Trefethen Intelligence

October 2016

Oil & Gas Upstream Market Monthly Newsletter

Trefethen Advisors, LLC is pleased to bring you this monthly edition of its monthly market update. This periodical is designed to provide current information on the public equity markets, oil & gas upstream markets, supply & demand trends, M&A activity as well as market and sector commentary. If you would like to add any colleagues to this newsletter, please contact Brian Humenesky at bhumenesky@trefethenib.com

Market Summary

Stocks were lower in October as uncertainity surrounding the U.S. Presidential Election and mixed earnings results led stocks lower. Overall, S&P 500 and NASDAQ indexes declined 1.94% and 2.31%, respectively. By the end of the month, Oil prices hit one-month lows on doubts about OPEC following through with projected production cuts, erasing the 13% percent gain after OPEC announced on Sept. 27 modest production cuts. OPEC is hoping to finalize how much each individual member should cut at the Nov. 30 meeting; however, agreement amongst the members has been difficult to achieve with Iran and Iraq reluctant to freeze output. WTI and Brent Crude Oil traded down 2.9% and 3.1% during October falling from \$48.24 to \$46.86 and \$50.19 to \$48.61, respectively.



Trefethen Advisors

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About Trefethen Advisors, LLC

Trefethen Advisors is a privately held investment bank. Trefethen is unique in its ability to maximize value for its clients by providing strategy-led, consultative investment banking services in situations requiring specialized industry, analytical, and/or structuring expertise. We offer skilled transaction execution capabilities and a full range of financial and strategic advisory services:

- Mergers & Acquisitions (Buy-Side & Sell-Side)
- Corporate Finance
- Financial Restructuring and Distressed M&A
- ESOP Buyouts

Corporate Finance resources Include:

- Family Offices
- Venture Capital
- Debt/Sub-Debt
- Private Equity
- Financial Companies
- Sale-Leaseback Financing

For more company information, please visit our website at www.trefethenib.com

For more Oil & Gas information, please contact Brian Humenesky at

bhumenesky@trefethenib.com

Trefethen Intelligence Money & Commodity Markets

Treasury Rates

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
1-Year	0.66%	0.66%	0.59%	0.56%	0.34%
10-Year	1.84%	1.77%	1.60%	1.83%	2.16%
30-Year	2.58%	2.52%	2.32%	2.66%	2.93%
1M Libor	0.44%	0.53%	0.53%	0.19%	0.53%
3M Libor	0.88%	0.88%	0.85%	0.64%	0.33%

During October, treasury rates rose and speculation grew that the Fed will raise the federal funds rate in December.

Despite the increase, some fear the 10-year rate may soon — be testing resistance. The long-term trend for rates remains Oct '11 uncertain, but should become more clear post-election.

10-Year Treasury Yield



EUR/USD

Exchange Rates

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
GBP/USD	1.22	1.22	1.30	1.46	1.55
EUR/USD	1.10	1.09	1.12	1.15	1.10
USD/JPY	105.14	104.24	101.28	106.85	120.76
USD/CNY	6.78	6.78	6.67	6.48	6.32

In currencies, the U.S. Dollar has carried the breakout into its 4th consecutive week and has been trading higher than most other major currencies.

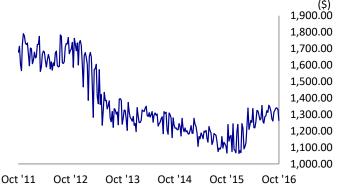


Commodity Markets

	10/31/2016	- 1 Wk.	- 1 Mo.	- 6 Mo.	- 12 Mo.
Crude Oil	47.46	50.52	48.82	45.92	46.59
Gold	1,273.1	1,263.7	1,317.1	1,290.5	1,141.4
Silver	17.80	17.60	19.21	17.82	15.57
Wheat	4.16	4.02	4.02	4.88	5.22
Corn	46.86	50.52	48.24	45.92	46.59

During the month of October, Crude Oil ran into a key level of resistance at \$52 a barrel. However, by the end of the month, it hit one-months low on doubts about OPEC's planned production cuts and a build in U.S. crude inventories.

GOLD



Source: Capital IQ

Trefethen Intelligence Energy Specific Market

110.5

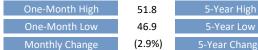
27.5

0.0

Oct '16

WTI Crude Oil

Oct '11





Oct '14

Oct '15

Brent Crude Oil

One-Month High	53.1	5-Year High
One-Month Low	48.6	5-Year Low
Monthly Change	(3.1%)	5-Year Change



Henry Hub Natural Gas

Oct '13

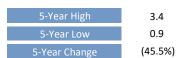
Oct '12

	_		
One-Month High	3.7	5-Year High	5.5
One-Month Low	2.9	5-Year Low	1.6
Monthly Change	9.9%	5-Year Change	(21.2%)



Monthly Change



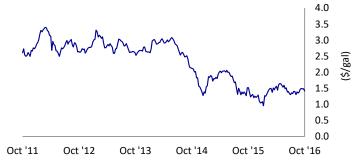


125.3

27.9

(55.6%)





Coal (Central Appalachian)

One-Month High	40.0	5-Year High	74.0
One-Month Low	40.0	5-Year Low	39.5
Monthly Change	0.0%	5-Year Change	(45.9%)



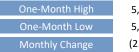
GDP Growth Forecast 1

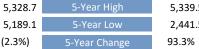
Region	2016E	2017P	Region	2016E	2017P
Global	2.4%	2.8%	China	6.7%	6.5%
United States	1.9	2.2	Brazil	(4.0)	(0.2)
Euro Area	1.6	1.6	Japan	0.5	0.5

Source: Capital IQ, ¹World Bank

Trefethen Intelligence **Equity Market Index**

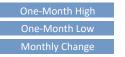
NASDAQ Index

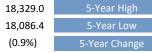




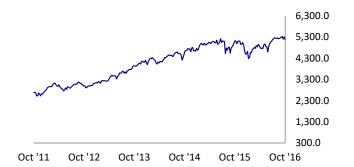


Dow Jones Industrial Average Index



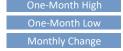


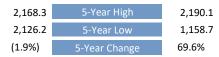




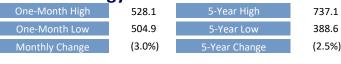


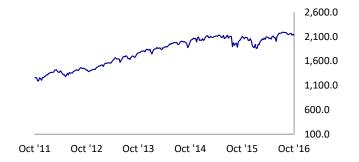
S&P 500 Index

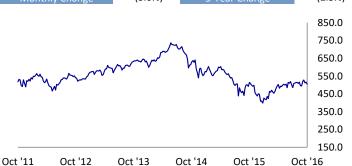












S&P Global Energy Index

One-Month High	33.6	5-Year High	49.5
One-Month Low	32.4	5-Year Low	23.9
Monthly Change	(1.2%)	5-Year Change	(16.4%)

Dow Jones U.S. Oil & Gas Index



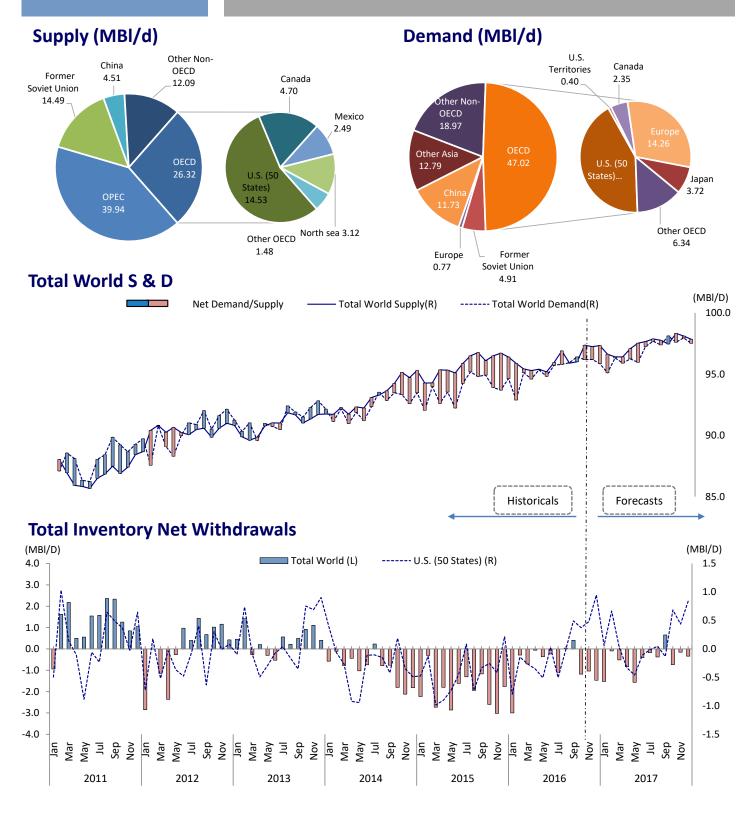




Source: Capital IQ



Trefethen Intelligence Fuel* Supply & Demand



Source: EIA, Short-Term Energy Outlook released on November 8, 2016

^{*}Fuel includes crude oil, natural gas plant liquids, biofuels, other liquids, and refinery processing gains

Trefethen Intelligence Industry Statistics

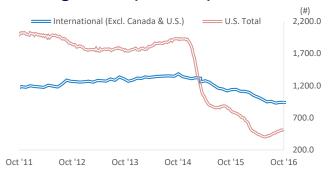
Rig Counts by Category

	#########	1/1/2016	- 1 Mo.	- 1 Yr.
U.S. Total	557	698	511	787
U.S. Oil	441	536	418	594
U.S. Gas	114	162	92	193
International (Excl. Canada & U.S.)	920	1045	934	1111
Horizontal / Directional	504	609	451	678
Vertical	53	89	60	109

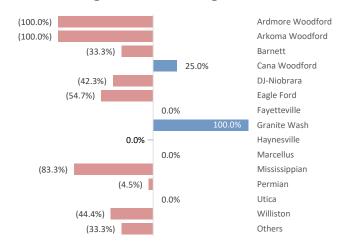
Rig Count by Region (Oil + Gas)

	########	1/1/2016	- 1 Mo.	- 1 Yr.
Ardmore Woodford	0	2	1	2
Arkoma Woodford	4	8	3	8
Barnett	3	7	1	6
Cana Woodford	41	38	33	36
DJ-Niobrara	15	23	16	27
Eagle Ford	33	76	37	77
Fayetteville	1	1	0	4
Granite Wash	10	15	9	12
Haynesville	20	25	13	26
Marcellus	36	41	30	43
Mississippian	2	12	3	12
Permian	212	217	201	229
Utica	15	15	15	22
Williston	35	53	28	64
Others	130	165	121	219
Total	557	698	511	787

