Investor Presentation

Richard Robert, EVP & CFO
March 2016

VANGUARD
NATURAL RESOURCES, LLC
NASDAQ: VNR

Forward Looking Statements

Statements made by representatives of Vanguard Natural Resources, LLC during the course of this presentation that are not historical facts are forward looking statements. These statements are based on certain assumptions and expectations made by the Company which reflect management's experience, estimates and perception of historical trends, current conditions, anticipated future developments and other factors believed to be appropriate. Such statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond the control of the Company, which may cause actual results to differ materially from those implied or anticipated in the forward looking statements. These include risks relating to the satisfaction of the conditions to closing of the acquisition, uncertainties as to timing, financial performance and results, our indebtedness under our revolving credit facility, availability of sufficient cash to pay our distributions and execute our business plan, prices and demand for oil, natural gas and natural gas liquids, our ability to replace reserves and efficiently develop our reserves, our ability to make acquisitions on economically acceptable terms and other important factors that could cause actual results to differ materially from those anticipated or implied in the forward looking statements. See "Risk Factors" in our most recent annual report on Form 10-K and Item 1A. of Part II "Risk Factors" in our subsequent quarterly reports on Form 10-Q and any other public filings and press releases. Vanguard Natural Resources, LLC undertakes no obligation to publicly update any forward looking statements, whether as a result of new information or future events. This presentation has been prepared as of March 4, 2016.

Overview of Vanguard Natural Resources

- Upstream oil & gas LLC, headquartered in Houston, TX; Initial Public Offering – "**VNR**" – October 2007 had a Total Enterprise Value of ~$240mm
- In Feb 2016, VNR issued ~$75.6 million of new 7.0% Senior Secured Lien Notes due 2023 to certain eligible holders of our outstanding 7.7875% Senior Notes due 2020 in exchange for ~$168.2 million of the Senior Notes due 2020
- In 2013, VNR was the first master limited partnership to issue publicly traded preferred units with its initial 7.875% Series A Cumulative Redeemable Perpetual Preferred Units
  - In total, VNR has raised net proceeds of more than $328 million from three preferred equity offerings
- At-the-Market Program (ATM) allows us to systematically sell equity at a much more cost effective means
  - In 2014, VNR raised net proceeds of more than $148 million via common equity and $1.2 million via preferred equity
  - Since restarting ATM on March 17, 2015 and thru July 6, 2015 prior to black out window, VNR raised net proceeds of approximately $36 million

Asset Profile(1)

Twenty five strategic acquisitions totaling ~$5.0 bn

- ~2.29 Tcfe (~381 MMBoe) total proved reserves
- 72% proved developed
- 32% liquids / 68% gas
- 2013 Production: 212 MMcfe/d
- 2014 Production: 327 MMcfe/d
- 2015 Production: 415 MMcfe/d

Market Valuation

Company Profile (2)	(in millions)
COMMON UNITS	**131.1 MM**
PREFERRED UNITS	**13.8 MM**
EQUITY MARKET CAP (incl. preferred)	$429
TOTAL DEBT(3)	$2,213
ENTERPRISE VALUE	**$2,642**

(1) Proved reserves as of 12/31/2015 based on SEC reserve report.
(2) Market data as of 3/4/16 and includes 420,000 Class B units. Based off VNR closing price of $2.61.
(3) Debt as of 3/4/16.

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Geographically Diversified Reserve Base

Core Areas

Green River Basin
- Proved Reserves: 684 Bcfe
- 87% gas and 56% Proved Developed
- 144 MMcfe/d net production

Big Horn Basin
- Proved Reserves: 89 Bcfe
- 95% liquids and 100% Proved Developed
- 16 MMcfe/d net production

Williston Basin
- Proved Reserves: 27 Bcfe
- 96% liquids and 100% Proved Developed
- 9 MMcfe/d net production

Powder River Basin
- Proved Reserves: 16 Bcfe
- 100% natural gas and 100% Proved Developed
- 19 MMcfe/d net production

Wind River Basin
- Proved Reserves: 24 Bcfe
- 97% natural gas and 100% Proved Developed
- 8 MMcfe/d net production

