### Crude Oil & NGL

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**Note:** The data represents the net production for each year, providing a comprehensive view of crude oil and NGL extraction by BP over the past century.
### Natural gas extraction data

**Richard Heede**  
**Climate Mitigation Services**  
File started: 1 January 2005  
Last modified: April 2013

#### Natural Gas

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#### Key statistics

- **Total reserves:** 99,802 [Billion cf/yr]
- **Total oil and gas:** 37,910 [Billion cf/yr]
- **Crude oil and gas reserves:** 22,227 [Billion cf/yr]

#### Environmental emissions

- **BP:** 1,154 [Billion cf/yr]
- **Amoco:** 1,354 [Billion cf/yr]
- **ARCO:** 1,109 [Billion cf/yr]
- **Sohio:** 1,086 [Billion cf/yr]

#### Gas sales

- **BP:** 5,066 [Billion cf/yr]
- **Amoco:** 1,354 [Billion cf/yr]
- **ARCO:** 1,109 [Billion cf/yr]
- **Sohio:** 1,086 [Billion cf/yr]

#### Oil Gas Adnoc_Encana.xls

- **BP:** Last modified: April 2013
- **Richard Heede**

#### Summary

- **BP Annual Report and Notes 2008:**
- **BP Annual Report 2009:**
- **BP Annual Report 2010:**

**Note:** The table provides data on gas and oil production, sales, and environmental emissions from various companies over different years. The data is presented in billions of cubic feet per year (Billion cf/yr).
### Coal extraction data

**Richard Heede**

**Climate Mitigation Services**

File started: 11 January 2005  
Last modified: 11 November 2011

**BP, UK**

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| Total | 595 | 171 | 171 | 276 | 431 | 276 |

**OffGasAdnoc_Encana.xls**
Standard acquired a minority interest in Midwest in 1920, when Midwest controlled 65 percent of Wyoming oil production, which totaled 16.83 million bbl in 1920 (=16.83 * 0.65 * 0.38). By 1923, Standard had increased its equity interest to 99.5 percent. Production rose to 0.2344 million bbl in 1920 and to 0.3887 million bbl per yr in 1922. Giddens, 1955, p. 218.

Standard acquired Dixie Oil Company in 1919. Standard's chairman Robert W. Stewart led an effort during tightening oil supplies after World War One to acquire crude oil supplies. Dixie was the first acquisition, and was producing ~500 bbl per day, chiefly in Indiana. CMS coverts long tons to million bbl per year (1 tonne = 1.016047 long tons, 1 tonne = 7.3 barrels. Anglo Persian's production in 1918 through 1924 is from annual reports (Guildford Library in London, courtesy of Peter Roderick). Also annual report 1930-1949, with interpolation for missing data years 1925-1929, inclusive. CMS uses the field production data above, which references production of 7,500 bbl per day in one of two producing fields. Note: Standard Oil (Indiana) started acquiring stock in Midwest Refining Company in 1920. Midwest owned production wells, refineries, and pipelines in Wyoming; Standard also owned a cracking plant at Casper.

Rick Heede:

Note by CMS: this is a curious quantification inasmuch as the 7,500 bbl per day equal annual production of 2.738 million bbl, which, if metric tonnes, = 373,465 tonnes, if short tons then 411,671 tons. In other words, the bbl to ton conversion used by Mr. Greenway is a ton 1.205 times metric tonnes. Perhaps the Anglo-Persian accounting department used Imperial gallons (1 imp gal = 1.20595 US gallons), which is non-standard (the barrel equals 42 US gallons and a measure originating in the oilfields of Pennsylvania).

With regard to the present refinery... You will remember that last year the figures given showed a gradual increase in throughput from a monthly average of 1,344,000 gallons for the quarter which ended in December 1912, to 2,890,000 gallons for the quarter which ended in September 1913. to show the progress since that date I mention that the throughput - For the 3 months ended December last averaged 3,200,000 gallons monthly.

For March: 3,189,000 gallons monthly.
For June: 4,911,000 gallons monthly.
For September: 5,287,000 gallons monthly.
Whilst for the month of October it was 7,410,000 gallons.

CMS uses the field production data above, which references production of 7,500 bbl per day in one of two producing fields. Since a total is not given, CMS assumes total average production of 12,000 bbl per day, or 4.38 million bbl in 1913. CMS interpolates between 1913 and 1918. CMS dispenses the refinery throughput data since it does not reference whether Anglo-Persian’s own production is being refined.

BP

American companies and

American companies and

American companies and

American companies and
Oil Gas Adnoc Encana.xls

BP

CMS allocates 50 percent of Richfield and later ARCO production to British Petroleum, and the other 50 percent to ConocoPhillips. These companies each acquired significant assets from ARCO. An asset allocation has not been done; instead we have assumed an equal allocation to each company.

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CMS allocates 50 percent of Richfield and later ARCO production to British Petroleum, and the other 50 percent to ConocoPhillips. These companies each acquired significant assets from ARCO. An asset allocation has not been done; instead we have assumed an equal allocation to each company.
Richfield reports 9.3 million gross production and 7.2 million bbl net (0.774).

