

August 5, 2019

Covering the Week of July 26 to August 1, 2019

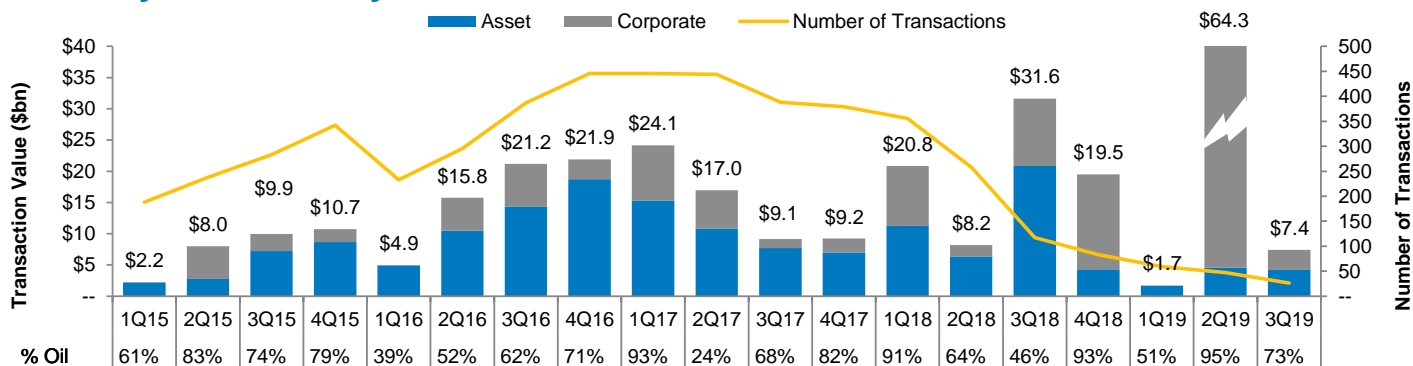
## Week in Review

- Ecopetrol and Occidental Petroleum Corporation formed a \$1.5 billion joint venture to develop acreage in Midland Basin
- Viper Energy Partners signed an agreement to acquire mineral and royalty interests from Diamondback Energy in a transaction valued at \$700 million
- Osaka Gas acquired Sabine Oil & Gas for \$610 million (see page 4 for more detail)
- Continental Resources acquired additional leasehold in the SCOOP for \$79.5 million
- Continental concurrently announced that it sold its eastern STACK water gathering and recycling system in Blaine County, OK for \$85 million to Lagoon Water Solutions
- Harvest Oil & Gas Corporation divested Barnett Shale assets for \$72 million
- Whiting Petroleum sold 6,800 non-op net acres for \$53 million
- INPEX Corporation acquired U.S. Gulf of Mexico assets from Anadarko
- Concho Resources and Solaris Water Midstream formed a joint venture focused on optimizing produced water logistics at scale in the Northern Delaware Basin

## Key Industry Indicators

Indicator	Current Value	Week's Change	% Change	Direction
Prompt Oil Price (\$/bbl)	\$53.95	(\$2.07)	(3.7%)	↓
Prompt Gas Price (\$/mmbtu)	\$2.20	(\$0.04)	(1.8%)	↓
Wkly Trans. Value (\$mm)	\$3,015	\$2,030	206%	↑
Wkly Trans. Count	8	4	100%	↑
US Rig Count	942	(4)	(0.4%)	↓
US Oil Prod'n (mmbbl/d)	12.2	0.9	8.0%	↑
US Gas Prod'n (bcf/d) <sup>(1)</sup>	109.2	(0.7)	(0.6%)	↓
US Oil Storage (mmbbl)	436.5	(8.5)	(1.9%)	↓
US Gas Storage (tcf)	2.6	0.1	2.5%	↑