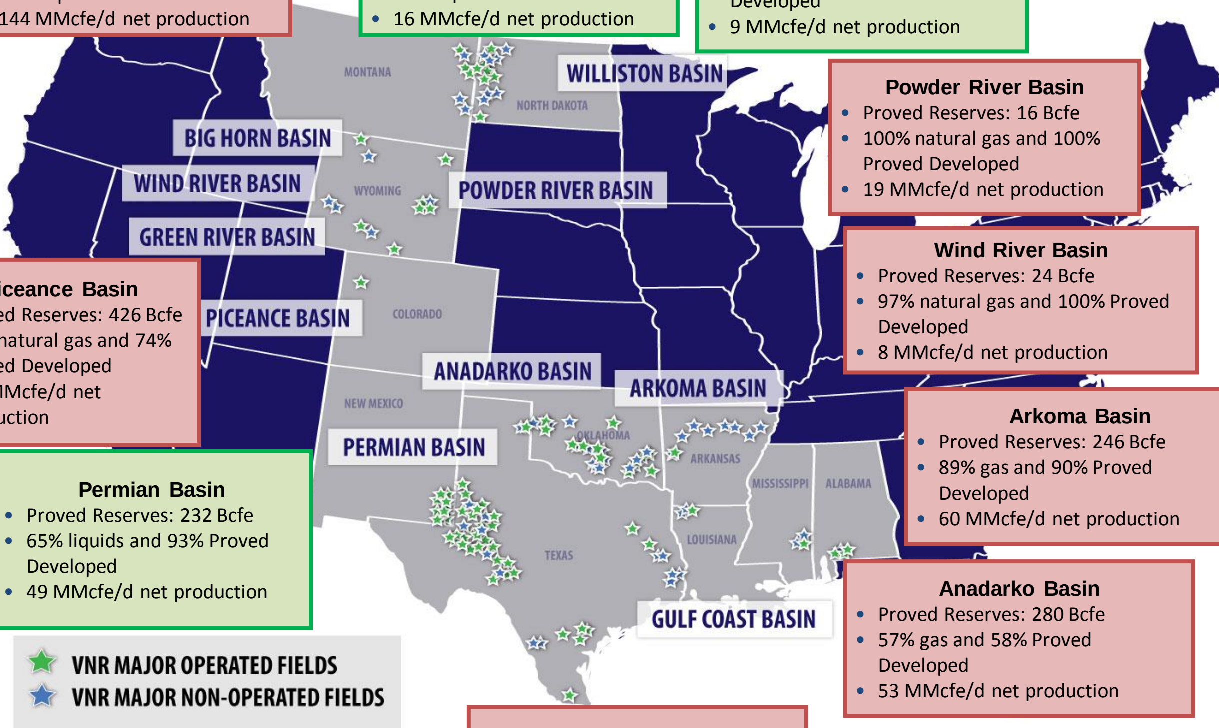
Piceance Basin
- Proved Reserves: 426 Bcfe
- 74% natural gas and 74% Proved Developed
- 90 MMcfe/d net production

Arkoma Basin
- Proved Reserves: 246 Bcfe
- 89% gas and 90% Proved Developed
- 60 MMcfe/d net production

Permian Basin
- Proved Reserves: 232 Bcfe
- 65% liquids and 93% Proved Developed
- 49 MMcfe/d net production

Anadarko Basin
- Proved Reserves: 280 Bcfe
- 57% gas and 58% Proved Developed
- 53 MMcfe/d net production

Gulf Coast Basin
- Proved Reserves: 264 Bcfe
- 53% natural gas and 75% Proved Developed
- 63 MMcfe/d net production



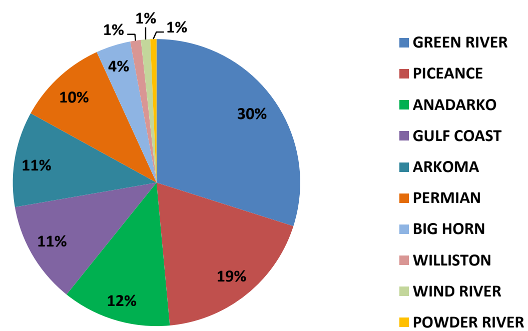
- Primarily Natural Gas
- Primarily Oil

Overview

- ~2.29 Tcfe (~381 MMBoe) proved reserves
- 68% gas and 32% liquids
- 72% proved developed
- R/P is ~12 years

Proved Reserves By Area

~2.29 Tcfe (~381 MMBoe)



Note: Proved reserves as of 12/31/2015 based on 2015 SEC reserve report. Production based on Q4 2015 average daily net production.