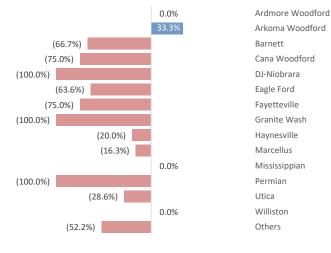
Total Rig Counts (Oil + Gas)



TTM Change in U.S. Oil Rig Count



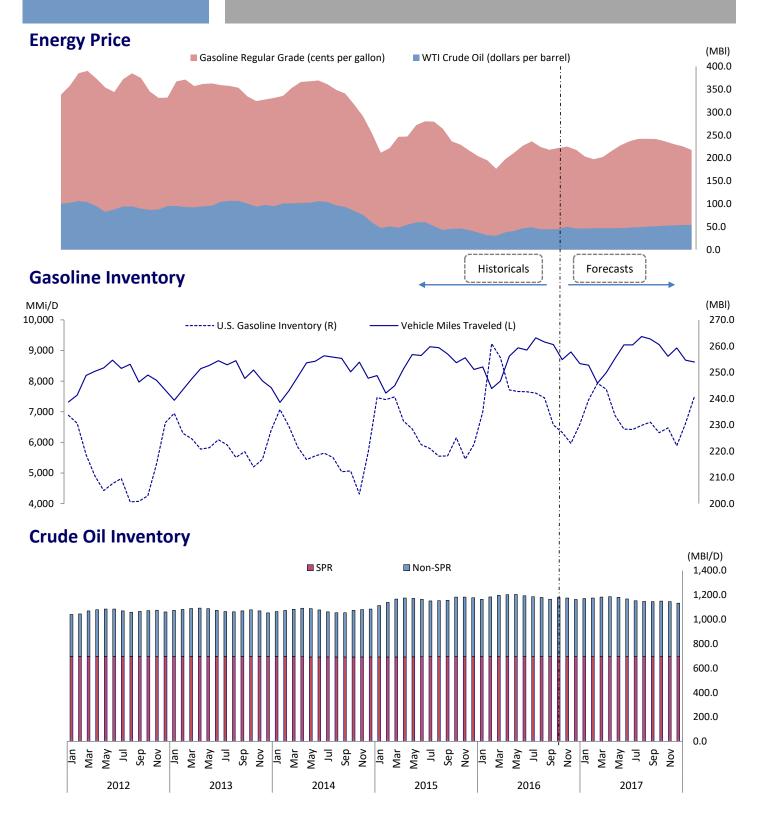
TTM Change in U.S. Gas Rig Count



Source: Baker Hughes

Oil & Gas Market Monthly Newsletter

Trefethen Intelligence Industry Statistics (II)



Source: EIA, Short-Term Energy Outlook released on November 8, 2016

Equity	Market
(\$MM, Except per Share E	Data)

