



TARGETING. ANALYSIS. MEDIA. GRAPHICS.

**Energy Industry Data and Trends Supplemental Slides:  
Look North For The Next Major U.S. Shale Play**

*September 2018*

# Table of Contents



Look North For The Next Major U.S. Shale Play Slides

---

**Pg. 3**

Supplemental Market Slides

---

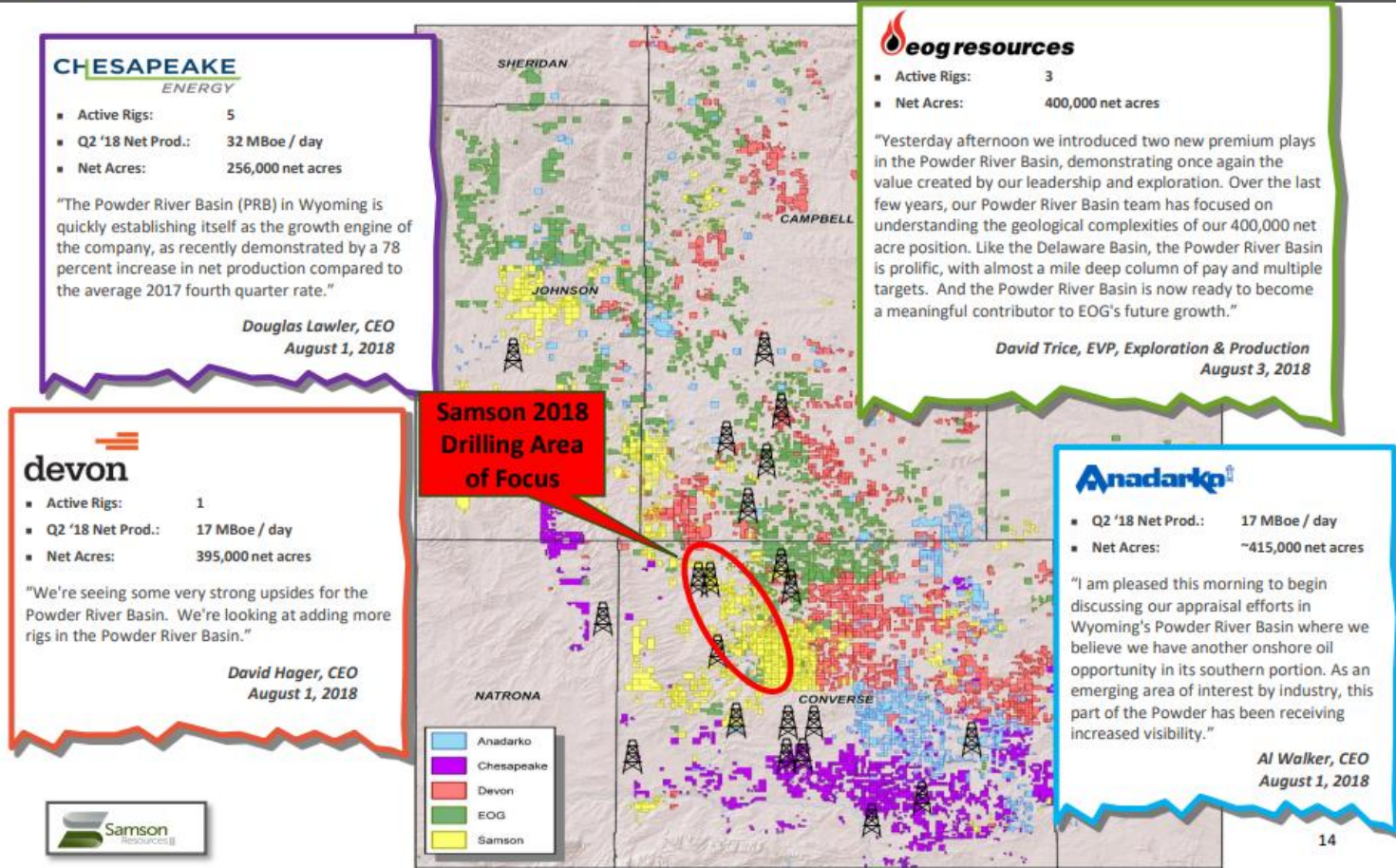
**Pg. 14**



**Look North For The Next Major U.S.  
Shale Play**

**ENERCOM**

## Growing Industry Momentum in the Powder River



## Land & Leases

### Net Acres

- 1) 450,000 - Anadarko
- 2) 406,000 - Anschutz**
- 3) 400,000 - EOG
- 4) 398,000 - Devon
- 5) 275,000 - Chesapeake
- 6) 160,000 - Samson
- 7) 148,000 - Wold
- 8) 115,000 - Ballard
- 9) 112,000 - North Woods
- 10) 60,000 - Conoco
- 11) 58,000 - ATX
- 12) 52,000 - Impact

Note: Acreage estimate based on various sources

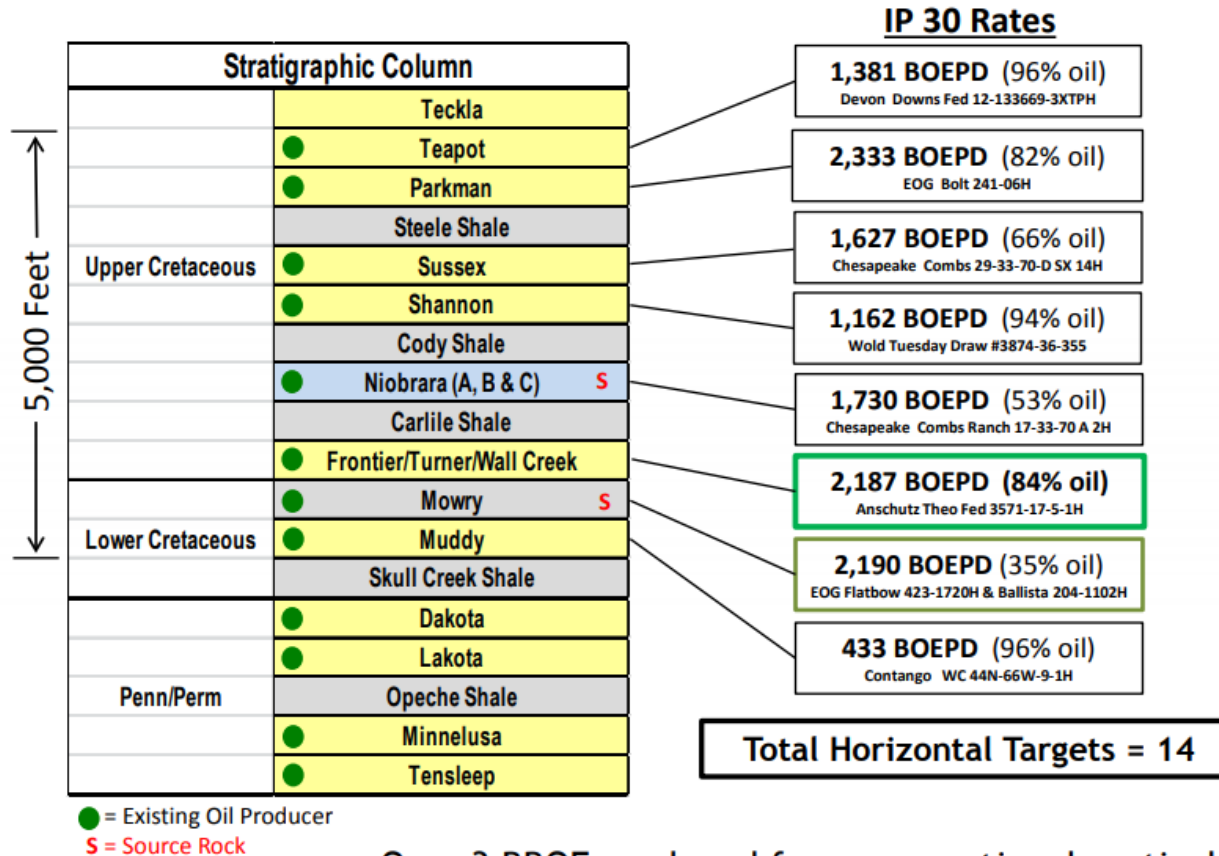


### PRB Lease Terms - Overview

- NRI range of 80% to 87.5%
- Large percentage of acreage HBP
- Primary terms of 4 to 10 years
- Little to no drilling obligations (i.e. continuous operations)
- No Pugh clauses
- Ongoing efforts across basin to further “core” up operated positions/increase WI