## Quarterly Deal Activity



All references to last week in the comments below are through Thursday

## Commodities

- Oil ended last week down. On Thursday, WTI had the worst drop in four years. President Trump announced 10% tariffs on an additional \$300 billion of Chinese imports, including technology products and consumer products. The U.S. Fed announced a rate cut. The news of a tighter military alliance between Russia and Iran with planned activities in the Strait also affected the market. Additionally, Israel expanded airstrikes against Iranian assets in Iraq and Syria in the last couple of weeks. The near-term contract closed down \$2.07, or 3.7%, at \$53.95
- Natural gas ended last week down. Cameron LNG received FERC approval to start service. Transwestern announced a force majeure on its westbound line from WAHA to New Mexico following a compressor malfunction. There was also an explosion on TETCO that caused a force majeure to be issued south of the Dansville Compressor station in Kentucky. The EIA storage number had a higher build than expected. The near-term contract closed down \$0.04, or 1.8%, at \$2.20

## Equity Markets

- S&P E&P<sup>(2)</sup> underperformed last week (3.8)% vs. SPX<sup>(2)</sup> (1.7)%
- The major U.S. equity indexes finished mostly lower last week. Consumer discretionary, consumer staples, financials, industrials, materials, health care, and technology finished lower. Real estate finished higher

## Debt Markets

- Ten issuers priced 12 tranches for \$8.1 billion in proceeds
- U.S. high yield funds reported an outflow of \$115 million
- High yield index yield was 6.01%; high yield energy index yield was 8.45%

Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, EIA, PLS

Note: Current quarter's data is through the week covered by this issue.

1. EIA U.S. natural gas gross withdrawals and production reported monthly as of May 2019.

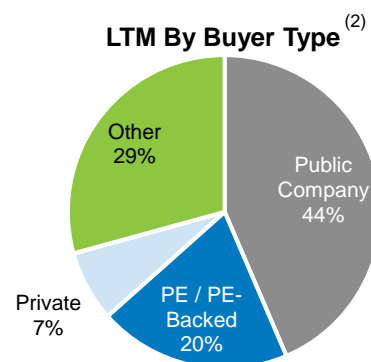
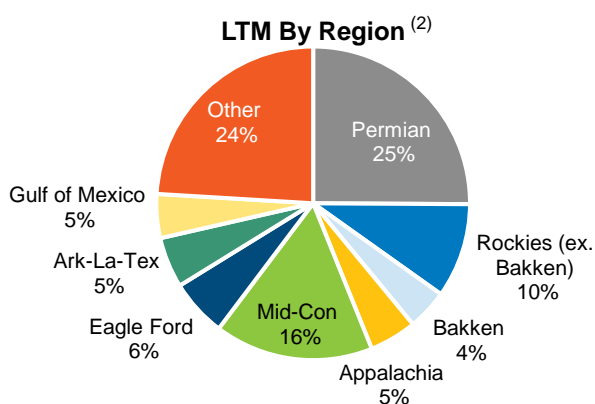
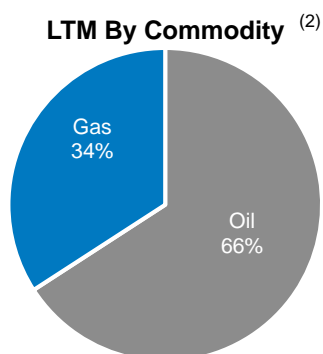
2. S&P E&P = S&P Oil & Gas E&P Select Industry, SPX = S&P 500 Index.

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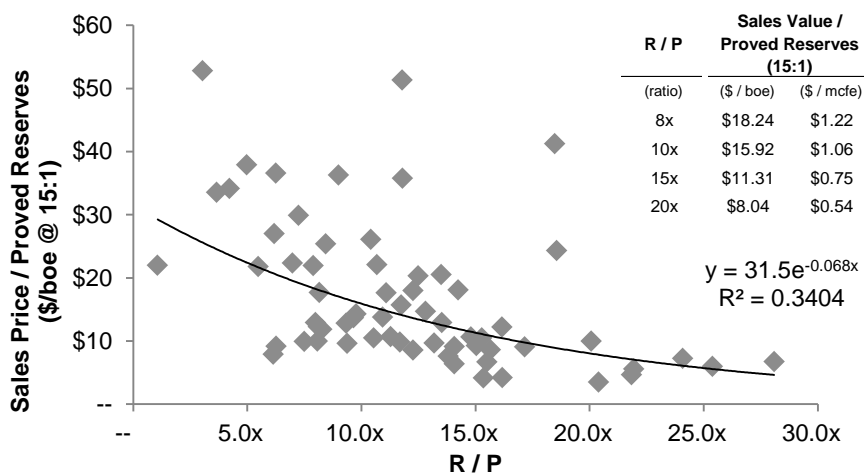
## The 10 Most Recent Asset Transactions Over \$20 Million