									EV / EB	ITDA	EBITDA	Margin	Net Deht	/ EBITDA	P /		
curity	Ticker	Latest FY Ended	Last 10/31/16	52 Wk. High	52 Wk. Low	% of 52 Wk. high	Market Cap	Enterprise Value	CY15A	CY16E	CY15A	CY16E	CY15A	CY16E	CY15A	CY16E	_ D
l & Gas Drilling	rienci	Lilaca	10/01/10		2011	***************************************	Сар	varae									
CONSOL Energy Inc.	NYSE:CNX	12/31/2015	17.0	20.3	5.0	83.7%	3,889	7,234	7.5x	11.1x	23.9%	27.7%	4.9x	4.7x	NM	NM	
Chevron Corporation		12/31/2015	104.8	107.0	79.0	97.9%	198,375	252,463	7.3x	11.4x	19.6%	18.5%	1.0x	1.7x	24.5	79.9	
Diamond Offshore Drilling, Inc.		12/31/2015	16.5	26.1	14.8	63.2%	2,262	4,506	4.7x	7.1x	44.2%	40.7%	2.0x	3.3x	8.2	17.6	
Ensco plc		12/31/2015	7.8	18.3	6.6	42.6%	2,371	7,547	4.7x	6.3x	52.6%	45.8%	2.7x	3.5x	3.5	6.4	
				69.8													
Helmerich & Payne, Inc.	NYSE:HP	9/30/2015	63.1		42.9	90.5%	6,858	8,298	4.3x	18.4x	35.9%	28.3%	(0.2x)	(0.8x)	15.6	NM	
Nabors Industries Ltd.		12/31/2015	11.9	13.3	5.5	89.7%	3,372	7,032	5.2x	11.6x	29.2%	27.5%	3.0x	5.4x	NM	NM	
Occidental Petroleum Corporation			72.9	78.3	59.6	93.1%	55,698	67,211	10.1x	18.5x	45.0%	34.0%	0.9x	1.4x	567.4	NM	
Rowan Companies plc		12/31/2015	13.3	20.9	11.2	63.5%	1,664	5,347	4.2x	6.6x	48.0%	46.8%	2.2x	2.0x	4.8	8.1	
Transocean Ltd.		12/31/2015	9.6	16.9	8.2	57.0%	3,511	14,634	3.6x	8.8x	44.3%	44.5%	2.0x	3.4x	3.1	11.4	
Exxon Mobil Corporation	NYSE:XOM	12/31/2015	83.3	95.1	73.2	87.6%	345,528	403,189	9.1x	11.9x	15.0%	15.1%	0.9x	1.2x	20.1	35.6	
erage							62,353	77,746	6.0x	11.2x	35.8%	32.9%	1.9x	2.6x	80.9	26.5	
edian							3,700	7,922	4.9x	11.3x	40.0%	31.1%	2.0x	2.6x	11.9	14.5	
8 Gas Equipments and Service																	
Baker Hughes Incorporated	NYSE:BHI		55.4	59.1	38.9	93.7%	23,430	30,266	12.1x	58.0x	11.5%	5.3%	0.9x	(1.4x)	NM	NM	
FMC Technologies, Inc.	NYSE:FTI	12/31/2015	32.3	35.5	22.8	91.0%	7,283	9,637	7.1x	18.4x	15.2%	11.5%	0.2x	0.4x	12.6	34.8	
Halliburton Company	NYSE:HAL	12/31/2015	46.0	49.1	28.5	93.7%	39,807	55,455	8.3x	26.5x	17.6%	13.1%	1.3x	4.3x	21.9	NM	
National Oilwell Varco, Inc.	NYSE:NOV	12/31/2015	32.1	39.9	26.3	80.4%	12,124	16,920	6.4x	61.9x	15.5%	3.8%	0.8x	6.2x	11.6	NM	
Schlumberger Limited	NYSE:SLB	12/31/2015	78.2	83.9	61.1	93.3%	109,077	134,167	10.6x	20.5x	27.7%	23.0%	1.7x	2.7x	20.5	72.1	
Weatherford International plc	NYSE:WFT	12/31/2015	4.8	11.3	4.8	42.8%	4,324	12,315	10.4x	41.2x	13.9%	5.2%	5.4x	23.6x	NM	NM	
erage							32,674	43,127	9.1x	37.7x	16.9%	10.3%	1.7x	6.0x	16.6	53.4	
edian							17,777	23,593	9.3x	33.8x	15.3%	8.4%	1.1x	3.5x	16.6	53.4	
I & Gas Refining & Marketing																	
Kinder Morgan, Inc.	NYSE:KMI	12/31/2015	20.4	27.5	12.0	74.3%	45,607	87,802	10.1x	12.2x	52.5%	53.7%	5.7x	5.7x	20.5	31.2	
Marathon Petroleum Corporation	NYSE:MPC	12/31/2015	43.6	59.3	30.7	73.5%	23,157	41,994	6.6x	9.6x	9.5%	7.0%	1.6x	2.2x	8.7	17.8	
ONEOK Inc.		12/31/2015	48.4	51.4	18.9	94.2%	10,191	23,129	12.2x	13.4x	18.5%	20.2%	6.2x	5.3x	16.1	29.1	
Phillips 66		12/31/2015	81.2	93.7	72.9	86.6%	42,484	55,085	6.7x	12.4x	7.4%	4.9%	0.8x	1.5x	10.5	22.6	
Spectra Energy Corp.		12/31/2015	41.8	44.0	22.0	95.1%	29,336	49,511	12.3x	17.4x	52.5%	53.8%	5.3x	5.2x	20.7	35.8	
				118.2											7.4		
Tesoro Corporation		12/31/2015	85.0		68.6	71.9%	10,146	18,910	4.7x	8.2x	13.7%	8.9%	0.8x	1.4x		15.4	
Valero Energy Corporation		12/31/2015	59.2	73.0	47.2	81.1%	27,330	43,022	4.3x	8.8x	10.2%	6.7%	0.4x	0.6x	7.4	15.4	
	NYSE:WMB	12/31/2015	29.2	40.3	11.2	72.5%	21,926	56,086	13.1x	13.3x	55.8%	59.9%	5.9x	5.8x	47.6	42.9	
erage							26,272	46,942	8.8x	11.9x	27.5%	26.9%	3.3x	3.5x	17.4	26.3	
															Net Proved Reserves	TEV / Proved Reserves	
•															Proved Reserves (MMboe)	Proved Reserves [MMboe]	
Apache Corp.	NYSE:APA	12/31/2015	59.5	64.7	34.4	92.0%	22,568	34,000	6.6x	11.3x	61.2%	56.9%	1.9x	2.5x	Proved Reserves (MMboe)	Proved Reserves (MMboe) 21.7x	
Apache Corp. Anadarko Petroleum Corporation	NYSE:APA NYSE:APC	12/31/2015	59.5 59.4	64.7 70.8	30.5	92.0% 83.9%	22,568 33,221	58,245	6.6x 12.4x	15.7x	61.2% 40.4%	56.9% 45.3%	1.9x 4.7x	2.5x 3.7x	Proved Reserves (MMboe) 1,564 2,057	Proved Reserves [MMboe]	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation	NYSE:APA NYSE:APC NYSE:AR	12/31/2015 12/31/2015		70.8 30.1	30.5 19.1			58,245 14,491							Proved Reserves (MMboe) 1,564 2,057 2,202	Proved Reserves (MMboe) 21.7x	
Apache Corp. Anadarko Petroleum Corporation	NYSE:APA NYSE:APC NYSE:AR	12/31/2015 12/31/2015	59.4	70.8	30.5	83.9%	33,221	58,245	12.4x	15.7x	40.4%	45.3%	4.7x	3.7x	Proved Reserves (MMboe) 1,564 2,057	Proved Reserves (MMboe) 21.7x 28.3x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM	12/31/2015 12/31/2015	59.4 26.5	70.8 30.1	30.5 19.1	83.9% 87.9%	33,221 8,314	58,245 14,491	12.4x 9.9x	15.7x 10.3x	40.4% 30.9%	45.3% 56.4%	4.7x 3.8x	3.7x 3.4x	Proved Reserves (MMboe) 1,564 2,057 2,202	Proved Reserves (MMboe) 21.7x 28.3x 6.6x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P.	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK	12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5	70.8 30.1 18.9	30.5 19.1 10.8	83.9% 87.9% 92.7%	33,221 8,314 3,343	58,245 14,491 3,701	12.4x 9.9x 11.5x	15.7x 10.3x 13.9x	40.4% 30.9% 63.9%	45.3% 56.4% 88.5%	4.7x 3.8x 0.2x	3.7x 3.4x 1.1x	Proved Reserves (MMboe) 1,564 2,057 2,202 50	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG	12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5	70.8 30.1 18.9 8.1	30.5 19.1 10.8 1.6	83.9% 87.9% 92.7% 68.4%	33,221 8,314 3,343 4,827	58,245 14,491 3,701 17,804	12.4x 9.9x 11.5x 6.6x	15.7x 10.3x 13.9x 14.6x	40.4% 30.9% 63.9% 19.1%	45.3% 56.4% 88.5% 30.5%	4.7x 3.8x 0.2x 4.1x	3.7x 3.4x 1.1x 7.9x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9	70.8 30.1 18.9 8.1 26.5	30.5 19.1 10.8 1.6 15.0	83.9% 87.9% 92.7% 68.4% 78.8%	33,221 8,314 3,343 4,827 9,717	58,245 14,491 3,701 17,804 11,738	12.4x 9.9x 11.5x 6.6x 11.5x	15.7x 10.3x 13.9x 14.6x 20.3x	40.4% 30.9% 63.9% 19.1% 60.1%	45.3% 56.4% 88.5% 30.5% 47.6%	4.7x 3.8x 0.2x 4.1x 2.5x	3.7x 3.4x 1.1x 7.9x 1.8x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips	NYSE:APA NYSE:APC NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5	70.8 30.1 18.9 8.1 26.5 56.7	30.5 19.1 10.8 1.6 15.0 31.9	83.9% 87.9% 92.7% 68.4% 78.8% 76.6%	33,221 8,314 3,343 4,827 9,717 53,813	58,245 14,491 3,701 17,804 11,738 86,878	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Nasd	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP daqGS:CRZO NYSE:CXO	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8	70.8 30.1 18.9 8.1 26.5 56.7 42.9	30.5 19.1 10.8 1.6 15.0 31.9 18.4	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 78.9%	33,221 8,314 3,343 4,827 9,717 53,813 2,212	58,245 14,491 3,701 17,804 11,738 86,878 3,549	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Nasad Concho Resources, Inc.	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP laqGS:CRZO NYSE:CXO NYSE:CXO	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 78.9% 89.5%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc.	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP IdaqGS:CRZO NYSE:CXO NYSE:DNR NYSE:DVN	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 78.9% 89.5% 51.1%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation	NYSE:APA NYSE:APC NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP dagGS:CRZO NYSE:CXO NYSE:DNR NYSE:DVN NYSE:EGN	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 78.9% 89.5% 51.1% 79.3%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x	Proved Reserves (MMboe) 1,564 2,057 50 1,504 1,365 8,180 171 623 289 2,182	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc.	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP (aqGS:CRZO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:DVN NYSE:GN NYSE:GOG	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118	Proved Reserves (MMbbe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Concophillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP (aqGS:CRZO NYSE:CXO NYSE:CXO NYSE:DVN NYSE:BDN NYSE:BOR NYSE:EOG	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2	83.9% 87.9% 92.7% 68.4% 76.6% 78.9% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcooPhillips Carrizo Oil & Gas Inc. Nasd Concho Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP lagGS:CRZO NYSE:CXO NYSE:CXO NYSE:DVN NYSE:DVN NYSE:BN NYSE:BOG NYSE:EGO NYSE:EPE NYSE:EQT	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7	83.9% 87.9% 92.7% 68.4% 76.6% 78.9% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x 1.1x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcooPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Nasde	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP lagGS:CRZO NYSE:CXP NYSE:DVN NYSE:DVN NYSE:DVN NYSE:BOG NYSE:EQC aqGS:FANG	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0 91.3	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6	83.9% 87.9% 92.7% 68.4% 76.6% 78.9% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2% 86.8%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 5,879 58,028 4,735 19,297 8,110	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x 1.1x 1.0x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Nasde Output Nasde Nasde Output Nas	NYSE:APA NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP lagGS:CRZO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:EGN NYSE:EGN NYSE:EGC NYSE:EQC aqGS:FANG aqGS:GPOR	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0 91.3 24.1	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2% 86.8% 70.5%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 9.7x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x 1.1x 1.0x 2.3x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 2,185 546 1,564 157 284	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Nasde Gulfport Energy Corp. Hess Corporation	NYSE:APA NYSE:APC NYSE:APC NYSE:APC NYSE:CHK NYSE:COG NYSE:COP laqGS:CRZO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EQT laqGS:FANG laqGS:GPOR NYSE:HES	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 66.0 91.3 24.1 48.0	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2% 86.8% 70.5% 75.7%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023 15,051	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348 26,995	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 9.7x 20.3x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.0x 1.1x 1.0x 2.9x 1.1x 4.3x 4.3x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 2.1x 3.8x 0.9x 1.0x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157 284 1,086	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x 24.9x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation EOG Resources, Inc. EP Energy Corporation EQT Corporation EQT Corporation Diamondback Energy, Inc. Masde Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd.	NYSE:APA NYSE:APC NYSE:APC NYSE:APC NYSE:CHK NYSE:COG NYSE:COP (aqGS:CRZO NYSE:CXO NYSE:CXO NYSE:CXO NYSE:DVN NYSE:DVN NYSE:EOG NYSE:EQT (aqGS:FANG aqGS:FANG aqGS:GPOR NYSE:ESS NYSE:ESS	12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 4.6 66.0 91.3 24.1 48.0 5.2	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4 3.5	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2% 86.8% 70.5% 75.7% 66.7%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023 15,051 2,012	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348 26,995 3,442	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 9.0x 11.3x 9.7x 20.3x 35.3x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x 16.9x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 59.1% 102.3% 51.0% 14.