CONFIDENTIAL – 6

## Multiple Stacked Oil Productive Targets



- Over 3 BBOE produced from conventional vertical wells
- Historical production averages 84% oil



# EOG Powder River Basin Development Data By Formation



EOG Powder River Basin Development Data By Formation					
Formation	Well Cost (\$Millions)	Lateral Length	EUR (MBO-E)	Recent 30-Day IP (BOEPD)	Spacing
Turner Sand	4.5	8,000	730	1,635	1,700
Niobrara Shale	5.9	9,500	1,400	2,090	660
Mowry Shale	6.1	9,500	1,700	2,190	660

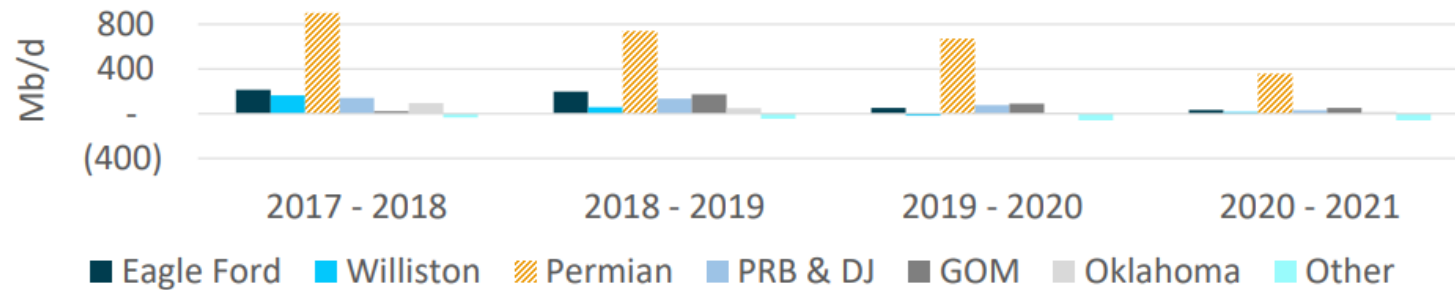
Source: EnerCom Analytics, EOG

# Takeaway and Growth in Major Shale Basins



Expected annual average oil growth from the Permian in 2018 is more than production growth from all other US oil plays

### Year-Over-Year Growth for Major Oil Plays



Near-term Constraints (2018 - 2020)	Oil Takeaway	Gas Takeaway	NGL Takeaway	Gas Processing
	Permian	Existing constraint	Existing constraint	No constraint
Bakken	Developing constraint	No constraint	Existing constraint	Existing constraint
DJ Basin	Developing constraint	Developing constraint	Existing constraint	Existing constraint
Oklahoma	No constraint	Developing constraint	Developing constraint	Developing constraint
Eagle Ford	No constraint	No constraint	No constraint	No constraint
Powder River Basin	No constraint	No constraint	Developing constraint	No constraint

● No constraint    
 ● Developing constraint    
 ● Existing constraint

Note: Calculations are annual average production volume comparisons  
 Source: BTU Analytics' [Oil Market Outlook](#) (August 2018)