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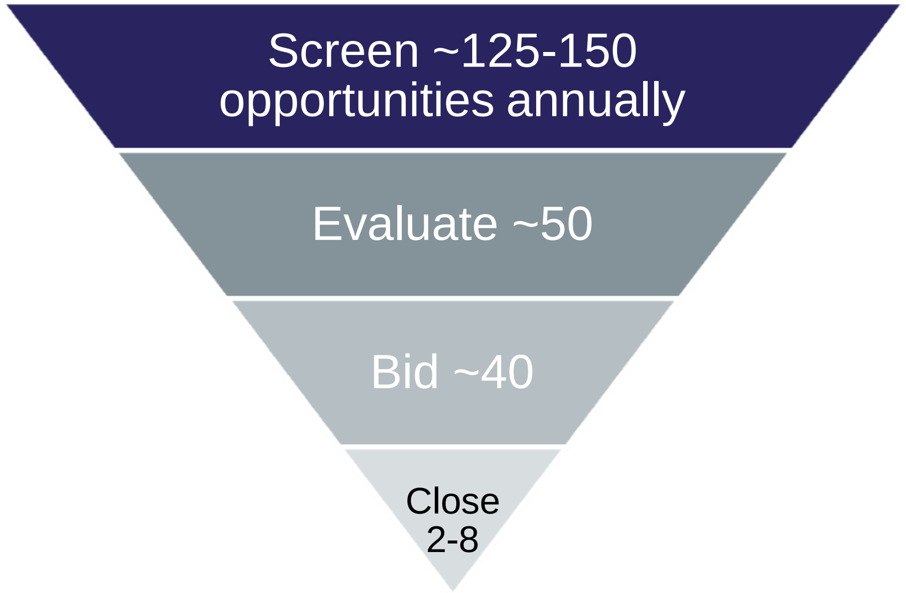
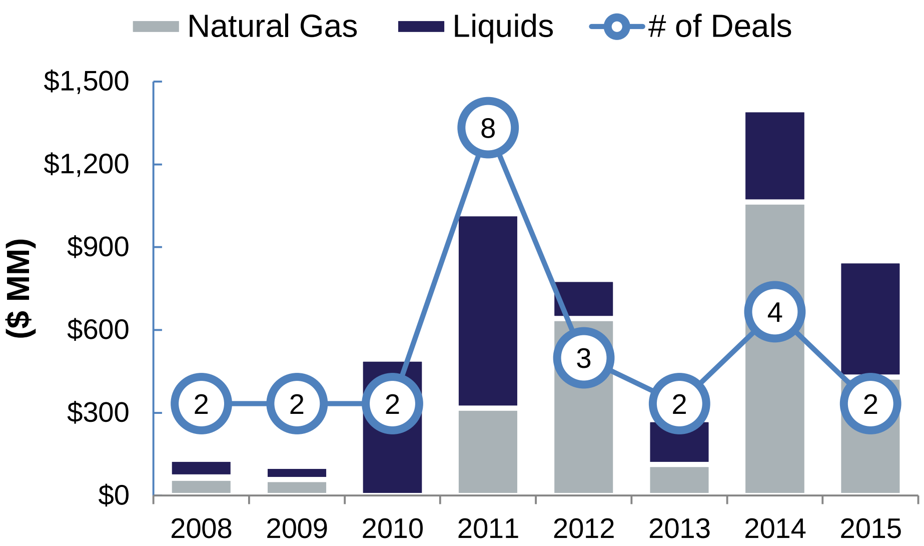
VNR Investment Thesis: Disciplined Acquisition Strategy

- Strong record of evaluating and integrating assets, completing over $5.0 billion in acquisitions since VNR's IPO in 2007
- Designated business development and acquisition evaluation team
- Review between 125-150 and evaluate approximately 50 acquisition candidates each year

Prudent Screening Approach



Acquisitions Completed Since IPO in 2007



Asset Profile

	2007 (1)	PF 2015 (2)
Total Proved Reserve (Bcfe)	67	2,289
% PD	75%	71%
% Liquids	3%	32%
Production (MMcfe/d)	12	508

Source: Company disclosure and internal projections

(1) Based on Company's 2007 10-K.

