and to explore for potential new discoveries in the Sultanate of Oman. In the U.S., Oxy purchased interests in the Permian and Piceance basins.

2007: The giant Dolphin Project, one of the largest energy projects ever undertaken in the Middle East, became fully operational and currently delivers natural gas to customers in the United Arab Emirates and Oman. Oxy has been a partner in the Dolphin Project since 2002.

2006: Oxy acquired production assets from Vintage Petroleum in Latin America, California and the Middle East. OxyChem acquired chemical assets in the U.S. from Vulcan Materials Company.

2005: Oxy signed an agreement with Libya's National Oil Company to re-enter the country to participate in exploration and production operations.

2004: Oxy signed a new production-sharing contract for the Mukhaizna oilfield, one of the largest in Oman.

2000: The purchase of Altura Energy, Ltd., in the Permian Basin of West Texas and southeast New Mexico made Oxy the largest oil producer in Texas.

1998: Oxy became the largest natural gas producer in California with the purchase of the U.S. Department of Energy's 78-percent interest in Elk Hills Naval Petroleum Reserve.

Cell: O11**Comment:** Rick Heede:

Oil and natural gas production for 1958 from Occidental Petroleum (1959) Annual Report, p.1.

Cell: G12**Comment:** Rick Heede:

Total net worldwide crude oil plus natural gas liquids produced by each company or state-owned enterprise. Where data is available, we list net production. Crude production includes natural gas liquids (NGL) unless noted.

Cell: L12**Comment:** Rick Heede:

Natural gas is typically reported as dry gas; natural gas liquids are reported under crude oil. Carbon dioxide is normally removed from the gas flow at the production site (see "Vented Carbon Dioxide"). "SCM/d" = standard cubic meters per day. "cf/d" = cubic feet per day. Net production typically excludes a number of diverted gas streams. Quantities and fractions vary; ExxonMobil's exclusions are probably typical of the industry: "Net production available for sale quantities are the volumes withdrawn from ... natural gas reserves, excluding royalties and volumes due to others when produced, and excluding gas purchased from others, gas consumed in producing operations, field processing plant losses, volumes used for gas lift, gas injections and cycling operations, quantities flared, and volume shrinkage due to the removal of condensate or natural gas liquids production." ExxonMobil Corporation (2004) 2003 Financial and Operating Review, www.exxonmobil.com, p. 55.

Cell: E25**Comment:** Rick Heede:

Oil and natural gas production for 1958 from Occidental Petroleum (1959) Annual Report, p.1.

Cell: E26**Comment:** Rick Heede:

Sum of interpolated oil production 1959-1969 is 1,325 million bbl .

Cell: B28**Comment:** Rick Heede:

Oil & Gas Journal OGJ150, Sep13 and Sep14.

Cell: D37**Comment:** Rick Heede:

Occidental Petroleum Corporation 1971 Annual Report, p. 6, shows daily and annual crude oil production, but no data on condensate or NGL (or natural gas, for that matter). Nor does the report state whether production is net or gross, or includes oil produced for the Libyan Government (which is shown in the 1974 AnnRpt).

Cell: N37**Comment:** Rick Heede:

Have 1970 and 1979 AnnRpts Ten Year Summaries, but financial data only, no production data. Coal sales are shown back to 1961 (\$79.8 million, compared to 262.2 million in 1970).

Cell: N38**Comment:** Rick Heede:

Occidental Petroleum Corporation 1975 Annual Report, Island Creek Coal Division, p. 34, shows coal production 1971-1975 and marketed coal by rank: of the total mined in 1975 (19.421 million tons), 11.067 million tons was utility coal, 2.494 million tons industrial and retail, and 2.329 (domestic) plus 4.416 million tons (export) metallurgical coal (coal sales totaled 20.306 million tons).

Cell: D39**Comment:** Rick Heede:

Occidental Petroleum Corporation 1974 Annual Report, Statistical Highlights, shows crude oil production (net or gross is not stated). CMS has NOT included reported crude oil produced for the Government of Libya: 53,000 bbl per day in 1972, 112,000 in 1973, and 164,000 bl per day in 1974.

Cell: I39**Comment:** Rick Heede:

Occidental Petroleum Corporation 1974 Annual Report, Statistical Highlights, shows natural gas production in million cf per day for 1972-1974.

Cell: D42**Comment:** Rick Heede:

Production data (disaggregated by region and not summed) for 1975-1979 from Occidental Petroleum (1980) Annual Report, p. 16.

Cell: I42**Comment:** Rick Heede:

Production data (disaggregated by region and not summed) for 1975-1979 from Occidental Petroleum (1980) Annual Report, p. 16.

Cell: N42**Comment:** Rick Heede:

Coal production data 1975-1984 from various company annual reports.