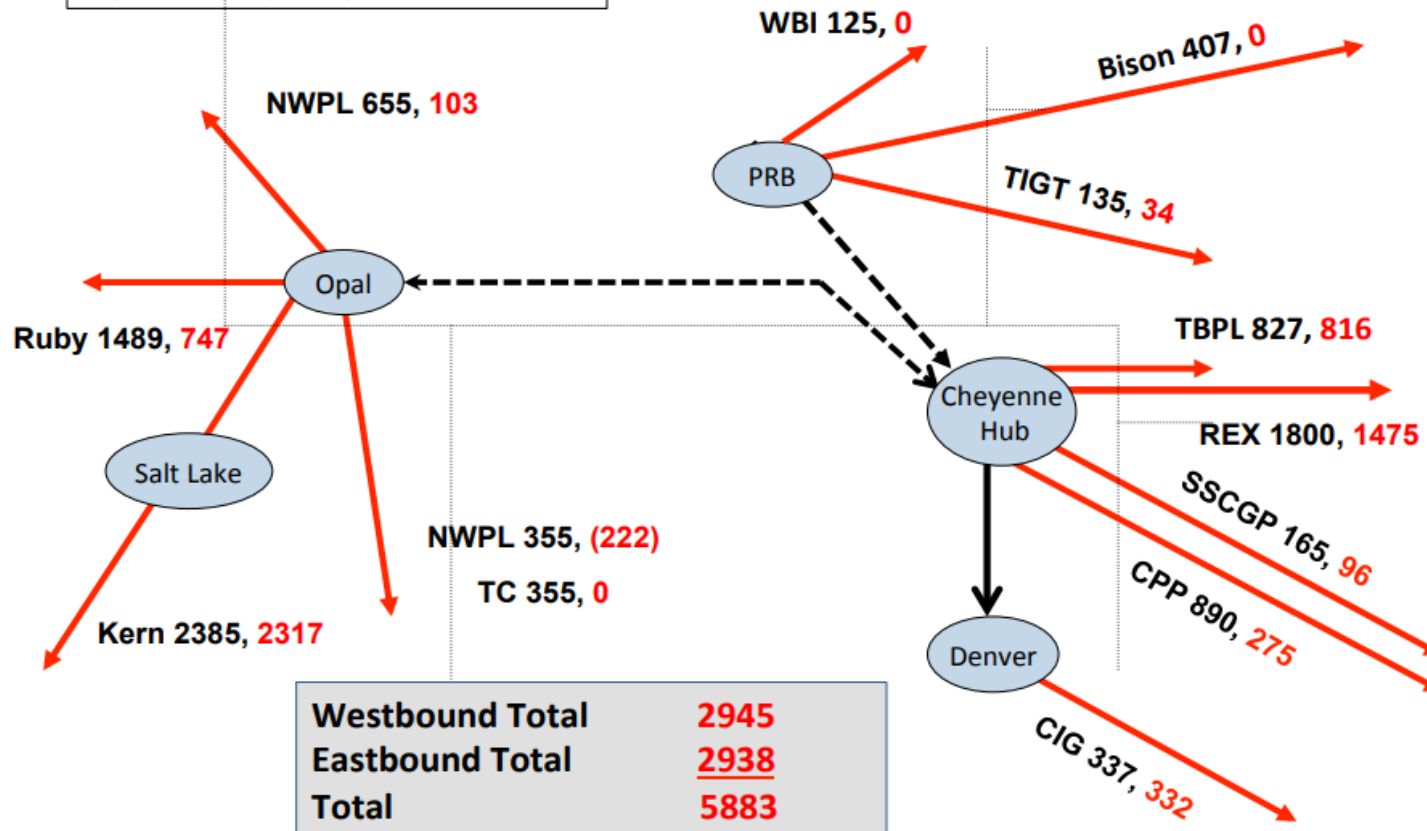


# Wyoming Gas Takeaway Situation

Today – 59% full on export capacity

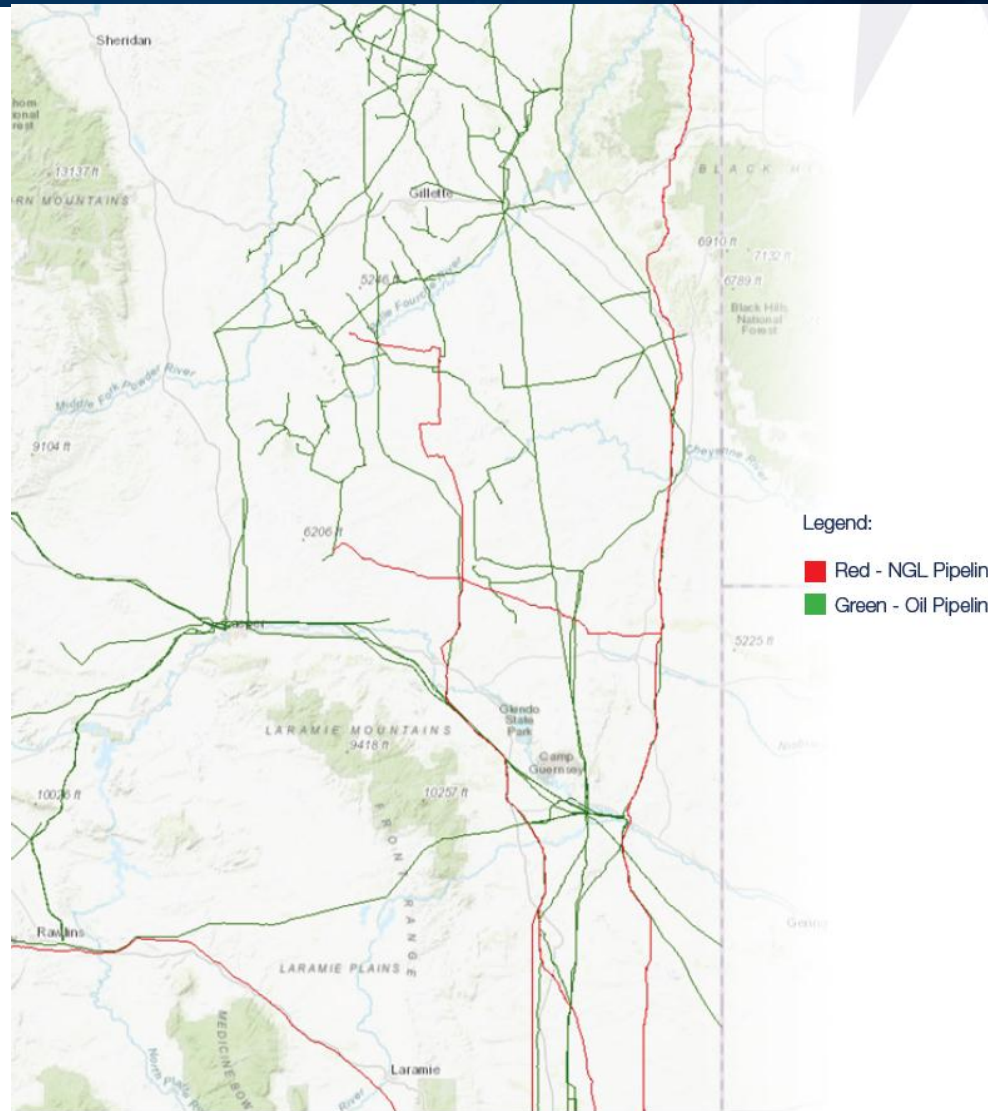


Pipeline, Capacity, Actual Flow



Source: Individual Pipeline websites under *Informational Postings for Operationally Available Capacity*, (1000s MMBtu per day) Gas Day 9-7-18

# Powder River Oil & NGL Pipelines



Source: Wyoming State Geological Survey

# WTI-PRB Oil Differential



Source: EnerCom Analytics

# Henry Hub-PRB Gas Differential

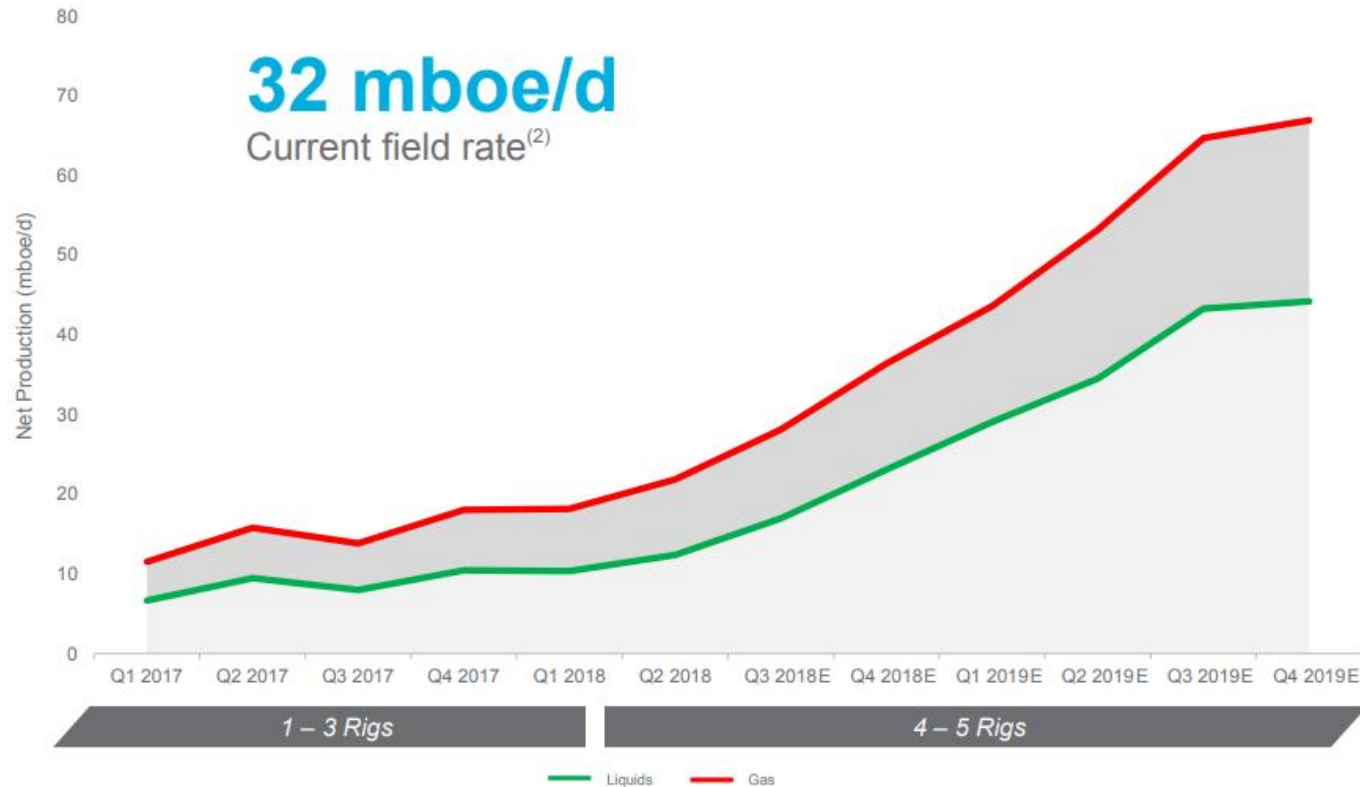


Source: EnerCom Analytics

# Chesapeake Plans Significant Growth

## PRODUCTION GROWING RAPIDLY

~90% OIL GROWTH YTD, ~100% EXPECTED IN 2019<sup>(1)</sup>



(1) Projected annual growth in 2019 compared to 2018 projected annual volumes  
(2) As of 7/24/2018, net volume

# Supplemental Market Slides



# FUNDING A CAPITAL INTENSIVE INDUSTRY



*In 2017, Companies Raised More Than \$105 Billion in Capital*

U.S. and Canadian Offerings	2013	2014	2015	2016	2017	2018 YTD
Initial Public Offerings	\$6,670MM	\$8,210MM	\$1,390MM	\$3,230MM	\$4,210MM	\$1,280MM
Follow-on Offerings	\$20,260MM	\$22,380MM	\$24,540MM	\$42,330MM	\$13,890MM	\$4,410MM
Debt Offerings	\$85,310MM	\$113,840MM	\$105,183MM	\$58,282MM	\$87,869MM	\$65,974MM
<b>Totals</b>	<b>\$112,240MM</b>	<b>\$144,430 MM</b>	<b>\$131,113MM</b>	<b>\$103,842MM</b>	<b>\$105,969MM</b>	<b>\$71,664MM</b>
<b>U.S. &amp; Canada M&amp;A Announcements</b>						
U.S. & Canada M&A Announcements	\$123B/ 770 deals	\$264B/ 1,040 deals	\$102.9B/ 492 deals	\$135.5B/ 549 deals	\$122.9B/ 487 deals	\$124.8B/ 409 deals
<b>Global M&amp;A Announcements</b>						
Global M&A Announcements	\$215B/ 1,303 deals	\$373B/ 1,694 deals	\$305.1B/ 1,021 deals	\$286.4B/ 1,078 deals	\$194.5B/ 1,004 deals	\$169.6B/ 700 deals