Ann'd Date	Buyer	Seller	Area	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre)
31-Jul-19	Continental Resources Inc	Undisclosed Seller	Mid-Continent	SCOOP assets	\$80	n.a.	n.a.	n.a.
31-Jul-19	Ecopetrol	Oxy	Permian	Midland Basin JV	\$1,500	n.a.	n.a.	\$31,559
31-Jul-19	Undisclosed Buyer	Whiting Petroleum	Multi-Region	6,800 net acres in non-op assets	\$53	n.a.	\$75,391	\$7,794
30-Jul-19	Bedrock Energy Partners	Harvest Oil & Gas Corp	Barnett	~32,000 net acres in Barnett Shale	\$72	\$1.56	\$7,770	\$2,250
30-Jul-19	Viper Energy Partners	Diamondback Energy	Permian	Permian royalty assets	\$700	n.a.	\$175,000	nmf
29-Jul-19	Osaka Gas	Sabine Oil & Gas Corp	Ark-La-Tex	175,000 net acres in East TX	\$610	n.a.	\$17,429	\$3,486
24-Jul-19	Diversified Gas & Oil	EdgeMarc Energy Holdings	Marcellus/Utica	12,730 net acres in Ohio Utica	\$50	\$1.92	\$4,616	\$3,928
23-Jul-19	Colony Capital Inc	California Resources Corp	California	San Joaquin Basin JV	\$320	n.a.	n.a.	n.a.
19-Jul-19	Multiple	Range Resources Corp	Marcellus/Utica	Southwest Appalachia ORRIs	\$600	n.a.	\$94,742	nmf
17-Jul-19	Undisclosed Buyer	Sundance Energy	Eagle Ford	6,100 net acres in Dimmit County	\$30	n.a.	\$28,069	\$4,836

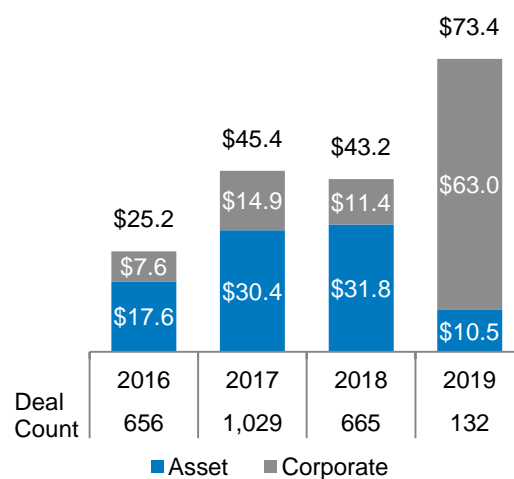
Blue = BMO provided transaction advisory services    Green = BMO provided acquisition financing or related services  
Purple = BMO provided both transaction advisory services and acquisition financing or related services