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 68.8% 68.2% 76.2% 29.1% 40.5%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.0x 1.0x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 2.1x 3.8x 0.9x 1.0x 1.4x 2.8x 6.0x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157 284 1,086 76	Proved Reserves (MMboe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x 24.9x 45.1x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Cabot Oil & Gas Inc. ConcoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation GUT Corporation Gulfport Energy, Inc. Masde Mess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc.	NYSE:APA NYSE:ASM NYSE:BSM NYSE:CHK NYSE:COG NYSE:COO	12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 46.6 91.3 24.1 48.0 5.2	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8 13.6	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4 3.5 4.1	83.9% 87.9% 92.7% 68.4% 76.6% 78.9% 89.5% 51.1% 79.3% 81.4% 92.9% 86.8% 70.5% 75.7% 66.7%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023 15,051 2,012 2,869	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348 26,995 3,442 4,252	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.4x 11.0x 9.0x 11.3x 9.7x 20.3x 35.3x 6.5x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.5x 15.9x 23.5x 10.5x 19.8x 16.9x 10.2x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.0x 1.5x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x 2.9x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 2.1x 3.8x 0.9x 1.0x 1.4x 2.8x 6.0x 3.2x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 1,564 1,086 76 126	Proved Reserves (MMDooe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 12.3x 51.7x 15.3x 24.9x 45.1x 33.8x	
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Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Masde Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation	NYSE:APA NYSE:APC NYSE:AR NYSE:GHK NYSE:COP logGS:CCZO NYSE:CDN NYSE:CDN NYSE:CDN NYSE:DVN NYSE:EDVN NYSE:EDC NYSE:EQT logGS:GPOR NYSE:EQT logGS:GPOR NYSE:LPI NYSE:LPI NYSE:LPI NYSE:LPI NYSE:LPI NYSE:LPI NYSE:LPI NYSE:LPI	12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0 91.3 24.1 48.0 5.2 11.9 13.2	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8 13.6 19.7 36.2	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4 4.1 6.7 15.8	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 78.9% 89.5% 81.4% 92.9% 52.0% 83.2% 86.8% 70.5% 66.7% 87.8% 67.0%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023 15,051 2,012 2,869 11,167 4,455	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348 26,995 3,442 4,252 20,398 8,202	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 9.0x 11.3x 9.7x 20.3x 35.3x 6.5x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x 10.5x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 11.0% 14.0% 15.5% 77.8% 54.7% 40.6%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 76.2% 33.3% 45.6%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x 2.9x 1.9x 2.3x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x 4.0x 0.9x 1.0x 2.8x 6.0x 3.2x 3.7x 2.6x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157 284 1,086 76 126 2,163 774	Proved Reserves (MMDoe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x 24.9x 45.1x 33.8x 9.4x 10.6x	
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Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcooPhillips Carrizo Oil & Gas Inc. Devon Energy Corporation Energy Corporation Energy Corporation Energy Corporation EQT Corporation EQT Corporation EQT Corporation EQT Corporation Wasde Gulfport Energy Corp. Masde Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc.	NYSE:APA NYSE:APC NYSE:APC NYSE:APC NYSE:CHK NYSE:COF lagGS:CRZO NYSE:COP lagGS:CRZO NYSE:CN NYSE:DVN NYSE:BOF NYSE:EQT agGS:FANG agGS:GPOR NYSE:HES NYSE:LPI NYSE:MRO NYSE:MRO NYSE:MBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NDC	12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 437.9 50.1 90.4 3.6 66.0 91.3 24.1 48.0 5.2 11.9 13.2 25.9 34.5 40.6 10.5 60.0 60	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8 13.6 19.7 36.2 38.7 47.2	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4 3.5 4.1 6.7 15.8 25.7 22.3 4.3	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 51.1% 79.3% 81.4% 92.9% 52.0% 83.2% 86.8% 75.7% 66.7% 87.8% 67.0% 71.4% 89.1% 86.0%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 3,023 15,051 2,012 2,869 11,167 4,455 14,773 7,988 2,480 3,500	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 5,879 58,028 4,735 19,297 8,110 4,348 26,995 3,442 4,252 20,398 8,202 24,807 10,896 4,619 5,742	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 9.7x 20.3x 35.3x 4.5x 4.5x 4.5x 4.5x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 11.0x 4.3x 5.4x 4.5	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x 16.9x 10.2	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9% 68.7%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 73.3% 45.6% 64.6% 59.3% 67.5%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.1x 1.0x 1.5x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x 2.9x 1.9x 2.3x 3.9x 2.3x 3.9x 2.3x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x 1.4x 2.8x 6.0x 3.7x 2.6x 2.6x 2.2x 4.3x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157 284 1,086 76 126 2,163 774 1,421 509 218	Proved Reserves (MMDoe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x 24.9x 45.1x 33.8x 9.4x 10.6x 17.5x 21.4x 21.2x	
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Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcooPhillips Carrizo Oil & Gas Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Associated Surporation Mosmos Energy Corp. Massociated Surporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc. PDC Energy, Inc. Possociated Surporation Passey Energy, Inc. Possociated Surporation Noble Energy, Inc. Possociated Surporation Noble Energy, Inc. Possociated Surporation Possociated Surporation Noble Energy, Inc. Possociated Surporation Noble Energy, Inc. Possociated Surporation Noble Energy, Inc. Possociated Surporation Possociated Surporation Noble Energy, Inc. Possociated Surporation Noble Energy Inc. Possociated Surporation No	NYSE:APA NYSE:APC NYSE:APC NYSE:APC NYSE:CHK NYSE:COP lagGS:CRZO NYSE:COP NYSE:COP NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EQT agGS:FANG agGS:GPOR NYSE:HES NYSE:HES NYSE:HES NYSE:HEN NYSE:MBL NYSE:MBL NYSE:MBL NYSE:NFX NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE	12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0 91.3 24.1 48.0 5.2 11.9 13.2 25.9 34.5 40.6 10.5 61.3 32.9 179.0	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8 13.6 19.7 36.2 38.7 47.2 13.0 69.4 36.8 193.2	30.5 19.1 10.8 1.6 15.0 31.9 18.4 72.5 1.0 60.2 1.7 47.8 57.6 20.3 34.4 3.5 4.1 67.7 15.8 25.7 22.3 4.3 45.7 15.7	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9% 66.7% 87.8% 67.7% 67.4% 89.1% 89.1% 89.1% 89.4% 92.6%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 4,866 49,993 899 11,424 7,125 3,023 15,051 2,012 2,869 11,473 4,455 14,773 7,988 2,480 3,500 5,909	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 47,35 19,297 8,110 4,348 26,995 3,442 4,252 20,398 8,202 24,807 10,896 4,619 5,742 7,769 34,500	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 8.7x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 9.7x 20.3x 35.3x 6.5x 4.5x 4.5x 4.5x 11.0x 3.6x 9.0x 11.3x 9.7x 20.3x 4.5x 4.5x 4.5x 4.5x 4.5x 4.5x 5.4x 11.0x 3.6x 9.0x 11.5x 6.5x 4.5x 6.5x	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x 16.9x 10.2x 14.3x 9.5x 10.6x 12.4x 12.4x 12.4x 13.8x 13.8x 14.6x 15.9x 16.6x 16.6x 17.0x 17.0x 18.0x 19.0x 19.0x 19.0x 10.0x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 40.6% 57.9% 68.7% 103.9% 74.4% 73.4% 36.2%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 50.9% 39.1% 105.5% 68.2% 76.2% 29.1% 40.5% 78.5% 33.3% 45.6% 64.6% 59.3% 67.5%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.11x 1.0x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x 2.9x 2.1x 2.1x 1.0x 2.3x 4.3x 8.0x 2.9x 1.5x 1.1x 1.3x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x 1.4x 2.8x 6.0x 3.2x 2.6x 2.6x 2.2x 4.3x (0.3x) 1.1x 1.2x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 157 284 1,086 76 126 2,163 774 1,421 509 218 273 124 664	Proved Reserves (MMDoe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 8.7x 12.3x 51.7x 15.3x 24.9x 45.1x 33.8x 9.4x 10.6x 17.5x 21.4x 21.2x 21.0x 62.7x 51.9x	
Apache Corp. Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Cabot Oil & Gas Inc. ConocoPhillips Carrizo Oil & Gas Inc. Denbury Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Gulfport Energy Corp. Maradio Marchia Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Casis Petroleum Inc. PDC Energy, Inc. Proserver, Inc.	NYSE:APA NYSE:APC NYSE:BSM NYSE:CHK NYSE:COP NYS	12/31/2015 12/31/2015	59.4 26.5 17.5 5.5 20.9 43.5 33.8 126.9 2.4 37.9 50.1 90.4 3.6 66.0 91.3 24.1 48.0 5.2 11.9 13.2 25.9 34.5 40.6 10.5 61.3 32.9 179.0 33.8	70.8 30.1 18.9 8.1 26.5 56.7 42.9 141.9 4.7 47.8 61.6 97.4 6.8 79.3 105.2 34.2 63.4 7.8 13.6 19.7 36.2 38.7 47.2 13.0 69.4 36.8 193.2 46.5	30.5 19.1 10.8 1.6 15.0 31.9 18.7 22.9 60.2 1.7 47.8 57.6 20.3 34.4 3.5 4.1 6.7 15.8 25.7 22.3 4.3 4.3 57.6 20.3	83.9% 87.9% 92.7% 68.4% 78.8% 76.6% 89.5% 51.1% 79.3% 81.4% 92.9% 86.8% 70.5% 67.7% 87.8% 67.0% 88.8% 89.4% 92.6% 72.7%	33,221 8,314 3,343 4,827 9,717 53,813 2,212 17,900 939 19,839 4,866 49,993 899 11,424 7,125 2,869 11,167 4,455 14,773 7,988 2,480 3,500 5,909 30,383 8,239	58,245 14,491 3,701 17,804 11,738 86,878 3,549 21,800 3,928 37,984 5,879 58,028 4,735 19,297 8,110 4,348 26,995 3,442 4,252 20,398 8,202 24,807 10,896 4,619 5,742 7,769 34,500 12,066	12.4x 9.9x 11.5x 6.6x 11.5x 12.7x 6.5x 4.3x 5.3x 5.4x 11.0x 3.6x 9.0x 11.3x 20.3x 35.3x 6.5x 4.5x 5.4x 11.6x 7.2x 4.0	15.7x 10.3x 13.9x 14.6x 20.3x 16.0x 9.3x 13.8x 9.8x 16.6x 20.5x 20.9x 4.7x 15.9x 23.5x 10.5x 19.8x 16.6x 24.7x 10.5x 10.5x 10.6x	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 64.7% 40.6% 57.9% 68.7% 103.9% 74.4% 73.4% 36.2% 91.9%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5% 33.3% 45.6% 64.6% 67.5% 88.8% 71.7% 54.6% 48.6%	4.7x 3.8x 0.2x 4.1x 2.5x 3.5x 2.7x 1.8x 3.5x 2.10x 1.0x 2.9x 1.1x 1.0x 2.3x 4.3x 8.0x 2.9x 2.3x 3.9x 2.3x 3.5x 1.1x 1.0x 3.1x 3.1x 3.1x	3.7x 3.4x 1.1x 7.9x 1.8x 4.5x 3.5x 1.0x 7.5x 4.0x 0.4x 2.1x 3.8x 0.9x 1.0x 2.6x 2.6x 2.6x 4.0x 2.6x 2.6x 2.1x 3.8x 2.6x 2.6x 2.5x 4.3x 4.5x 4.5x 4.5x 4.5x 4.5x 4.5x 5.6x	Proved Reserves (MMboe) 1,564 2,057 2,202 50 1,504 1,365 8,180 171 623 289 2,182 355 2,118 546 1,564 1,564 1,564 1,564 1,421 509 218 273 124 664 1,543	Proved Reserves (MMDoe) 21.7x 28.3x 6.6x 74.3x 11.8x 8.6x 10.6x 20.8x 35.0x 13.6x 17.4x 16.6x 27.4x 8.7x 12.3x 51.7x 15.3x 24.9x 45.1x 33.8x 9.4x 10.6x 17.5x 21.2x 21.0x 62.7x 51.9x 7.8x	
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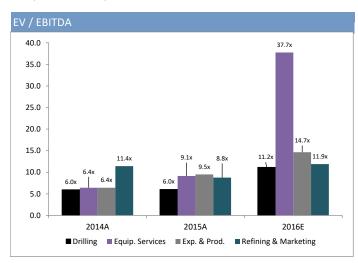
Equity Markets (Cont.')