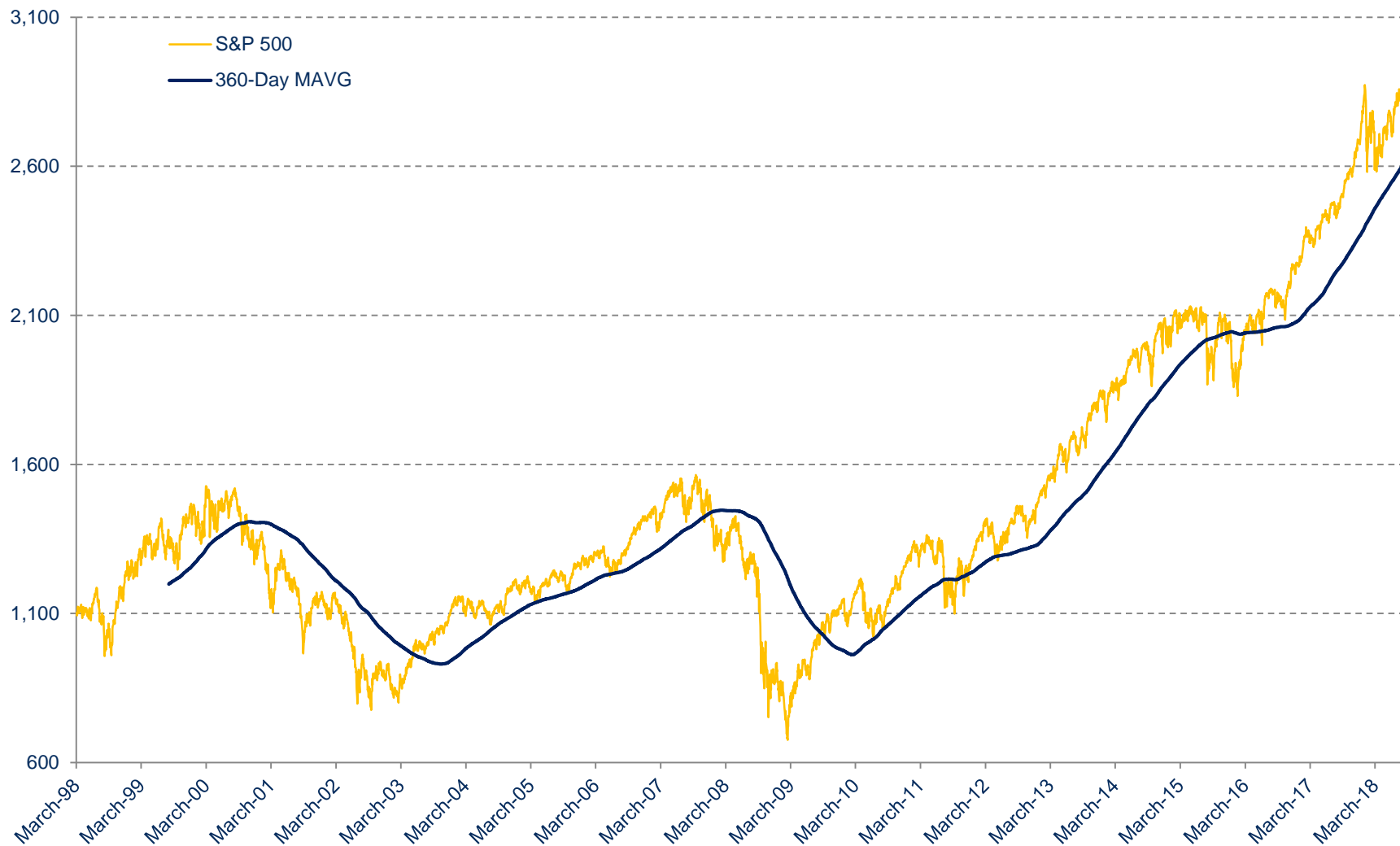
Source: Bloomberg, EnerCom Inc.

# U.S. Treasury Yields





# S&P 500 vs. 360-Day MAVG (Long-Term)

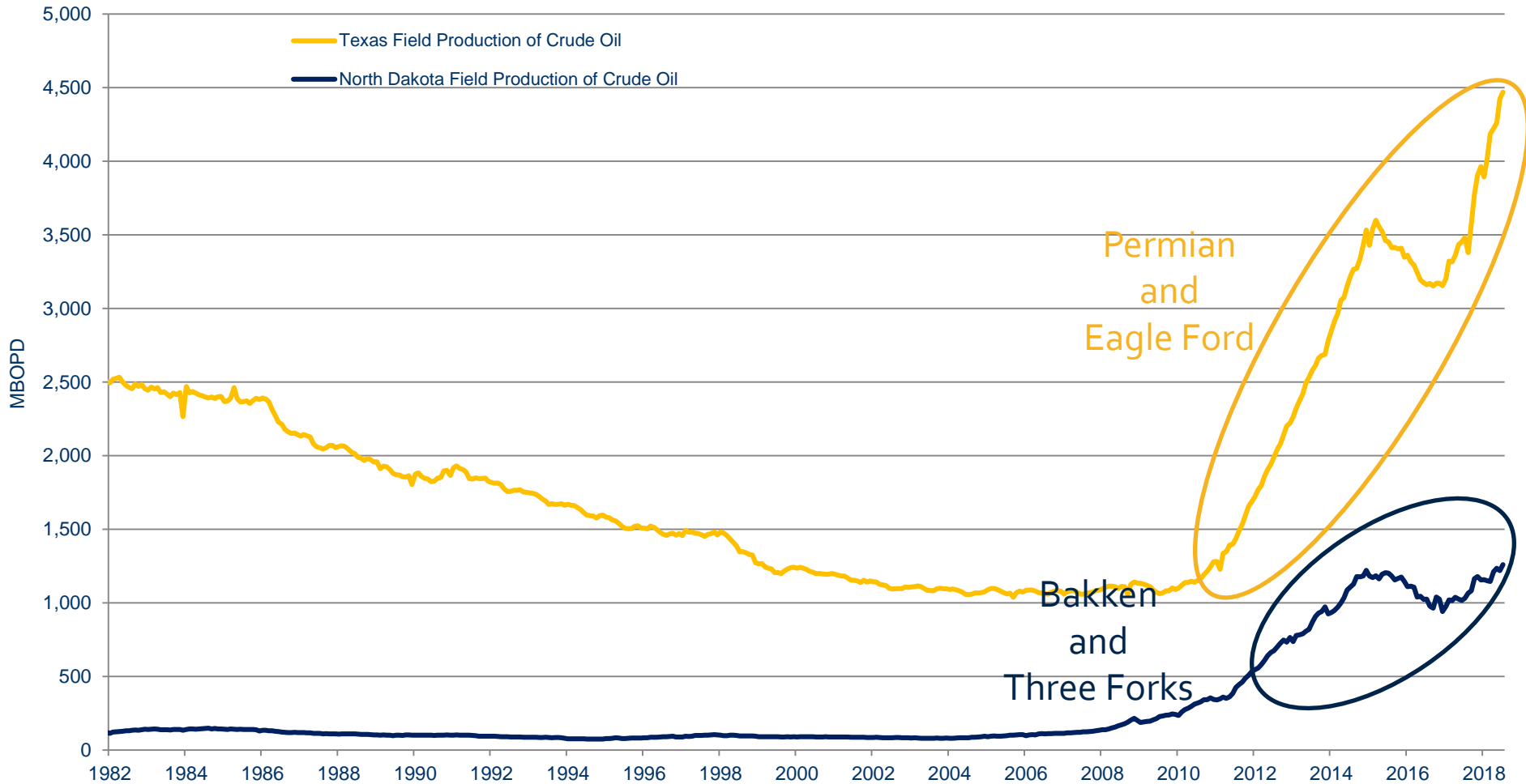


Source: Bloomberg.