(2) Proved reserves based on 2015 10-K; 2015 production pro forma for the EROC and LRE transactions.

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Pro Forma Capitalization and Liquidity

Capitalization Table (Current)	
($ in millions)	**Vanguard**
Cash	10
Credit Facility	1,680
7.0% Secured Second Lien due 2023	76
7.875% Senior Notes due 2020	382
8.375% Senior Notes due 2019	51
Lease Financing Obligations	25
Total Debt	**2,213**
Member's Equity Market Capitalization (1)	
Common and Class B Units	342
Series A Preferred units	23
Series B Preferred units	40
Series C Preferred units	24
Total Members' Equity	**429**
Total Capitalization	**2,642**
Borrowing Base	1,781
Liquidity (including cash) (2)	**107**

Metrics:	
Net Debt / 2015 LTM Adjusted EBITDA (3)	4.1x
Net Debt / Capitalization	83%
Net Debt / Proved Reserves ($/Mcfe) (4)	$0.96
Net Debt / Proved Developed Reserves ($/Mcfe) (4)	$1.33

(1) Member's equity capitalization as of March 4, 2016.
(2) Includes $4.5 million in outstanding letters of credit.
(3) Includes pro forma impact of the LRE and EROC transactions for the full year 2015.
(4) Based on year-end 2015 SEC reserves.

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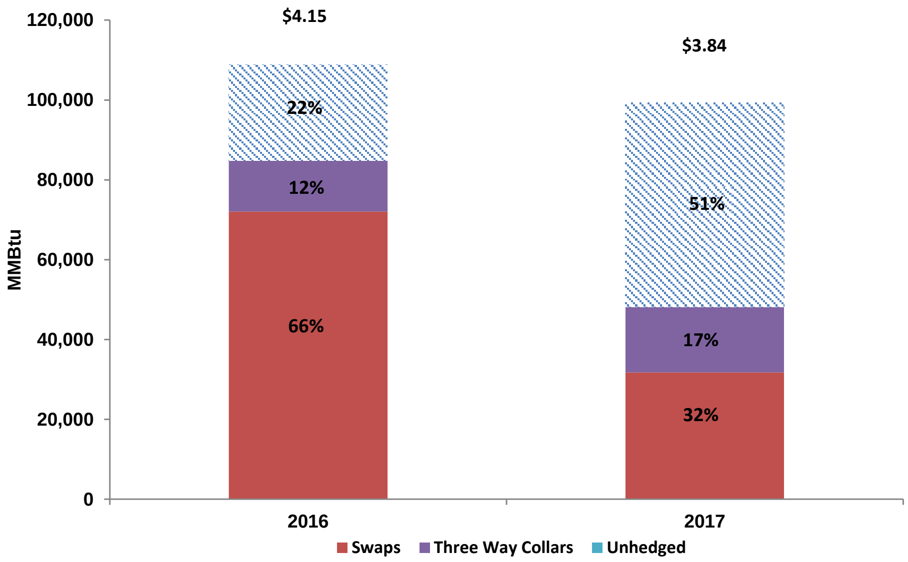
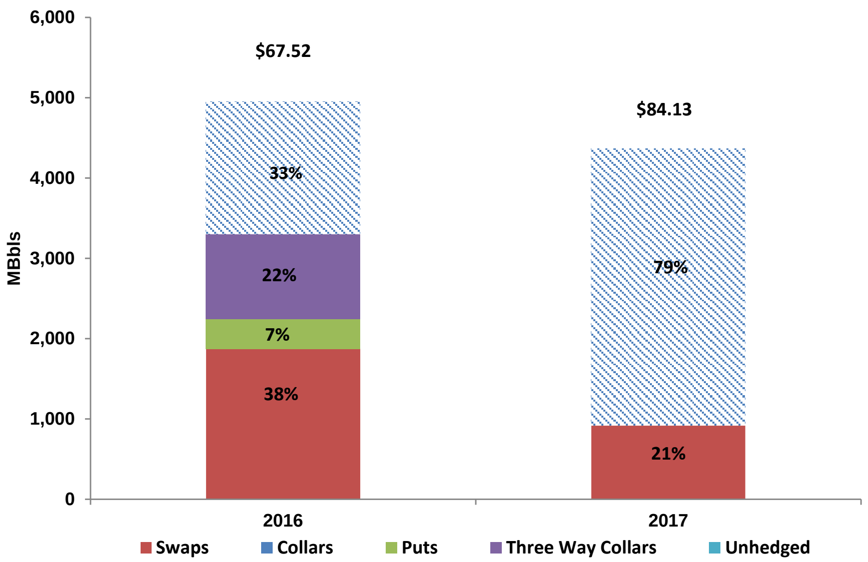
Hedges Mitigate Commodity Price Risk