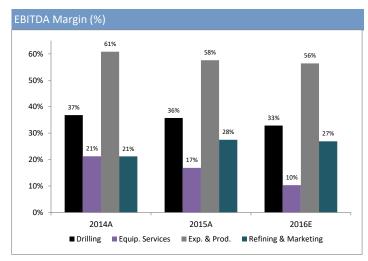
urity	Ticker	Revenue			Revenue Growth		EBITDA			EBITDA Margin			Avg. Margin		
		2014	2015	2016E	'14-'15	'15-'16E	2014 2015 2016E			2014	2015	'14-'15 '15-'16E			
Oil & Gas Drilling		2 727			4	4									
CONSOL Energy Inc.	NYSE:CNX	3,727	3,114	2,348	(16.4%)	(24.6%)	1,053	745	650	28.3%	23.9%	27.7%	26.1%	25.89	
Chevron Corporation	NYSE:CVX	211,970 2,815	138,477	119,437	(34.7%)	(13.7%)	47,995	27,139	22,067	22.6%	19.6%	18.5%	21.1%	19.0	
Diamond Offshore Drilling, Inc.	NYSE:DO	4,565	2,419	1,566	(14.0%)	(35.3%)	1,202	1,069	637	42.7%	44.2%	40.7%	43.5%	42.49	
Ensco plc	NYSE:ESV	3,720	4,063	2,614	(11.0%)	(35.7%)	2,356	2,137	1,198	51.6%	52.6%	45.8%	52.1%	49.2	
Helmerich & Payne, Inc.	NYSE:HP	6,798	3,165	1,599	(14.9%)	(49.5%)	1,559	1,136	452	41.9%	35.9%	28.3%	38.9%	32.1	
Nabors Industries Ltd. Occidental Petroleum Corporation	NYSE:NBR	22,666	3,867 12,480	2,210 10,689	(43.1%)	(42.9%)	1,743	1,127	607	25.6%	29.2%	27.5%	27.4%	28.3	
	NYSE:OXY	1,824			(44.9%)	(14.3%)	13,255	5,611	3,634	58.5%	45.0%	34.0%	51.7%	39.5 47.4	
Rowan Companies plc Transocean Ltd.	NYSE:RDC NYSE:RIG	9,174	2,137 6,953	1,728 3,752	17.1% (24.2%)	(19.1%) (46.0%)	709 3,790	1,026 3,083	809 1,669	38.9% 41.3%	48.0% 44.3%	46.8% 44.5%	43.4% 42.8%	44.4	
Exxon Mobil Corporation	NYSE:XOM	411,939	268,882	223,330	(34.7%)	(16.9%)	69,213	40,325	33,801	16.8%	15.0%	15.1%	15.9%	15.1	
Average	WISEXOW	67,920	44,556	36,927	(22.1%)	(29.8%)	14,288	8,340	6,552	36.8%	35.8%	32.9%	36.3%	34.3	
Median		5,681	3,965	2,481	(20.3%)	(29.9%)	2,049	1,636	1,003	40.1%	40.0%	31.1%	40.9%	35.8	
Oil & Gas Equipments and Service	<u>s</u>														
Baker Hughes Incorporated	NYSE:BHI	24,551	15,742	9,784	(35.9%)	(37.8%)	4,843	1,815	522	19.7%	11.5%	5.3%	15.6%	8.4	
FMC Technologies, Inc.	NYSE:FTI	7,943	6,363	4,559	(19.9%)	(28.3%)	1,299	967	522	16.3%	15.2%	11.5%	15.8%	13.3	
Halliburton Company	NYSE:HAL	32,870	23,633	15,944	(28.1%)	(32.5%)	7,174	4,155	2,095	21.8%	17.6%	13.1%	19.7%	15.4	
National Oilwell Varco, Inc.	NYSE:NOV	21,440	14,757	7,177	(31.2%)	(51.4%)	4,586	2,283	274	21.4%	15.5%	3.8%	18.4%	9.6	
Schlumberger Limited	NYSE:SLB	48,580	35,475	28,356	(27.0%)	(20.1%)	13,825	9,820	6,534	28.5%	27.7%	23.0%	28.1%	25.4	
Weatherford International plc	NYSE:WFT	14,911	9,433	5,787	(36.7%)	(38.6%)	2,974	1,307	299	19.9%	13.9%	5.2%	16.9%	9.	
Average Median		25,049 22,996	17,567 15,250	11,935 8,481	(29.8%) (29.6%)	(34.8%) (35.2%)	5,783 4,715	3,391 2,049	1,708 522	21.3% 20.7%	16.9% 15.3%	10.3% 8.4%	19.1% 17.7%	13. 11.	
viedidii		22,550	13,230	0,401	(23.6%)	(33.2%)	4,715	2,049	322	20.7%	13.3%	8.4%	17.7%	11.	
Oil & Gas Refining & Marketing															
Kinder Morgan, Inc.	NYSE:KMI	16,226	14,403	13,345	(11.2%)	(7.3%)	6,502	7,562	7,173	40.1%	52.5%	53.7%	46.3%	53.3	
Marathon Petroleum Corporation	NYSE:MPC	98,102	72,258	62,489	(26.3%)	(13.5%)	5,377	6,856	4,391	5.5%	9.5%	7.0%	7.5%	8.	
ONEOK Inc.	NYSE:OKE	12,195	7,763	8,572	(36.3%)	10.4%	1,438	1,434	1,732	11.8%	18.5%	20.2%	15.1%	19.	
Phillips 66	NYSE:PSX	164,093	100,949	90,550	(38.5%)	(10.3%)	7,183	7,502	4,438	4.4%	7.4%	4.9%	5.9%	6.	
Spectra Energy Corp.	NYSE:SE	5,903	5,234	5,285	(11.3%)	1.0%	3,146	2,746	2,843	53.3%	52.5%	53.8%	52.9%	53.	
Tesoro Corporation	NYSE:TSO	40,633	28,711	25,767	(29.3%)	(10.3%)	2,288	3,924	2,299	5.6%	13.7%	8.9%	9.6%	11.	
Valero Energy Corporation	NYSE:VLO	130,844	87,804	73,397	(32.9%)	(16.4%)	7,370	8,990	4,911	5.6%	10.2%	6.7%	7.9%	8.	
Williams Companies, Inc.	NYSE:WMB	7,637	7,360	7,058	(3.6%)	(4.1%)	3,320	4,104	4,231	43.5%	55.8%	59.9%	49.6%	57.8	
Average		59,454 28,430	40,560	35,808	(23.7%)	(6.3%)	4,578	5,390	4,002	21.2%	27.5%	26.9%	24.4%	27.2	
Median		20,430	21,557	19,556	(27.8%)	(8.8%)	4,349	5,480	4,311	8.7%	16.1%	14.6%	12.4%	15.3	
Oil & Gas Exploration and Product	<u>tion</u>														
Apache Corp.															
Apacile Corp.	NYSE:APA	13,851	6,366	5,288	(54.0%)	(16.9%)	15,258	3,896	3,009	110.2%	61.2%	56.9%	85.7%	59.	
Anadarko Petroleum Corporation	NYSE:APA NYSE:APC	13,851 18,470	6,366 8,698	5,288 8,204	(54.0%) (52.9%)	(16.9%) (5.7%)	15,258 11,689	3,896 3,513	3,009 3,713	110.2% 63.3%	61.2% 40.4%	56.9% 45.3%	85.7% 51.8%		
														59. 42. 43.	
Anadarko Petroleum Corporation	NYSE:APC	18,470	8,698	8,204	(52.9%)	(5.7%)	11,689	3,513	3,713	63.3%	40.4%	45.3%	51.8%	42.	
Anadarko Petroleum Corporation Antero Resources Corporation	NYSE:APC NYSE:AR	18,470 2,721	8,698 3,955	8,204 2,506	(52.9%) 45.4%	(5.7%)	11,689 1,162	3,513 1,221	3,713 1,412	63.3% 42.7%	40.4% 30.9%	45.3% 56.4%	51.8% 36.8%	42. 43. 76.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P.	NYSE:APC NYSE:AR NYSE:BSM	18,470 2,721 -	8,698 3,955 393	8,204 2,506 301	(52.9%) 45.4% NA	(5.7%) (36.6%) (23.3%)	11,689 1,162 -	3,513 1,221 251	3,713 1,412 267	63.3% 42.7% NM	40.4% 30.9% 63.9%	45.3% 56.4% 88.5%	51.8% 36.8% NM	42. 43. 76. 24.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK	18,470 2,721 - 20,951	8,698 3,955 393 12,764	8,204 2,506 301 3,987	(52.9%) 45.4% NA (39.1%)	(5.7%) (36.6%) (23.3%) (68.8%)	11,689 1,162 - 5,084	3,513 1,221 251 2,435	3,713 1,412 267 1,217	63.3% 42.7% NM 24.3%	40.4% 30.9% 63.9% 19.1%	45.3% 56.4% 88.5% 30.5%	51.8% 36.8% NM 21.7%	42. 43.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG	18,470 2,721 - 20,951 2,173	8,698 3,955 393 12,764 1,357	8,204 2,506 301 3,987 1,214	(52.9%) 45.4% NA (39.1%) (37.5%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%)	11,689 1,162 - 5,084 1,295	3,513 1,221 251 2,435 815	3,713 1,412 267 1,217 578	63.3% 42.7% NM 24.3% 59.6%	40.4% 30.9% 63.9% 19.1% 60.1%	45.3% 56.4% 88.5% 30.5% 47.6%	51.8% 36.8% NM 21.7% 59.8%	42. 43. 76. 24. 53. 21.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP	18,470 2,721 - 20,951 2,173 55,517	8,698 3,955 393 12,764 1,357 30,935	8,204 2,506 301 3,987 1,214 25,044	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%)	11,689 1,162 - 5,084 1,295 21,729	3,513 1,221 251 2,435 815 6,348	3,713 1,412 267 1,217 578 5,440	63.3% 42.7% NM 24.3% 59.6% 39.1%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7%	51.8% 36.8% NM 21.7% 59.8% 29.8%	42. 43. 76. 24. 53. 21. 71.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc.	NYSE:APC NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO	18,470 2,721 - 20,951 2,173 55,517 697	8,698 3,955 393 12,764 1,357 30,935 623	8,204 2,506 301 3,987 1,214 25,044 538	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%)	11,689 1,162 - 5,084 1,295 21,729 533	3,513 1,221 251 2,435 815 6,348 455	3,713 1,412 267 1,217 578 5,440 380	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8%	42. 43. 76. 24. 53. 21. 71. 94.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO NYSE:CXO	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566	8,698 3,955 393 12,764 1,357 30,935 623 1,804	8,204 2,506 301 3,987 1,214 25,044 538 1,692	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033	3,513 1,221 251 2,435 815 6,348 455 1,713	3,713 1,412 267 1,217 578 5,440 380 1,577	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7%	42. 43. 76. 24. 53. 21. 71. 94.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CR2O NYSE:CXO NYSE:DNR	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370	3,513 1,221 251 2,435 815 6,348 455 1,713 939	3,713 1,412 267 1,217 578 5,440 380 1,577 400	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7%	42. 43. 76. 24. 53. 21. 71. 94. 46.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CR2O NYSE:CXO NYSE:DNR NYSE:DVN	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%) (23.0%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3%	42 43 76 24 53 21 71 94 46 31 67	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP Nasdaq6S:CR2O NYSE:CXO NYSE:CXO NYSE:DNR NYSE:DVN NYSE:DVN NYSE:EGN	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%) (23.0%) (35.8%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4%	42 43 76 24 53 21 71 94 46 31 67	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CR2O NYSE:CXO NYSE:DNR NYSE:DVN NYSE:EGN NYSE:EGN	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9%	42 43 76 24 53 21 71 94 46 31 67 42	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO NYSE:CNO NYSE:DNR NYSE:DVN NYSE:EGN NYSE:EGO NYSE:EOG	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (38.1%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1% 50.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 38.3% 70.4% 47.9% 68.1%	42 43 76 24 53 21 71 94 46 31 67 42 95	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COO NYSE:CXO NYSE:DNR NYSE:DNR NYSE:BNR NYSE:EGN NYSE:EGN NYSE:EGG NYSE:EPE NYSE:EQT	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (38.1%) (5.3%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 95.0% 40.1% 84.2% 46.6% 86.0% 59.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Concoephillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COO NYSE:COO NYSE:CXO NYSE:DNR NYSE:DVN NYSE:EGN NYSE:EGG NYSE:EGG NYSE:PEE NYSE:EQT NasdaqGS:FANG	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (27.3%) (32.2%) (47.6%) (51.4%) (38.1%) (5.3%) (9.9%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2%	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 50.9% 39.1% 105.5% 68.8% 68.2%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8%	42. 43. 76. 24. 53. 21. 71. 94. 46. 31. 67. 42. 95. 63. 85.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO NYSE:CXO NYSE:DNR NYSE:DNR NYSE:GN NYSE:EGN NYSE:EGE NYSE:PE NYSE:PE NASdaqGS:FANG NasdaqGS:GPOR	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (27.3%) (32.2%) (47.6%) (51.4%) (38.1%) (5.3%) (9.9%) 5.7%	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO NYSE:CXO NYSE:DNR NYSE:DNR NYSE:BON	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (27.3%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.7%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (28.6%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2% 59.6%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 105.5% 68.8% 68.2% 76.2% 29.1%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConocoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Oiamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP NasdaqGS:CRZO NYSE:CNO NYSE:DNR NYSE:DNR NYSE:BON NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EQT NASdaqGS:GPOR NYSE:HES NYSE:HES	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (27.3%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%) (46.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (28.6%) 6.5%	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 68.8% 68.2% 76.2% 29.1% 40.5%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 78	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation EQT Corporation Oiamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP NasdaqGS:CR2O NYSE:CDR NYSE:CWO NYSE:DVN NYSE:BON NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EPE NYSE:EPE NYSE:EQT NasdaqGS:GPOR NYSE:KOS NYSE:KOS NYSE:KOS	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (28.6%) 6.5% (12.5%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7% 75.3%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 78	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP NASCAGGS:CCPO NASCAGGS:CRZO NYSE:DVN NYSE:BON NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:ET NASCAGGS:GPOR NYSE:HES NYSE:HES NYSE:HES	18,470 2,721 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 545 545 545 545 545 545 545 545 54	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (58.1%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%) (47.9%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (28.6%) 6.5% (12.5%) (26.6%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 1,365 204 417 1,430	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7% 75.3% 48.5%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 40.5% 78.5% 33.3%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 51.6%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 78 44 44	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COD NYSE:COO NYSE:DPR NYSE:BOG NYSE:EGN NYSE:EGN NYSE:EQT NSSE:EQT NSSE:EQT NSSE:EQT NSSE:EQT NYSE:HES NYSE:HES NYSE:HES NYSE:HES NYSE:HOI NYSE:MOR	18,470 2,721 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 83 794 11,258 5,476 5,101 2,288	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 531 4,300 1,885	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (58.1%) (5.3%) (5.3%) (46.6%) (46.6%) (23.6%) (47.9%) (44.