# Key Basins Driving Oil Production Growth



## Texas and North Dakota Crude Oil Production

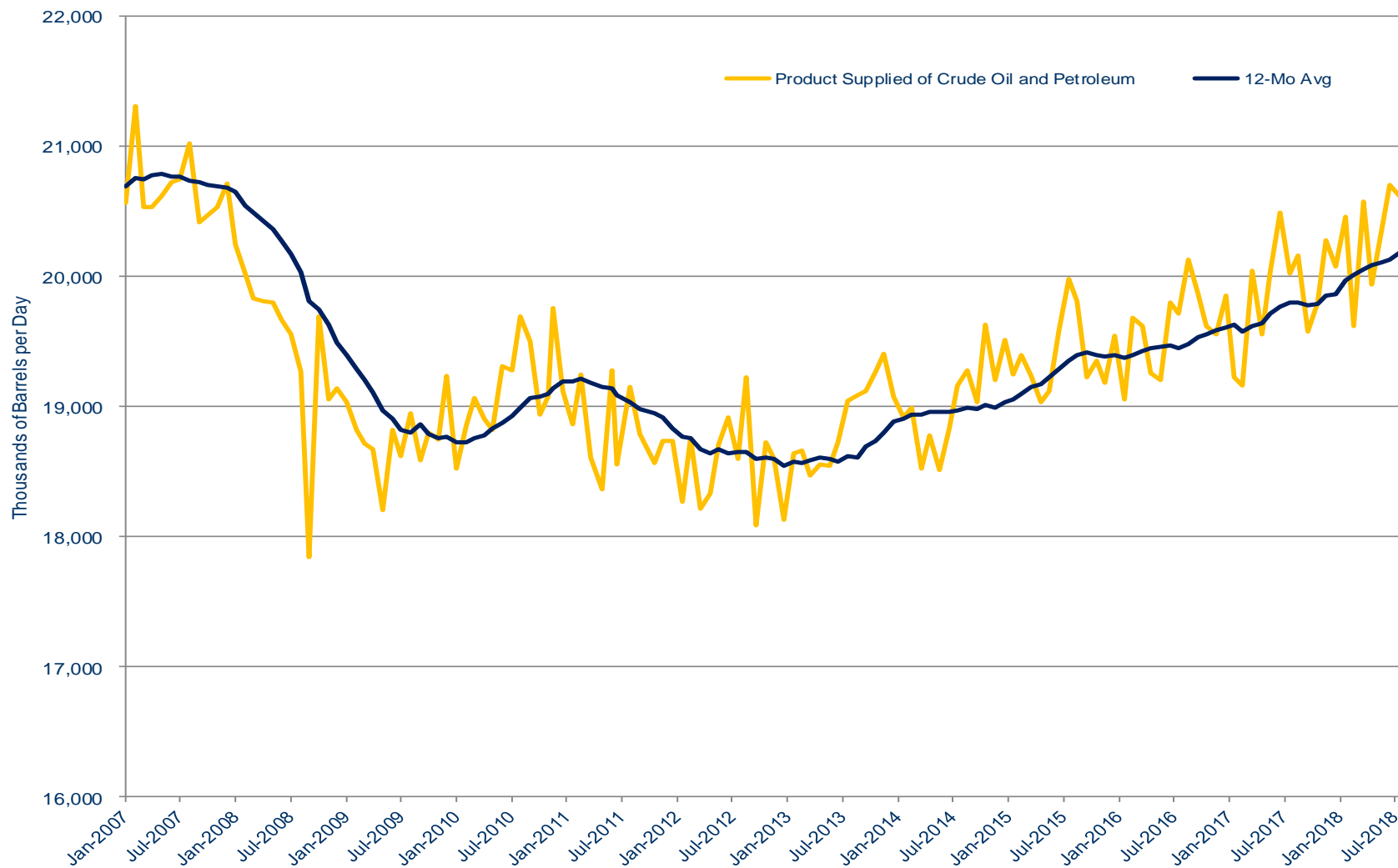


Source: EIA.