Natural Gas Hedges



Oil Hedges



Note: The weighted average price for oil and natural gas will fluctuate based on the value of existing three-way collars and short puts as the respective prices settle. The above weighted average prices are calculated based on forward commodity pricing as of 2/29/16.

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2016E Guidance Table

	FY 2016E
Net Production:	
Oil (Bbls/d)	12,800 - 14,200
Natural gas (Mcf/d)	280,000 - 310,000
Natural gas liquids (Bbls/d)	10,800 - 12,000
Total (Mcfe/d)	421,600 - 467,200
Costs per Mcfe:	
Lease operating expenses	$1.00 - $1.10
Production taxes (% of revenue)	11.0% - 12.0%
G&A expenses (excluding non-cash G&A)	$0.24 - $0.26
Depreciation, depletion and amortization	$1.30 - $1.50
Cash Flow Calculation:	
Adjusted EBITDA (1)	$360,000
Interest expense	(105,000)
Capital expenditures (2)	(63,000)
Distributions to preferred unitholders (3)	(2,230)
Distributable cash flow	$189,770
Excess of net cash after distributions to unitholders (4)	145,000
Mid-point adjusted net income per unit (1)	$0.10
Units outstanding (millions)	131.1

Assumed NYMEX Pricing (February 29, 2016) (5):	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Oil (Bbl)	$31.20	$35.48	$38.48	$40.08
Natural gas (MMBtu)	$2.09	$1.80	$2.02	$2.26
Average NYMEX Differentials:				
Oil (Bbl)	($7.50)	($7.50)	($7.50)	($7.50)
Natural gas (MMBtu)	($0.80)	($0.80)	($0.80)	($0.80)
NGL realization of crude oil price (%) (6)	24%	22%	22%	22%

Capital Expenditures Detail:	Q1 2016	Q2 2016	Q3 2016	Q4 2016
Operated	($4,000)	($7,500)	($6,500)	($5,500)
Non-Operated	($15,500)	($12,500)	($6,000)	($5,500)
Total Capital Expenditures	($19,500)	($20,000)	($12,500)	($11,000)

Note: Includes full-year impact of SCOOP/STACK assets. See additional footnotes on Slide 9.

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2016 Guidance Table (footnotes)

(1) Adjusted EBITDA and adjusted net income exclude the amortization of value on derivative contracts acquired (approximately $16.7 million for the FY 2016).
(2) Additional detail regarding the capital breakout by quarter is listed below.
(3) Reflects current monthly preferred distributions are suspended effective with the February 2016 distribution, which would have been paid in April 2016.
(4) Excess of net cash after distributions is net of any expected working capital adjustments and cash reserves and does not consider the payment of any accrued preferred distributions.
(5) NYMEX pricing includes actual settlements for January and February 2016.
(6) Assumes a weighted average product breakout of 24% ethane, 35% propane, 14% isobutane, 10% n-butane and 17% pentane.