Comment: Richfield Oil Corporation does not report gross or net production for 1943 but does report net production of 8.236 million bbl in 1944, "an increase of approx 11% over ... 1943." This is used to estimate net production in 1943; production is halved in order to allocate half to BP and half to ConocoPhilips.

Comment: Standard Oil Company (Indiana) Annual Report 1944, reports net (64.69 million bbl) and gross (74.01 million bbl) crude oil production. While the company owns 6,813 oil wells and 236 gas wells, no gas production is reported. The company does report purchases of crude oil of 130 million bbl in 1945; net oil production is 0.874 of gross in 1945. Standard also reports "natural gasline produced" of 0.70 million bbl in 1945, which CMS adds to reported crude oil production.

Comment: Standard Oil Company (Indiana) Annual Report 1947, reports net (71.81 million bbl) and gross (85.73 million bbl) and "operated" (52.39 million bbl) crude oil production. While the company owns 7,772 oil wells and 579 gas wells, no gas production is reported. The company does not report purchases of crude oil for 1947 but does report refinery runs of 135 million bbl for the year; net oil production is 0.858 of gross in 1947. Standard also reports "natural gasline produced" of 0.95 million bbl in 1947, which CMS adds to reported crude oil production.

Comment: Richfield reports net of 0.794 of gross (11.305 million bbl).

Comment: Standard Oil Corporation (Indiana) reports net production for 1948, and net production of 40.652 million bbl rose to 64.736 million bbl in 1959 and to 110.064 million bbl in 1968. Half of this, as explained above, is allocated to BP and half to ConocoPhilips for each company's acquisition of ARCO assets.

Comment: Richfield reports net of 8.236 million bbl in 1944 but does not report net production for 1945. Refinery runs are shown, however, and we use the net production/refinery run relationship for the year known (1944: 8.236 net production/21.598 refinery runs = 0.382) times the reported refinery runs for 1945 (25.851 million bbl times 0.382 = 9.666 million bbl estimated net production in 1945.


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Comment: Richfield reports 9.3 million gross production and 7.2 million bbl net (0.774).

Comment: Richfield reports net of 0.794 of gross (11.305 million bbl).

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Comment: Rick Heede:
Crude oil production for 1956 and 1957 from BP Ltd (1960) Annual Report and Accounts for 1959. Converted from long tons to million bbl/day in column J.

Cell: DG2
Comment: Rick Heede:

Cell: JE4
Comment: Rick Heede:

Cell: HS4
Comment: Rick Heede:
What is shown below, however, is all of Atlantic’s, Richfield’s, and ARCO’s natural gas sales. Estimates are allocated equally to BP and ConocoPhillips in the annual total column (Bcf/yr), in the case column AA.

Cell: G55
Comment: Rick Heede:
Atlantic (1959) Annual Report for 1958. Data for “crude oil production, bbl per day, net.”

Cell: AO51
Comment: Rick Heede:
CMS allocates 50 percent of Atlantic, Richfield, and ARCO production to British Petroleum, and the other 50 percent to ConocoPhillips. These companies each acquired significant assets from ARCO, although an asset allocation has not been done; instead we have assumed an equal allocation to each company.

Cell: D54
Comment: Rick Heede:

Cell: JE4
Comment: Rick Heede:

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**Comment:** Rick Heede:


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Standard Oil Company (Ohio) Annual Report 1979, Operating Statistics, shows "net production - crude oil and natural gas liquids, barrels per day" for 1970 through 1979. The large production jump in 1977 is probably North Slope operations coming on line.

**Comment:** Rick Heede:

ARCO annual report 1980 shows "crude oil and NGL production - net bbl per day" for 1976-1980. CMS shows total ARCO liquids production in this column, but attributes half of the total to each BP and ConocoPhillips in the ARCO column reporting total annual production in million bbl yr.

**Comment:** Rick Heede:


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Our photocopy of BP annual report for 1978 might be missing pages on which coal sales or production is stated.

**Comment:** Rick Heede:


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Oil & Gas Journal OGJ400 for 1984, 1985, and 1986. OGJ lists the company as "Standard Oil Company" and "Standard Oil Company (Ohio)."

**Comment:** Rick Heede:

Sohio data is interpolated for 1980-1983.

**Comment:** Rick Heede:


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**Comment:** Rick Heede:

BP gas sales.

**Comment:** Rick Heede:


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**Comment:** Rick Heede:

Natural gas sales United States, million cf per day.

**Comment:** Rick Heede:

Oil & Gas Journal OGJ400 for 1984, 1985, and 1986. OGJ lists the company as "Standard Oil Company" and "Standard Oil Company (Ohio)."

**Comment:** Rick Heede:


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Natural gas sales domestic and foreign, million cf per day.

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BP gas sales.

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**Comment:** Rick Heede:

absorption, chemical, or biological degradation (i.e., assumes 100 percent of gas is methane and all reaches the atmosphere).