# U.S. Oil and Petroleum Product Supplied

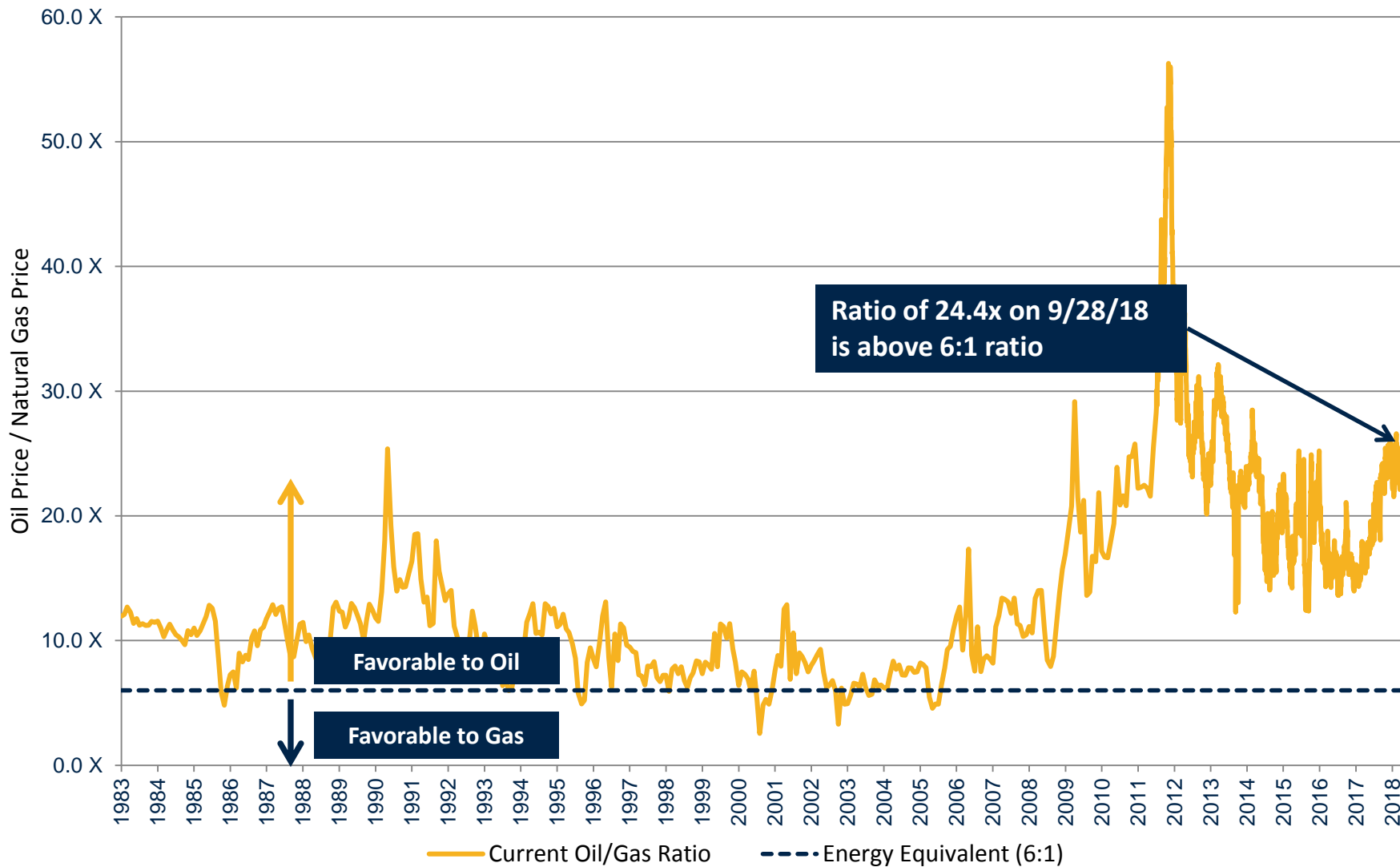


Jul-18 U.S. oil demand was down 0.4% from Jun-18 and up 3.0% from Jul-17



Source: EIA, EnerCom

# Energy Equivalent Pricing

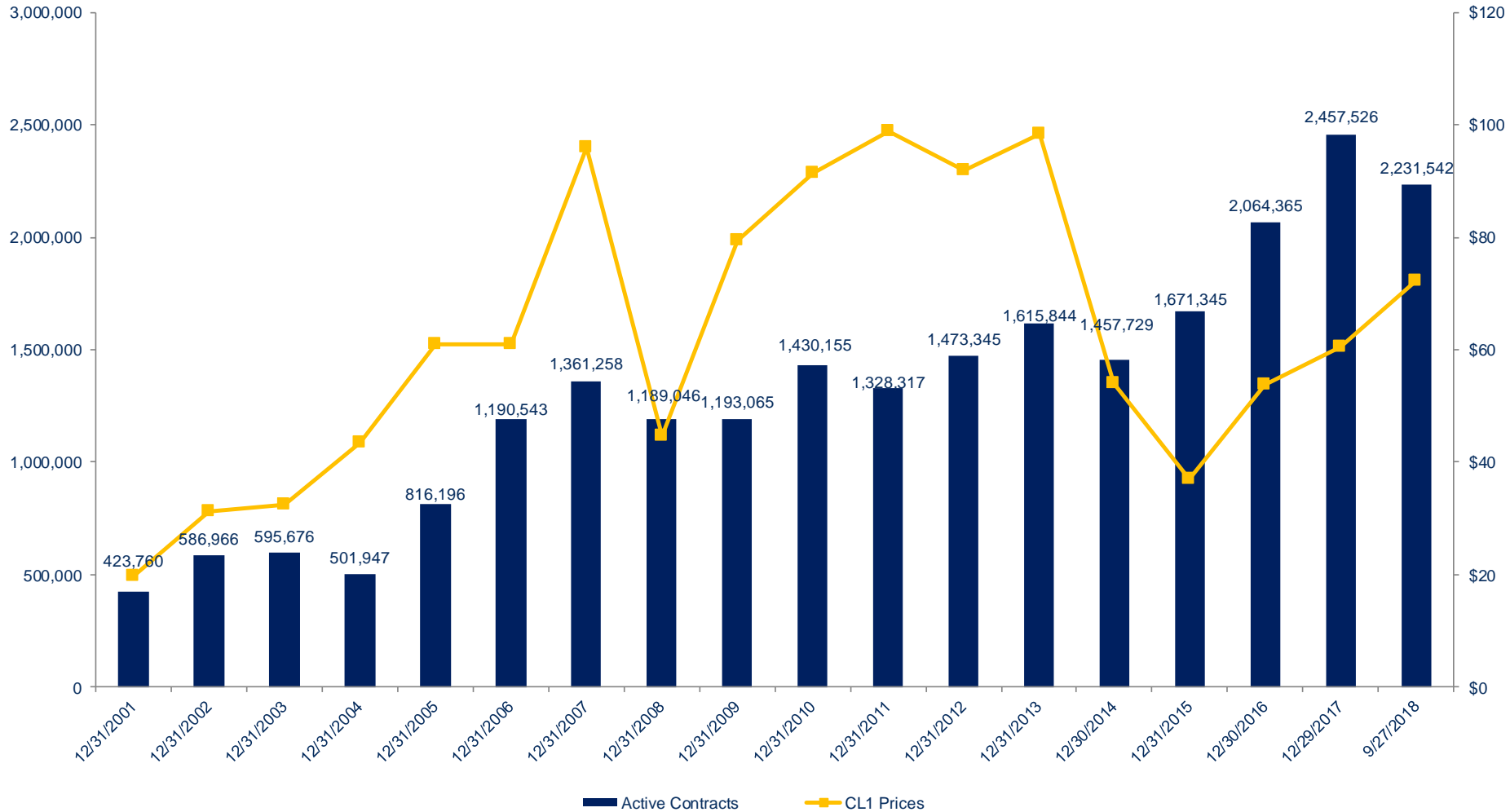


Source: Bloomberg, EIA, EnerCom.

# Active NYMEX Crude Oil Contracts

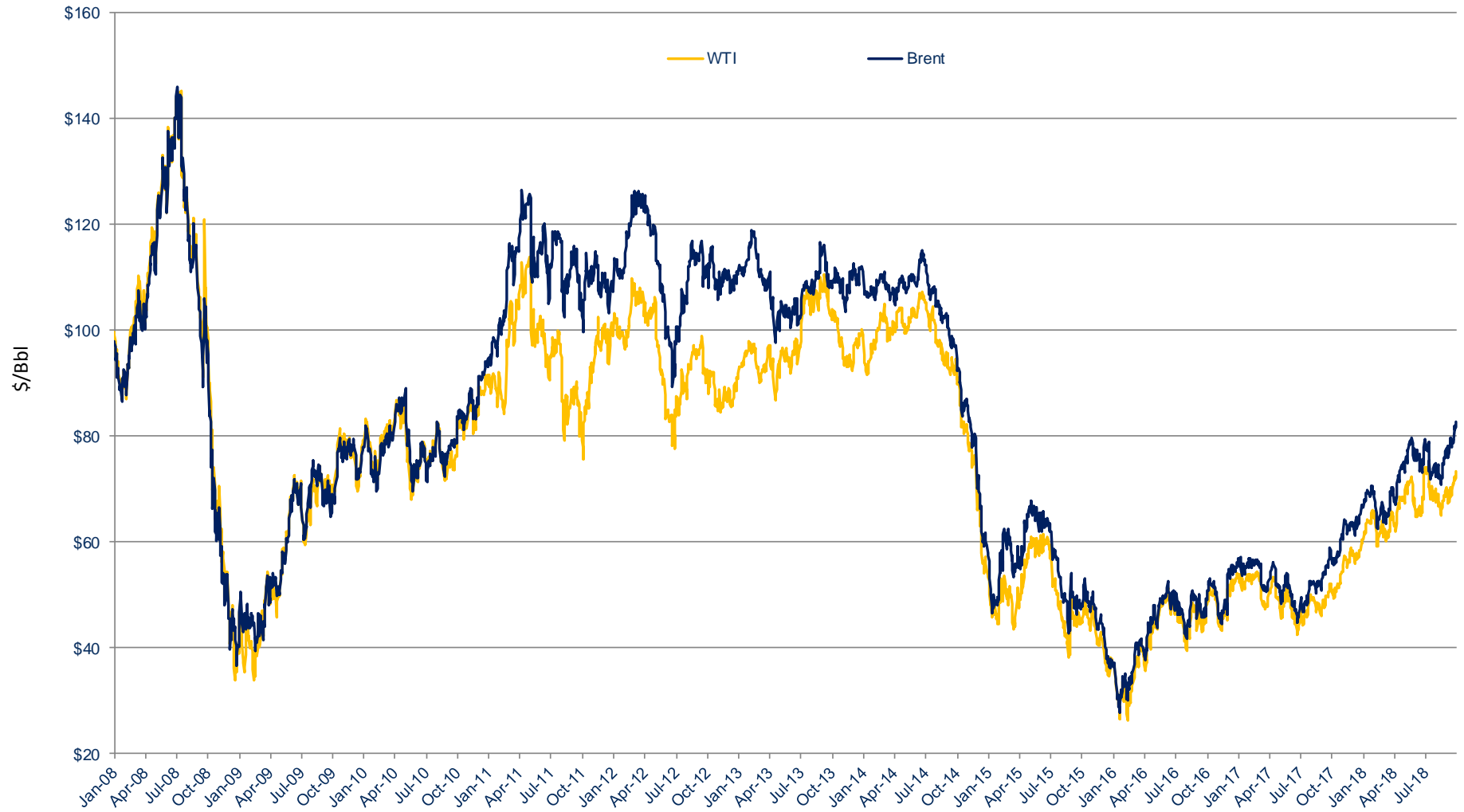


2001 - 2018 YTD



Sources: Bloomberg

# Oil Prices – WTI and Brent

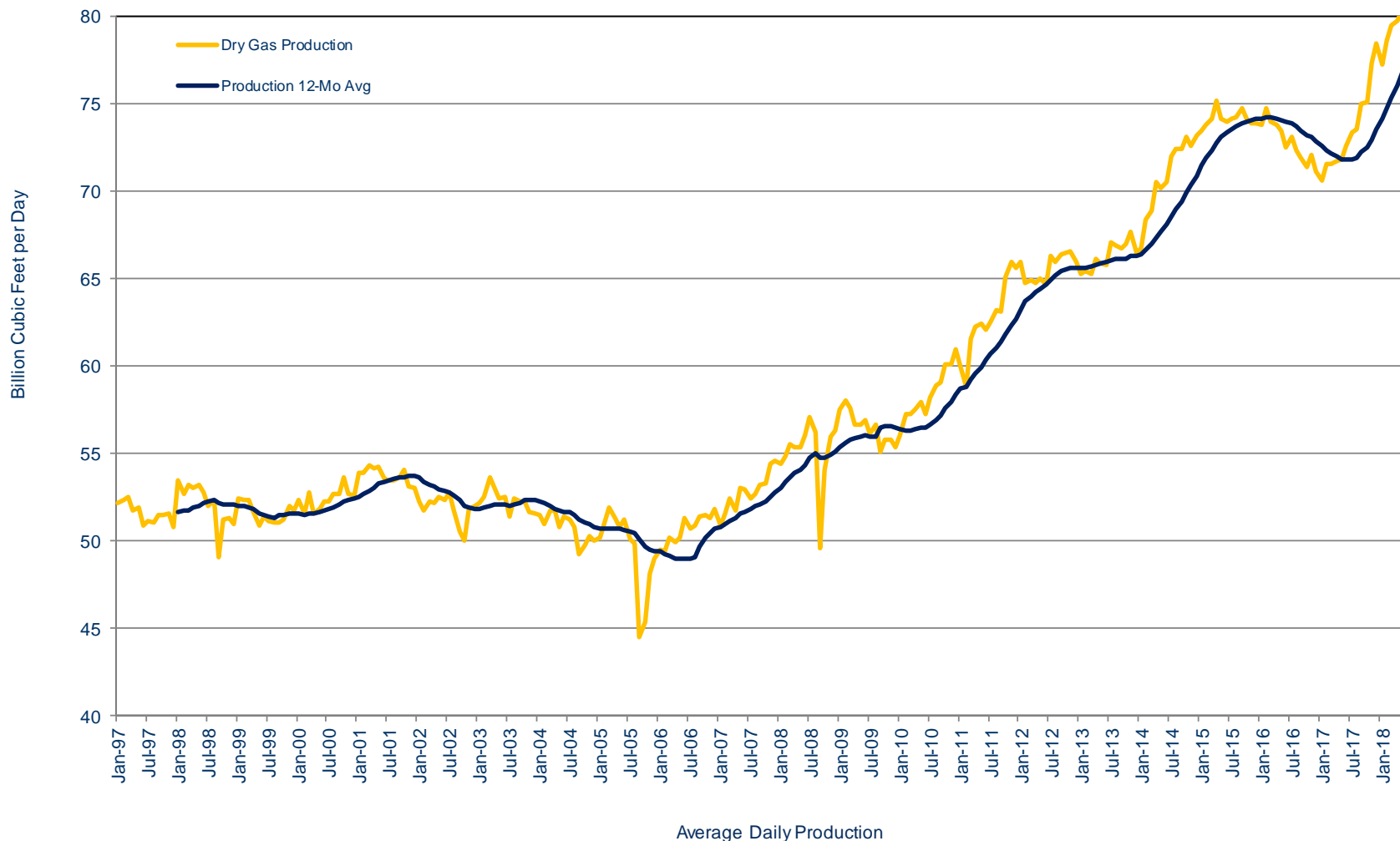


Source: Bloomberg.