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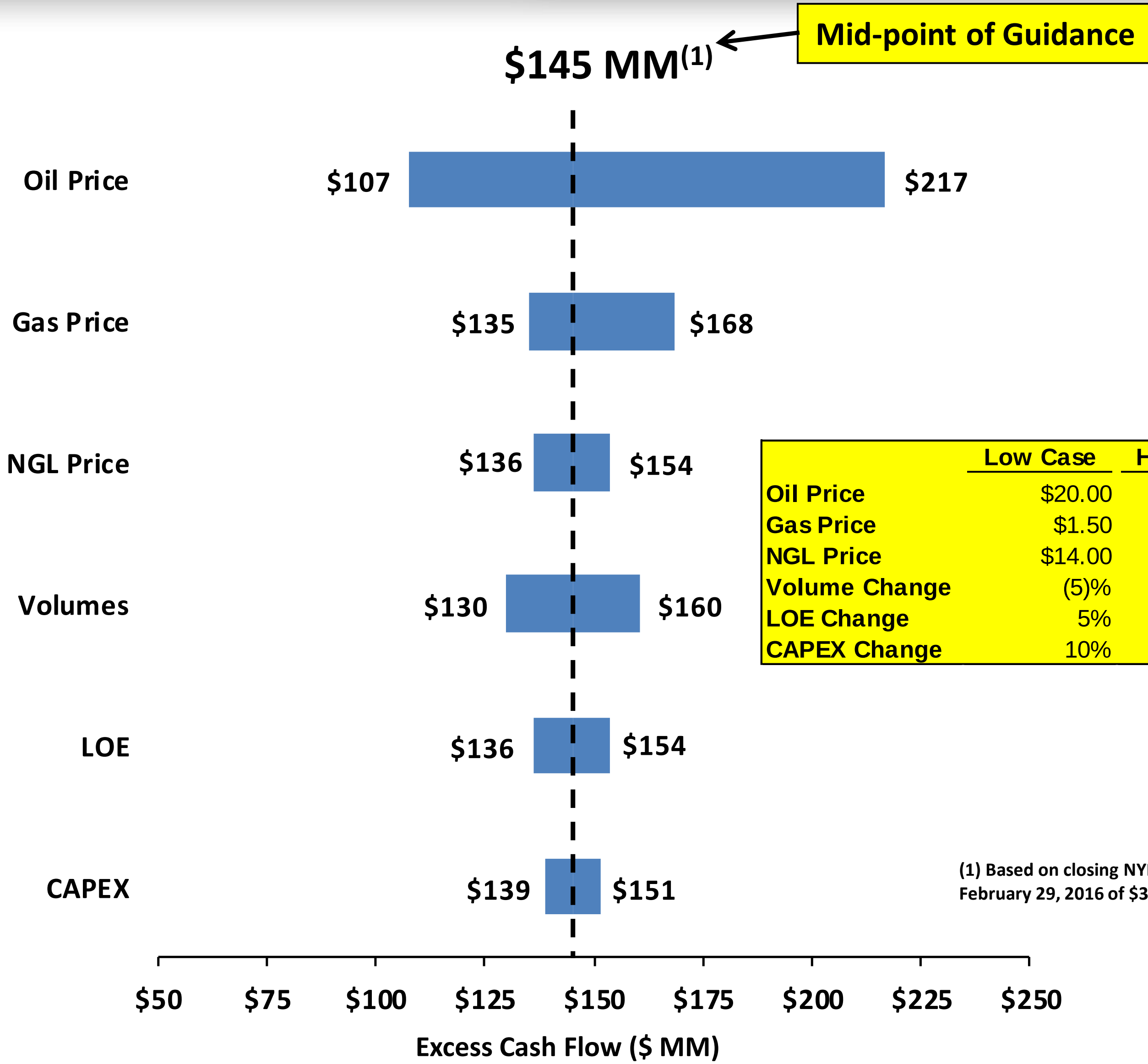
Excess Cash Flow Sensitivities Chart



	Low Case	High Case
Oil Price	$20.00	$70.00
Gas Price	$1.50	$3.50
NGL Price	$14.00	$21.25
Volume Change	(5)%	5%
LOE Change	5%	(5)%
CAPEX Change	10%	(10)%

(1) Based on closing NYMEX futures strip pricing on February 29, 2016 of $36.53/Bbl and $2.05/Mcf for 2016.

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