CMS: If we assume mid-point USGS leakage estimate of 30,000 bbl per day and that half is captured by BP’s LMRP Cap ... further assume that the oil-gas ratio is the same for captured and escaped hydrocarbons, then 31.2 MMcf times (15,000/15

BP.com Accessed 12Jun10, 4:36 pm MST, Gulf of Mexico Response / Subsea operational update: For the last 12 hours on June ... approximately 7,835 barrels of oil were collected and 15.7 million cubic feet of natural gas were flared. On Ju

CMS will investigate the gas-oil ratio and estimate methane content and fraction reaching the surface and atmosphere. See Ari Leifer, UC-SB, and FRTG Plume Team. CMS calcs below preliminary:

Spill is on-going, flow rate estimates increasing (USGS 20,000 to 40,000 bbl per day), re-assessment by National Incident Command Flow Rate Technical Group under way.

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Rick Heede (Jun10):

M116

U115

BP AR 2010, pg 55, total subsidiaries and equity accounted entities

Rick Heede:

U112

D112

Oil & Gas Journal OGJ100, 17Sep07, p. 41.

J111

U110

Rick Heede:

AN109

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www.bp.com/extendedsectiongenericarticle.do?categoryId=2011564&contentId=2017151) shows emissions from coal production ... during 2003) resulting in emissions of 15 million tonnes CO2. This suggests mining (at CMS carbon content 


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Rick Heede:

AA106

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d.

Rick Heede:

K106


We break down the emissions in the following way:

Coal (divested during 2003): 15 million tonnes CO2

Fuel and lubricants: 590 million tonnes CO2

Gas: 810 million tonnes CO2

Petroleum products: 83 million tonnes CO2

These estimates indicate that GHG emissions from BP products sold (including coal, oil based products, gas and chemicals) are about 15 times greater than from BP operations. Emissions from products sold are greater than from the oil and gas we extract because we purchase additional oil and gas for refining, processing and retail. * * *

Total: 1,298 million tonnes CO2. (≈ 354 MTC; m.c.f. est 2001 = 120 MTC oil = gas only).

BP Annual Report 2004, p.58, “In 2003, the group sold its 50% interest in Kaltim Prima Coal, an Indonesian company.” No coal production data is reported. However, in BP’s report on “BP Product emissions” (see


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Rick Heede:

J111

Rick Heede:

M118


We allocate 50 percent of ARCO to BP and 50 percent to Phillips Petroleum, which acquired ARCO in 1999. 1999 ARCO total gas production = 868 Bcf.

Cell: B106

Cell: B108

Rick Heede:

U113

BP AR 2010, pg 55, total subsidiaries and equity accounted entities

Rick Heede:

U115

BP AR 2010, pg 55, total subsidiaries and equity accounted entities

Cell: B115

Cell: B117

BP AR 2010 pdf pg 56, total subsidiaries and equity accounted entities

Cell: M114

Knosovsky went BP brief (which values spilled oil (1,888 m³ in 2006 at 15 million GBP) or $1,681/bbl, for BP’s Maconds blow out in the Gulf (at USGS Best Case 20,000 bbl/day, or 1.06 million bbl through day 53, or $1.78 billion. Calculation by CMS.

Spill is on-going, flow rate estimates increasing (USGS 20,000 to 40,000 bbl per day), re-assessment by National Incident Command Flow Rate Technical Group under way. CMS will investigate the gas-oil ratio and estimate methane content and fraction reaching the surface and atmosphere. See Ari Leifer, UC-SB, and FRTG Plume Team. CMS calcs below preliminary.

BP.com Accessed 12Jun10, 4:36 pm MST, Gulf of Mexico Response / Subsea operational update: For the last 12 hours on June 11 (noon to midnight), approximately 7,835 barrels of oil were collected and 15.7 million cubic feet of natural gas were flared. On June 11, a total of approximately 15,550 barrels of oil were collected and 31.2 million cubic feet of natural gas were flared. Total oil collected since the LMRP Cap containment system was implemented is approximately 104,500 barrels. Operations were stable.

CMS: If we assume mid-point USGS leakage estimate of 30,000 bbl per day and that half is captured by BP’s LMRP Cap containment system, further assume that the oil-gas ratio is the same for captured and escaped hydrocarbons, then 31.2 MMcf times (15,000/15 = 1,000) or 0.9646 = 30.15 MCF gas escapes per day, times 53 days to date = 1,555 Bcf. 1 Bcf, if combusted, equals 0.00026 MTCO2. However, as methane (CH4, CO2) equals 1.545 MTCO2. Daily rate of 0.031 Bcf = 0.00082 MTCO2 if combusted or 0.0045 MTCO2 as methane. Compare BP’s gas production in 2008 (3,044 Tcf) and emissions of 177 MTCO2 (daily rate of 0.485 MTCO2, 10.7% times Gulf gas spill rate of methane as CO2). Not adjusted for transit time of natural gas from wellhead to surface, nor for non-methane in gas-flue, nor CH absorption, chemical, or biological degradation (i.e., assumes 100 percent of gas is methane and all reaches the atmosphere).

OilGasAdnoc_Encana.xls