# U.S. Natural Gas Production



Average production in the Lower 48 was up 0.84% in Jun-18 from May-18 and up 11.56% from Jun-17

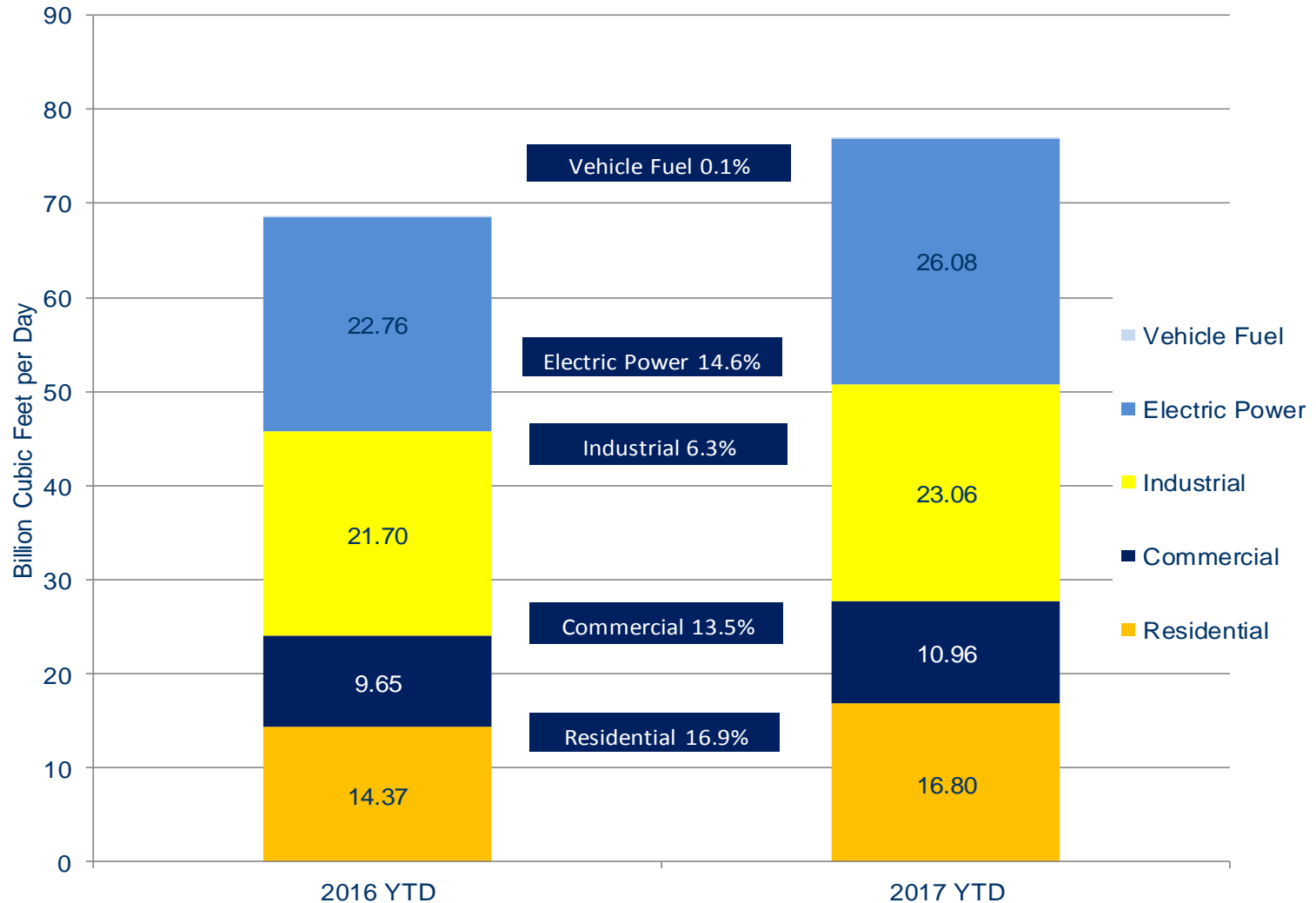


Source: EIA.

# U.S. Natural Gas Consumption



YTD 2018 Natural Gas Consumption 12.2% over 2017



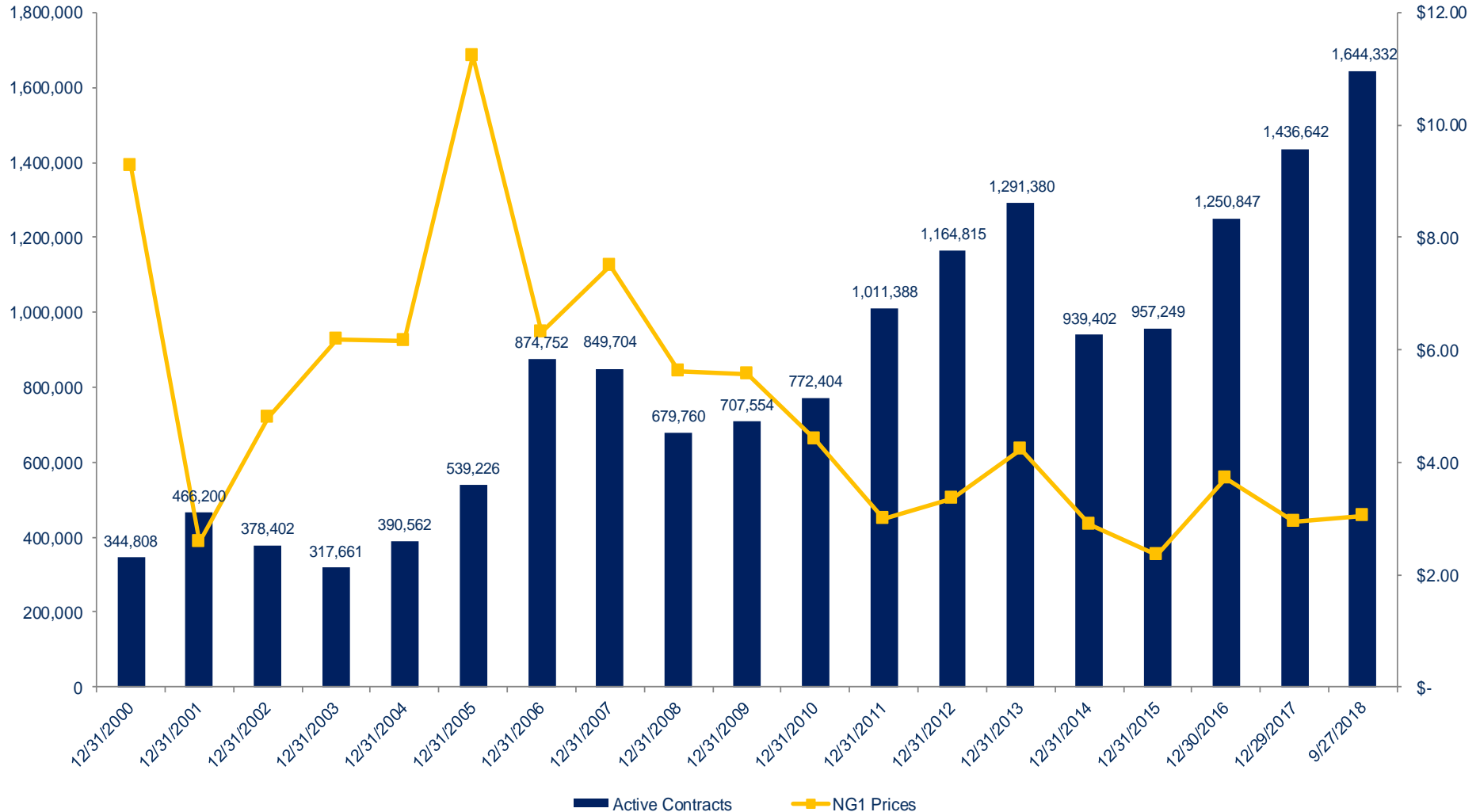
Source: EIA and EnerCom.