Cell: D46**Comment:** Rick Heede:

Oxy reports production by region, but (apparently) reports total production for several joint projects rather than Oxy's equity production. We had to calculate equity production in 1979 (for example) at 353,000 bbl/d vs total production of 838,000 bbl/d.

Cell: N47**Comment:** Rick Heede:

Occidental Petroleum Corporation Annual Report for 1984, p. 16, mentions "Occidental's Island Creek coal operations." CMS does not have later annual reports and do not know the date of divestiture.

Occidental also refers to joint development of the Ping Shuo coal mine in PR China, with Occidental interest of 25 percent, Bank of China trust 25 percent, and China National Coal Development Corporation holding 50 percent.

Cell: B49**Comment:** Rick Heede:

Oxy acquired Cities Service 1982 (no data available in Oil & Gas Journal)

Cell: N52

Comment: Rick Heede:
Occidental coal production does not show up in any EIA Coal Industry Annual or Keystone Coal Industry Manual 1983-fwd.

Cell: F57

Comment: Rick Heede:
• 1983: Vintage Petroleum is incorporated (Tulsa). • 1990: Initial public offering of stock is completed. • 1992: First California properties are acquired. • 1995: Company makes first acquisitions in Argentina. • 1996: Company makes first acquisitions in Bolivia. • 1998: Ecuador and Yemen interests are added. • 2000: First Canadian property is acquired. Approximately 60 percent of its total production is generated in North America, with nearly an equal split between gas and oil production.

Cell: D67

Comment: Rick Heede:
Occidental's annual reports are among the most obscure in the industry; the company only reports combined oil & gas in oil equivalent units. This year 2000 datum is thousand BOE.

Cell: E69

Comment: Rick Heede:
Original data from Occidental (2004) SEC Form 10-K, p. 4.

The table shows the following footnotes:

Oil "includes natural gas liquids and condensate."

Oil production also includes "Occidental's share of reserves and production from equity investees in Russia and Yemen, partially offset by minority interests for a Colombian affiliate" of 9 million bbl in 2004, 10 in 2003, and 8 in 2002.

Cell: D75

Comment: Rick Heede:
2008-2010 data from Occidental AR 2010 page 83 (pdf p.98), production volumes per day, including occidental's Argentine operations as "held for sale".

Cell: J75

Comment: Rick Heede:
Occidental Annual Report 2010, page 83 (production data, including gas production "held for sale" 2008-2010.

Cell: O75

Comment: Rick Heede:
Occidental Annual Report 2010 page 3 (pdf page 19).

Cell: E77

Comment: Rick Heede:
Oil & Gas Journal OGJ150 3Oct2011, page 38 shows 201 million bbl world production.

Cell: J78

Comment: Rick Heede:
Occidental 2013 AnnRpt and 10-K, production of natural gas, page 23. Sum of North America, Latin America, and Middle East/ North Africa, in thousand cf per day.

Cell: D81

Comment: Rick Heede:
Occidental Form 10-K for 2015, page 23, reports oil and NGL production per day in the U.S., Latin America, Middle East, and North Africa.
Reported production in 2013 (equal to $153+54+29+179+7+36=458$ thousand bbl per day) is lower than reported in 2013 10-K (558 k bbl /d), presumably due to sale of assets.

Cell: J81

Comment: Rick Heede:
Occidental Form 10-K for 2015, page 23, reports Natural Gas production per day in the U.S., Latin America, Middle East, and North Africa.

Cell: D83

Comment: Rick Heede:
Occidental Petroleum Form 10-K for 2018, page 91, oil and NGL production in US, Latin America and Middle East, in thousand bpd (clmns D and E, respectively). Total crude oil in 2018 is 419 kbpd, NGL 98 kbpd: 189 Mb for the year.

Cell: J83

Comment: Rick Heede:
Occidental Petroleum Form 10-K for 2018, page 91, oil and NGL production in US, Latin America and Middle East, in million cfpd. In 2018, US gas 327 Mcfpd, Latin America 6 Mcfpd, Middle East 511 Mcfpd. For the year: 308 Bcf.

Cell: N83

Comment: Rick Heede:
Occidental Petroleum SEC form 10-K 2016, page 22. US crude oil & NGL 189+53 Kbpd, Colombia 33 Kbpd, Middle East & North Africa 161 + 28 Kbpd, plus 28 Kbpd in discontinued operations.

Cell: N85

Comment: Rick Heede:
Chevron to buy Anadarko in a cash-and-stock deal worth \$33 billion, in a deal led by Paul Weiss, Wachtell, Vinson & Elkins. Occidental unveiled a competing \$57 billion cash-and-stock offer. Bidding war w Chevron? Chevron abandoned bid for Anadarko in May 2019; refuses to better Occidental's bid of \$38 billion. Acquisition approved by Oxy BoD on 8Aug2019, transaction valued at \$55 billion.