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (28.6%) (5.5% (12.5%) (26.6%) (37.9%)	11,689 1,162 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2% 62.7% 75.3% 48.5% 59.8%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 95.01 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 40.5% 78.5% 33.3% 45.6%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 51.6% 50.2%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 44 43 61	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COO NYSE:COO NYSE:DVN NYSE:BON NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOT NASdaqGS:FANG NASdaqGS:FANG NYSE:HES NYSE:HES NYSE:HIS	18,470 2,721 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 83 794 11,258 5,476 5,101 2,288 1,390	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 502 531 4,300 1,885 3,633	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%) (47.9%) (44.6%) (38.6%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (3.7%) (6.2%) (43.7%) (50.3%) (24.5%) 13.2% (23.2%) (6.5%) (12.5%) (26.6%) (37.9%) 16.0%	11,689 1,162 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 59.6% 62.7% 75.3% 48.5% 59.8% 62.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 95.01 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5% 33.3% 45.6% 64.6%	51.8% 36.8% NM 21.7% 59.8% 29.8% 29.8% 74.8% 85.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 51.6% 50.2% 60.1%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 44 43 61 64	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co.	NYSE:APC NYSE:AR NYSE:AR NYSE:AR NYSE:CHK NYSE:COG NYSE:C	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 531 4,300 1,885 3,633 1,476	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (53.8%) (42.6%) (42.6%) (42.6%) (44.6%) (38.6%) (31.9%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (26.6%) (37.9%) 16.0% (5.2%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345 876	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 73.2% 62.7% 75.3% 48.5% 59.8% 62.2% 63.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 95.01 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9% 68.7%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 33.3% 45.6% 64.6% 59.3%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 51.6% 50.2% 60.1% 65.9%	42 43 76 24 53 21 71 94 46 31 67 42 95 63 85 63 21 28 44 43 61 64 85	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Concoehillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COO NYSE:CXO NYSE:DVN NYSE:BON NYSE:BON NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOG NYSE:EOT NASdaqGS:FANG NASdaqGS:FANG NYSE:HES NYSE:HES NYSE:HES NYSE:HIN NYSE:MRO NYSE:MRO NYSE:MRO NYSE:MRI	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 1,300 1,885 3,633 1,476 734	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (53.8%) (42.6%) (42.6%) (42.6%) (44.6%) (38.6%) (31.9%) (43.2%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (26.6%) (5.5%) (12.5%) 16.0% (5.2%) (7.0%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345 876 496	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 59.7% 81.2% 73.2% 69.7% 81.2% 73.2% 62.7% 62.7% 62.7% 63.8% 64.5%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9% 68.7%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5% 64.6% 59.3% 64.6%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 39.1% 76.6% 50.2% 60.1% 65.9% 86.2%	424 4376 2445 5321 71 9446 311 677 422 955 633 853 2128 2444 4361 6448 8581	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation Concoephillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COO NYSE:CXO NYSE:DVN NYSE:BON NYSE	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302 5,055	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790 595	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 531 4,300 1,885 3,633 1,476 734 523	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (27.3%) (32.2%) (47.6%) (51.4%) (53.8%) (9.9%) 5.7% (42.6%) (46.6%) (43.6%) (44.6%) (38.6%) (31.9%) (43.2%) (30.5%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (6.2%) (23.0%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (28.6%) 6.5% (12.5%) (26.6%) (37.9%) 16.0% (5.2%) (7.0%) (12.1%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 5,465 5,985 5,465 3,274 3,175 1,445 953 361	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070 820 443	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345 876 496 465	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 59.7% 81.2% 73.2% 59.6% 62.7% 75.3% 48.5% 59.8% 62.2% 63.2% 68.5% 42.2%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9% 68.7%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5% 33.3% 64.6% 59.3% 67.5% 88.8%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 50.2% 60.1% 65.9% 86.2% 58.3%	422 433 766 244 53 211 711 944 466 311 677 422 955 633 856 633 211 288 788 444 443 661 664 858 817 72	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc. PDC Energy, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COP NasdaqGS:CRZO NYSE:DNR NYSE:DNR NYSE:BGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EPI NYSE:EPI NYSE:HES NYSE:HES NYSE:MBL NYSE:MBL NYSE:MBL NYSE:NFX NYSE:NFX NYSE:OAS	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302 5,055 1,992	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790 595	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 531 4,300 1,885 3,633 1,476 734 523 465	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%) (47.9%) (44.6%) (38.6%) (31.9%) (43.2%) (30.5%) (11.8%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (6.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (28.6%) 6.5% (12.5%) (26.6%) (37.9%) 16.0% (5.2%) (7.0%) (12.1%) 74.6%	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445 953 361 206	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070 820 443	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345 876 496 465 333	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7% 75.3% 48.5% 62.2% 68.5% 42.2% 68.5%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.66 57.9% 68.7% 103.9% 74.4%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 29.1% 40.5% 78.5% 33.3% 45.6% 64.6% 65.93% 67.5%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 36.8% 39.1% 76.6% 51.6% 50.2% 60.1% 65.9% 86.2% 58.3% 70.9%	42 43 76 24 53 21 71 71 44 66 31 67 42 95 63 85 32 21 28 44 43 61 64 64 65 85 85 85 85 86 86 86 86 86 86 86 86 86 86 86 86 86	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation EQT Corporation Oiamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc. PDC Energy, Inc. Parsley Energy, Inc.	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP NasdaqGS:CRZO NYSE:COP NasdaqGS:CRZO NYSE:DVN NYSE:BGN NYSE:EGN NYSE:EGN NYSE:EPE NYSE:EPE NYSE:EPE NYSE:EPE NYSE:HES NYSE:MEN NYSE:MEN NYSE:MEN NYSE:MEN NYSE:MEN NYSE:MEN NYSE:NEN NYSE:PE NYSE:PE	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302 5,055	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790 595 266 4,825	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 4,685 502 531 4,300 1,885 3,633 1,476 734 523 465 3,473	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (5.3%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%) (47.9%) (44.6%) (38.6%) (31.9%) (43.2%) (30.5%) (11.8%) (4.5%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (62.2%) (43.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (28.6%) (5.5%) (12.5%) (26.6%) (37.9%) 16.0% (5.2%) (7.0%) (12.1%) 74.6% (28.0%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445 953 361 206 2,525	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070 820 443 195 1,747	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 204 417 1,430 860 2,345 876 465 333 1,896	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 56.3% 36.6% 56.6% 49.1% 50.2% 69.7% 81.2% 73.2% 59.8% 62.2% 63.2% 68.5% 42.2% 68.5% 42.2% 68.3% 50.0%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 14.0% 15.5% 77.8% 54.7% 40.6% 57.9% 68.7% 103.9% 74.4% 73.4%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 29.1% 40.5% 78.5% 33.3% 45.6% 64.6% 59.3% 67.5% 88.8% 71.7%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 62.1% 36.8% 39.1% 76.6% 51.6% 50.2% 60.1% 65.9% 86.2% 58.3% 70.9% 43.1%	42. 43. 76. 24. 53. 21. 71. 42. 95. 63. 85. 63. 61. 64. 85. 81. 72. 45. 70.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Denbury Resources Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc. PDC Energy, Inc. Parsley Energy, Inc. Pioneer Natural Resources Co. Range Resources Corporation	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COP NASCOP NASCOP NASCOP NYSE:COP NYSE:COP NYSE:COP NYSE:COP NYSE:COP NYSE:EGN NYSE:EGN NYSE:EPE NYSE:EPE NYSE:EPE NYSE:EPE NYSE:HES NYSE:MUR NYSE:MUR NYSE:MUR NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:PE NYSE:PE NYSE:PE NYSE:PE NYSE:PE	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302 5,055 1,992 4,038 3,085	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790 595 266 4,825 1,598	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 54,685 502 531 4,300 1,885 3,633 1,476 734 523 465 3,473 1,405	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (27.3%) (32.8%) (47.6%) (51.4%) (58.1%) (9.9%) 5.7% (42.6%) (46.6%) (23.6%) (47.9%) (44.6%) (38.6%) (31.9%) (43.2%) (30.5%) (11.8%) (4.5%) (19.8%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (37.7%) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) (23.2%) (28.6%) (5.5%) (12.5%) (26.6%) (37.9%) (5.0%) (5.2%) (7.0%) (12.1%) (48.6%) (12.1%)	11,689 1,162 - 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445 953 361 206 2,525 1,170	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070 820 443 195 1,747 1,469	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 1,365 204 417 1,430 860 2,345 876 496 465 333 1,896 683	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7% 75.3% 48.5% 59.8% 62.2% 68.5% 42.2% 68.3% 50.0% 58.7%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 53.1% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 14.0% 15.5% 77.8% 54.7% 40.6% 57.8% 54.7% 40.6% 59.9%	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 39.1% 105.5% 68.2% 76.2% 40.55 78.5% 33.3% 45.6% 64.6% 59.3% 67.5% 68.8% 71.7%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 62.1% 36.8% 39.1% 76.6% 50.2% 60.1% 65.9% 86.2% 58.3% 70.9% 43.1% 75.3%	42. 43. 76. 24. 53. 21. 71. 42. 95. 63. 85. 63. 21. 28. 78. 44. 43. 61. 64. 85. 81. 70.	
Anadarko Petroleum Corporation Antero Resources Corporation Black Stone Minerals, L.P. Chesapeake Energy Corporation Cabot Oil & Gas Corporation ConcoPhillips Carrizo Oil & Gas Inc. Concho Resources, Inc. Devon Energy Corporation Energen Corp. EOG Resources, Inc. EP Energy Corporation EQT Corporation EQT Corporation EQT Corporation Diamondback Energy, Inc. Gulfport Energy Corp. Hess Corporation Kosmos Energy Ltd. Laredo Petroleum, Inc. Marathon Oil Corporation Murphy Oil Corporation Noble Energy, Inc. Newfield Exploration Co. Oasis Petroleum Inc. PDC Energy, Inc. Parsley Energy, Inc. Pioneer Natural Resources Co. Range Resources Corporation Southwestern Energy Company	NYSE:APC NYSE:AR NYSE:BSM NYSE:CHK NYSE:COG NYSE:COG NYSE:COG NYSE:COG NYSE:COG NYSE:DNR NYSE:BOR NYSE:BOR NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EGN NYSE:EQT NASdaqGS:FANG NYSE:HES NYSE:MUR NYSE:MUR NYSE:MUR NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:NBL NYSE:PE NYSE:RC NYSE:SWN	18,470 2,721 - 20,951 2,173 55,517 697 2,660 2,435 19,566 1,677 18,035 3,084 2,470 496 671 11,439 883 794 11,258 5,476 5,101 2,288 1,390 856 302 5,055 1,992 4,038	8,698 3,955 393 12,764 1,357 30,935 623 1,804 1,769 13,145 879 8,757 1,908 2,340 447 709 6,561 472 607 5,861 3,033 3,133 1,557 790 595 266 4,825 1,598 3,133	8,204 2,506 301 3,987 1,214 25,044 538 1,692 997 10,120 564 7,093 949 1,767 506 545 502 531 4,300 1,885 3,633 1,476 734 523 465 3,473 1,405 2,409	(52.9%) 45.4% NA (39.1%) (37.5%) (44.3%) (10.5%) (32.2%) (32.8%) (47.6%) (51.4%) (38.1%) (5.3%) (46.6%) (23.6%) (44.6%) (38.6%) (47.9%) (44.6%) (31.9%) (43.2%) (30.5%) (11.8%) (4.5%) (19.8%) (22.4%)	(5.7%) (36.6%) (23.3%) (68.8%) (10.5%) (19.0%) (13.7%) (62.8) (23.0%) (35.8%) (19.0%) (50.3%) (24.5%) 13.2% (23.2%) (26.6%) (37.9%) 16.0% (5.2%) (7.0%) (12.1%) (74.6% (28.0%) (12.1%) (23.1%)	11,689 1,162 5,084 1,295 21,729 533 2,033 1,370 7,164 949 8,862 1,547 1,722 403 492 6,823 554 598 5,465 3,274 3,175 1,445 953 361 206 2,525 1,170 2,315	3,513 1,221 251 2,435 815 6,348 455 1,713 939 5,267 740 4,084 1,641 1,382 457 362 919 73 472 3,206 1,230 1,815 1,070 820 443 195 1,747 1,469 1,237	3,713 1,412 267 1,217 578 5,440 380 1,577 400 2,282 287 2,771 1,001 1,215 345 415 1,365 204 417 1,430 860 2,345 876 496 496 496 496 496 496 496 496 496 49	63.3% 42.7% NM 24.3% 59.6% 39.1% 76.6% 76.4% 56.3% 36.6% 50.2% 69.7% 81.2% 73.2% 59.6% 62.7% 75.3% 48.5% 59.8% 62.2% 68.5% 42.2% 68.5% 42.2% 68.5% 50.0% 58.7% 57.3%	40.4% 30.9% 63.9% 19.1% 60.1% 20.5% 73.0% 95.0% 95.31% 40.1% 84.2% 46.6% 86.0% 59.1% 102.3% 51.0% 51.0% 54.7% 40.6% 57.8% 54.7% 40.6% 57.9% 68.7% 103.9% 103.9% 95.0% 95	45.3% 56.4% 88.5% 30.5% 47.6% 21.7% 70.6% 93.2% 40.1% 22.6% 50.9% 39.1% 105.5% 68.8% 68.2% 76.2% 40.5% 78.5% 33.3% 45.6% 64.6% 59.3% 67.5% 88.8% 67.5%	51.8% 36.8% NM 21.7% 59.8% 29.8% 74.8% 85.7% 54.7% 38.3% 70.4% 47.9% 68.1% 64.4% 91.8% 62.1% 36.8% 39.1% 76.6% 50.2% 60.1% 65.9% 86.2% 58.3% 70.9% 43.1% 75.3% 48.4%	42. 43. 76. 24. 53.	