# Active Natural Gas Contracts

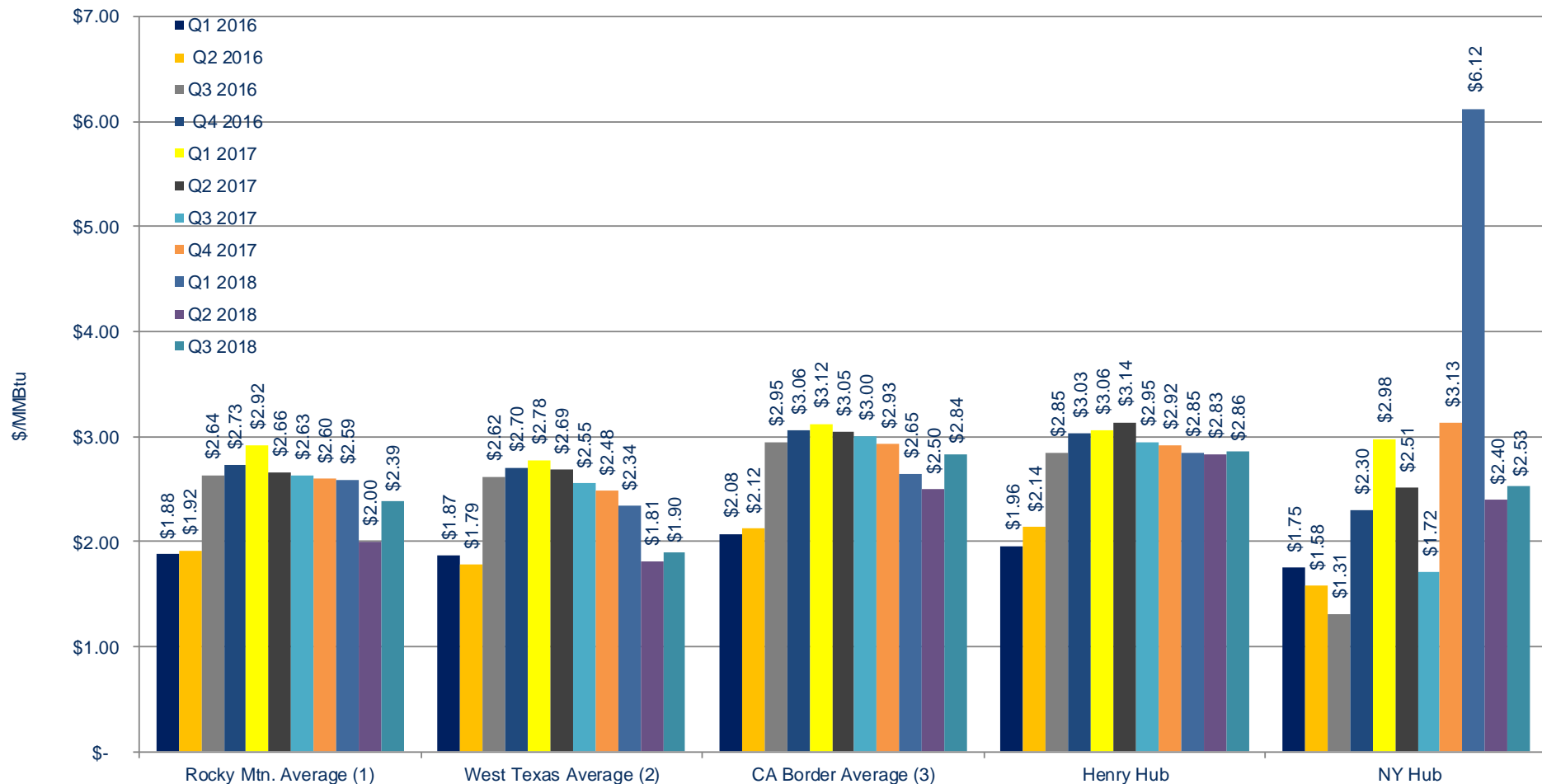


2000-2017 YTD



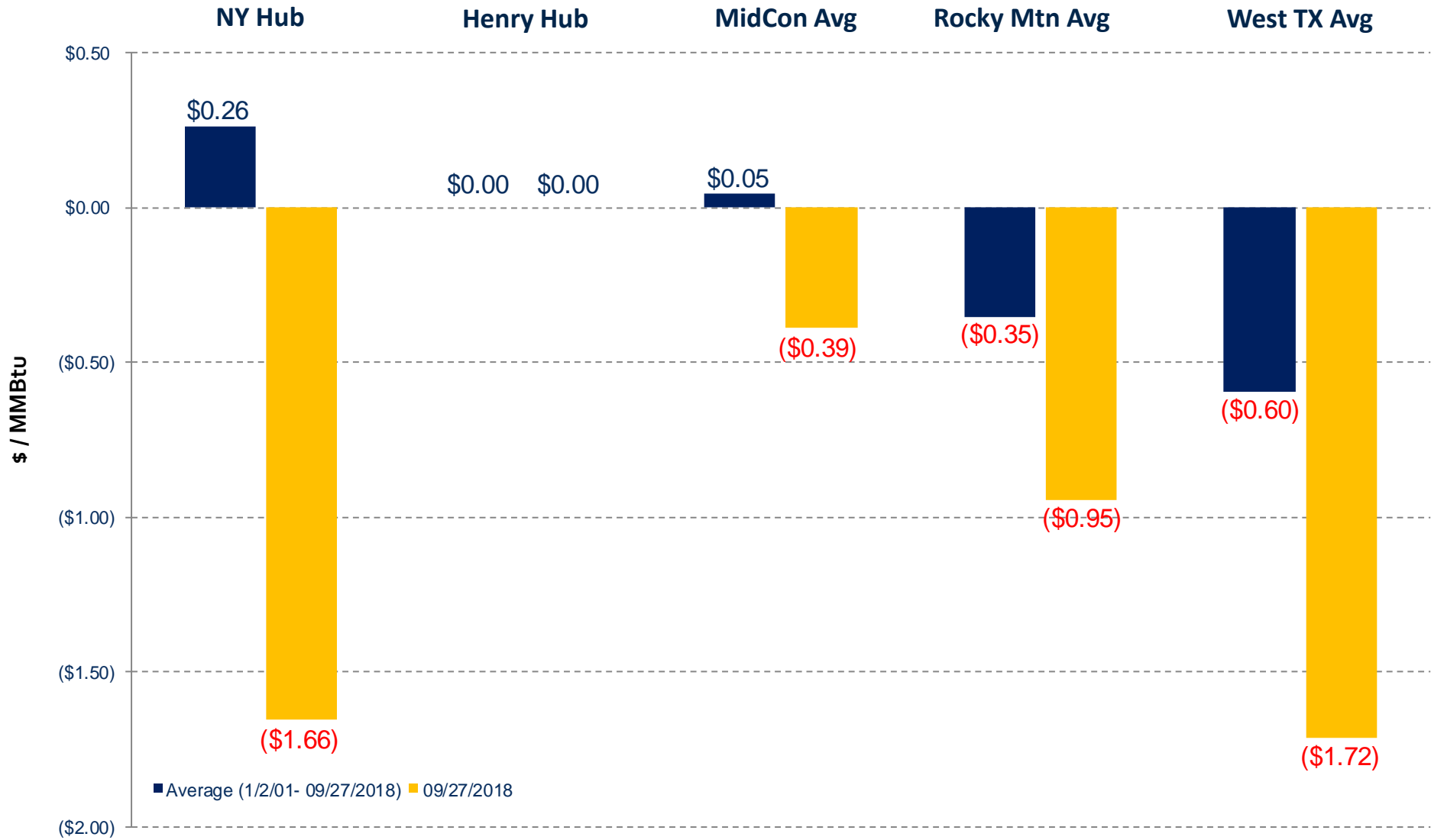
Sources: Bloomberg

# U.S. Regional Natural Gas Prices



Notes: (1) Average of 3 Rocky Mountain hubs (2) Average of 2 West Texas hubs (3) Average of 3 hubs delivering gas to California border

# Regional Gas Price Differentials



Source: Bloomberg, EnerCom.