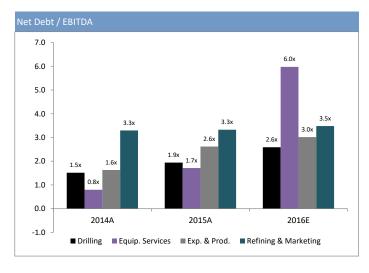
Comparison Graphics: Oil & Gas Upstream

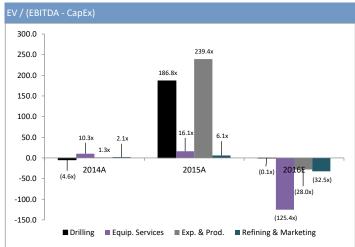
Refining & Marketing 200.00 172.0(+72.0%) SP500 171.7(+71.7%) 150.00 Equip. Services 96.2(-3.8%) 100.00 Drilling 97.2(-2.8%) 50.00 Exp. & Prod. 78.3(-22.7%) 0.00 12/31/2013 -2/29/2012 12/31/2012 4/30/2013 2/28/2014 4/30/2014 8/31/2016 12/31/2016 2/28/2017 6/30/2012 8/31/2012 2/28/2013 10/31/2013 6/30/2015 8/31/2015 10/31/2015 2/29/2016 10/31/2012 6/30/2013 8/31/2013 10/31/2014 12/31/2014 6/30/2014 8/31/2014 4/30/2015 10/31/2011 12/31/2011

Index, 100 = October 31, 2011









Trefethen Intelligence M&A Transactions

Oil & Gas Upstream Transactions

Announced Date	Target	States	Sector	Acquirer	Comments	nsaction ue (MM)
10/31/2016	Archrock Inc.	TX	S&S	Archrock Partners LP	To buy compression assets in a dropdown acquisition from the Houston-based company; includes customer contracts and about 270 compressor units.	\$ 85.0
10/31/2016	Saudi Aramco	Saudi Arabia	S&S	Nabors Industries Ltd.	To form JV in the Kingdom of Saudi Arabia to own, manage and operate onshore drilling rigs.	\$ -
10/21/2016	Saudi Aramco	Saudi Arabia	S&S	Nabors Industries Ltd.	To form JV in the Kingdom of Saudi Arabia to own, manage and operate onshore	\$
10/31/2010	Saudi Aramico	Alabia	303	Nabors muustnes Etu.	drilling rigs. To purchase Ante Creek area assets in W Central Alberta; include 69,888 net acres	-
10/31/2016	RMP Energy Inc.	Canada	E&P	Undisclosed	and production of about 4,300 boe/d (45% crude oil and NGL) in 3Q 2016).	\$ 114.3
10/31/2016	Anadarko Petroleum Corp.	CO, KS, LA, TX	E&P	Undisclosed	Bought in multiple transactions the Ozona, Elm Grove, Hearne and Hugoton Fields as well as noncore acreage in the D-J Basin in CO, KS, LA and TX.	\$ 500.0
10/31/2016	Anadarko Petroleum Corp.	TX	E&P	Undisclosed	To purchase the Carthage Field in E TX; produced 40 Mboe/d (72% gas, 25% NGL and 3% oil) in 3Q 2016.	\$ 1,000.0
10/31/2016	Consol Energy Inc.	PA, WV	E&P	Noble Energy Inc.	To separate Marcellus 50-50 JV, resulting in a \$250 MM payment to Consol; each company will own 100% interest in separate operating areas.	\$ -
10/31/2016	Baker Hughes Inc.	TX	s&s	General Electric Co. ; GE Oil & Gas	To merge GE Oil & Gas and Baker Hughes into a new oilfield technology company with a value of \$32 B; GE will own a 62.5% majority in the new company.	\$ -
10/31/2016	Undisclosed	TX	E&P	Occidental Petroleum Corp.	Acquired 35,000 net Delaware Basin acres in Reeves and Pecos counties in West Texas; includes other Permian Basin interests.	2,000.0
10/26/2016	Maverick Drilling & Exploration Ltd.	TX	E&P	Undisclosed	To purchase interest in the Blue Ridge Field in Fort Bend County in South Texas.	\$ 9.1
10/25/2016	Trans Energy Inc. ; Republic Energy Ventures LLC	PA, WV	E&P	EQT Corp.	To acquire about 60,000 net acres of core Marcellus acreage in PA and WV; includes about 44 Mmcfe/d of production and deep Utica drilling rights.	\$ 683.0
10/24/2016	Clayton William Energy Inc.	TX	E&P	Undisclosed	To purchase substantially all of Clayton William's Giddings Area assets in E Central TX; includes average production in 3Q 2016 of about 3,900 boe/d (80% oil).	\$ 400.0
10/24/2016	Sanchez Energy Corp.	TX	E&P	Carrizo Oil & Gas Inc.	To acquire about 15,000 net acres in the Eagle Ford Shale in LaSalle, Frio and McMullen counties in S TX; includes estimated net production during September of about 3,100 boe/d (61% oil) from 112 gross (93 net) wells.	\$ 181.0
	Stone Energy Corp.	wv	E&P	Tug Hill Inc. ; TH Exploration LLC	To acquire Appalachia assets, as part of Stone Energy's restructuring agreement; includes about 48,900 acres in the Marcellus and Utica shales.	\$ 360.0
10/20/2016	Royal Dutch Shell Plc	Canada	E&P	Tourmaline Oil Corp.	To acquire 206,000 acres of developed and undeveloped lands with about 24,850 boe/d of production in W Canada.	\$ 1,030.0
10/20/2016	Gastar Exploration Inc.	ОК	E&P	Undisclosed	Formed JV with an undisclosed large private global investment fund to delineate and de-risk about 18,000 net acres in the Stack Play in Kingfisher County, OK; includes up to 60 Meramec and Osage wells.	\$ 71.0
10/20/2016	Gastar Exploration Inc.	OK	E&P	Undisclosed	Formed JV with an undisclosed large private global investment fund to delineate and de-risk about 18,000 net acres in the Stack Play in Kingfisher County, OK; includes up to 60 Meramec and Osage wells.	\$ -
10/19/2016	Vantage Energy LLC; Vantage Energy II LLC	PA, OH, WV, TX	E&P	Rice Energy Inc.	Acquired Englewood, CO-based Vantage Energy, which has assets in the Marcellus, Utica and Barnett shale plays.	\$ 2,700.0
10/18/2016	QStar LLC; EnCap Investments LP	TX	E&P	SM Energy Co.	To acquire 35,700 net acres within the Midland Basin in Howard and Martin counties in W TX; includes about 2,400 boe/d net production.	\$ 1,100.0
10/18/2016	SM Energy Co.	ND	E&P	Oasis Petroleum Inc.	To purchase Williston Basin assets located outside Divide County, ND; includes about 55,000 net acres.	\$ 785.0
10/17/2016	TIW Corp.	TX	S&S	Dril-Quip Inc.	To acquire the Houston-based, family-owned manufacturer of consumable downhole products for the global oil and gas market.	\$ 143.0
	Comstock Resources Inc.	TX	E&P	Undisclosed	To purchase conventional gas assets in S TX; includes 9,904 net acres and production of about 9.6 MMcf/d of natural gas and 22 bbl/d of oil.	\$ 28.0

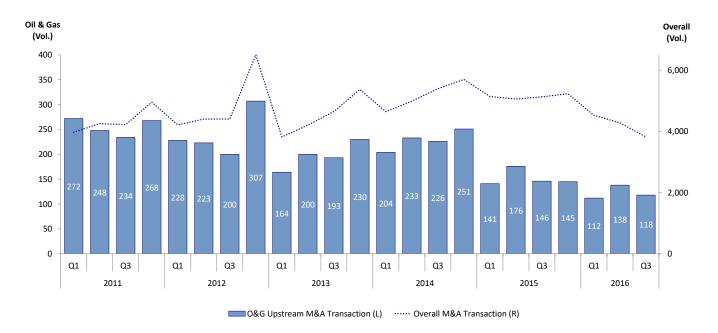
Source: Capital IQ, Oil & Gas Investor
Note: E&P = Exploration & Production; S&S = Supply & Services; R&M = Refining & Marketing

Trefethen Intelligence M&A Transactions (Cont.')

Oil & Gas Upstream Transactions

Announced Date	Target	States	Sector	Acquirer	Comments		nsaction ue (MM)
10/17/2016	Blue Ocean Technologies LLC	TX	S&S	Oceaneering International Inc.	Bought the assets of Conroe, TX-based Blue Ocean, which is a privately held provider of RLWI systems.	\$	30.0
10/14/2016	Freeport-McMoRan Inc.; Freeport-McMoRan Oil & Gas LLC	CA	E&P	Sentinel Peak Resources LLC	To buy onshore CA assets including 28,000 bbl/d of oil production in the San Joaquin and Los Angeles basins and coastal properties.	\$	742.0
10/13/2016	Northpoint Resources Ltd.	ВС	E&P	Canbriam Energy Inc.	Bought British Columbia assets, which include non-Montney natural gas production, reserves and related infrastructure.	\$	7.5
10/13/2016	Undisclosed	TX	E&P	Lilis Energy Inc.	Purchased bolt-on properties consisted of 500 net acres within the Delaware Basin in Winkler County in West Texas; includes 78% WI in a producing vertical well.	Ś	3.0
	Silver Hills Energy Partners LLC; Silver Hill E&P II LLC; Kayne Anderson Capital Advisors LP;	TX	E&P	RSP Permian Inc.	To acquire Delaware Basin's Silver Hill, which controls about 68,000 gross (41,000 net) acres and produces about 15 Mboe/d net.	\$	2,400.0
10/13/2010		LA	E&P	Krewe Energy LLC	Purchased additional interest in the Lapeyrouse Field located in Terrebonne Parish in S LA, which brings Krewe's holdings to 100% interest in the field.	\$	-
10/7/2016	Blackhawk Group Holdings Inc. ; Blackhawk Specialty Tools LLC	TX	S&S	ű,	To acquire in a merger agreement Houston-based Blackhawk Specialty Tools, which provides well construction and well intervention services and products.	\$	321.0
10/7/2016	Undisclosed	wv	E&P	Carbon Natural Gas Co.	Bought about 2,300 producing wells and more than 900 miles of natural gas gathering pipelines and associated facilities in the Appalachian Basin in WV.	\$	_
10/7/2016	Mexco Energy Corp.	TX	E&P	Parsley Energy Inc.	Purchased WI covering 50 net acres in the horizontal Wolfcamp trend in Glasscock County in W TX within the Midland Basin of the Permian.	\$	2.2
10/6/2016	Sanchez Energy Corp.	TX	F&P	Sanchez Production Partners LP	To acquire producing Eagle Ford wells in Dimmit and Zavala counties in S TX, additional wellbores in the Palmetto Field and a 50% stake in Canero Processing LLC.	\$	107.0
10/4/2016	Firewheel Energy LLC; EnCap Investments LP	тх	E&P	Resolute Energy Corp.	Acquired certain properties consisting of 3,293 net acres in Reeves County in W TX within the Delaware Basin of the Permian; includes 1,200 boe/d of current production and 6.2 MMboe proved reserves.	\$	135.0

M&A Closed Transactions Trends



Source: Capital IQ, Oil & Gas Investor
Note: E&P = Exploration & Production; S&S = Supply & Services; R&M = Refining & Marketing

Oil & Gas Market Monthly Newsletter

Trefethen Intelligence Closing Thoughts

Market Commentary

Oil prices continued to have trouble gaining momentum as demand expectations remain subdued and OPEC continued to pump at record levels. According to the International Energy Agency's monthly report for October, OPEC pumped a record 33.8 million barrels per day in October, which was at the high end of its output range. Even more troubling is those production levels come after the OPEC member countries agreed to trim output by 2% at the September meeting in Algiers; output is now at record levels, a result of the member countries not finding agreement amongst themselves on which producers should bear the brunt of the cuts. With many outside of OPEC ramping production, there is concern that supply growth will continue into 2017, further increasing pressure on prices. Domestically, the U.S. continued to see increases in rig count with 9 rigs added the last week of the month resulting in a total of 450 oil rigs in the U.S. at the end of October (Based on November 4, 2016 Baker Hughes Rig Count) well off the high of 1,609 in October 2014. Even with prices in the upper \$40 - \$50 range, domestic onshore producers have continued to show an appetite for production as lower operating expenses and drilling improvements show that properly capitalized, efficient operators can be profitable at these price levels.

Upstream M&A activity was strong in the 3rd quarter and was estimated at \$20.6 billion by PLS Inc. bringing the estimated total to \$43.0 billion for the year. Activity was the strongest in the Permian Basin with notable deals including the \$2.4 billion acquisition of Kayne Anderson backed Silver Hill Energy LP by RSP Permian and Rock Oil sold to SM Energy. In the case of the Silver Hill transaction, the assets were estimated to be sold at record highs for the Delaware Basin (\$48,200 acre). M&A activity remains the strongest in the higher quality assets as the equity and credit markets remain open-minded about those opportunities. Consolidation across the sector remains an attractive alternative as well, evidenced by the announcement of GE merging its oilfield services assets into Baker Hughes in a deal where GE will take control of the entity with the Baker Hughes shareholders receiving a special dividend of \$17.50 per share and 37.5% of the new entity. While deal flow remains strong for attractive cost advantaged assets, prices appear committed to stay in the \$40-\$50 range, which will continue to put pressure on all producers and operators to rationalize costs and investments.

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Trefethen Advisors, LLC is an independent financial and strategic advisory firm founded by Trefethen Advisors, serving leading middle-market public and private corporations, family offices, institutional investors, operating executives and individual business owners. Our hands-on senior partners have negotiated, structured, and completed more than \$8 billion in transactions. Trefethen's sector-focused model enables us to provide our clients with a complete perspective of the micro and macro economic trends affecting their industry and business, and influencing their complex strategic decisions.

Trefethen's collaborative approach consists of developing and executing value-maximizing strategies that are aligned with our clients' objectives. We offer a full range of financial and strategic advisory services (e.g., M&A; Corporate Finance; Financial Restructuring, ESOPs), and skilled transaction execution capabilities. Our principals have significant experience in senior housing and have extensive relationships with industry and capital markets participants. Our focus on value-added research provides our clients with insight on industry specific and macro issues affecting their business.

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