## A&D Valuation Trends<sup>(3)</sup>



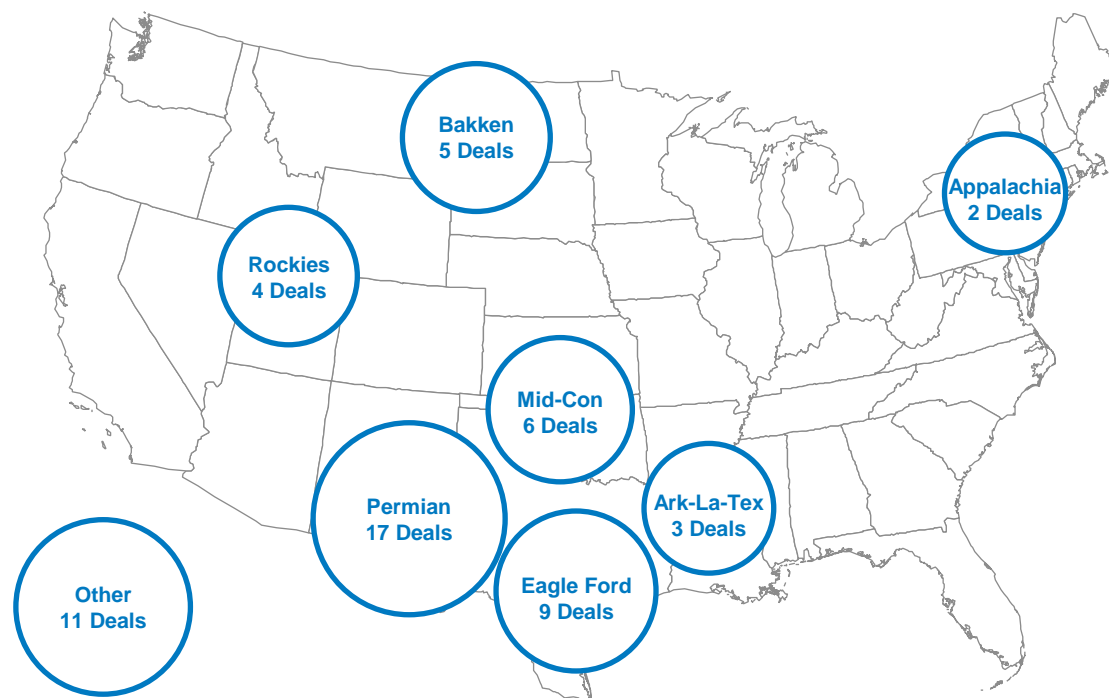
## YTD Deal Activity (\$bn)<sup>(4)</sup>



2 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, PLS  
 1. Represents total enterprise value.    2. Calculated as percentage of total LTM transaction count (number of transactions, not dollar value).  
 3. 65 transactions from January 2015 to 2019 with transaction value >\$20mm. Adjusted for changes in price outlooks. Recalculated boe reserves are on a 15:1 (gas:oil) basis. Acreage transactions excluded by using deals with PDP of >= 40% of total proved.  
 4. Year-to-date data is through this week's date for each respective year.

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## Select Significant Deals on the Market



## M&A&D Headlines

- [Ecopetrol and Occidental Form Strategic Partnership to Develop Acreage in Midland Basin](#)
- [Viper Energy Partners LP, a Subsidiary of Diamondback Energy, Inc., Reports Second Quarter 2019 Financial and Operating Results; Announces Significant Drop Down Transaction](#)
- [Japan's Osaka Gas to Buy Sabine Oil for \\$610 Million](#)
- [ConocoPhillips Reports Second-Quarter 2019 Results; Delivered Strong Free Cash Flow and Financial Returns; Raised 2019 Planned Share Buybacks \(includes A&D announcement\)](#)
- [Continental Resources Announces \\$85 Million Divestiture of Water Handling Facility in STACK and Strategic Initiatives \(includes A&D announcement\)](#)
- [Harvest Oil & Gas Announces Divestiture of Barnett Shale Assets](#)
- [Whiting Petroleum Corporation Announces Second Quarter 2019 Financial and Operating Results \(includes A&D announcement\)](#)
- [INPEX Acquires Keathley Canyon Blocks 921/965](#)

## Industry Headlines

- [OPEC Production Lowest Since 2014 as U.S. Squeeze on Iran Continues](#)
- [Industry Economist Sees Headwinds Inhibiting U.S., Texas Upstream Expansion During 2H-2019](#)
- [BP Avoids Sending its Tankers through the Strait of Hormuz](#)
- [Big Crude Inventories Draw Gives Bullish Boost to Oil](#)
- [EIA: U.S. Crude Oil Production Continues to Set Records](#)
- [Global Energy Workforce Shifting from Onshore Shale to Offshore](#)
- [Oil Slides as Dollar Strengthens After Fed's Cautious Rate Cut](#)
- [Excess Supply Drives Asia LNG to 10-Year Low](#)
- [Concho Resources Inc. and Solaris Water Midstream Form Joint Venture for Produced Water Management in the Northern Delaware Basin](#)

(Click headline to link to the full article)

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## Interesting Deal of the Week: Osaka Gas Acquires Sabine Oil & Gas for \$610 Million

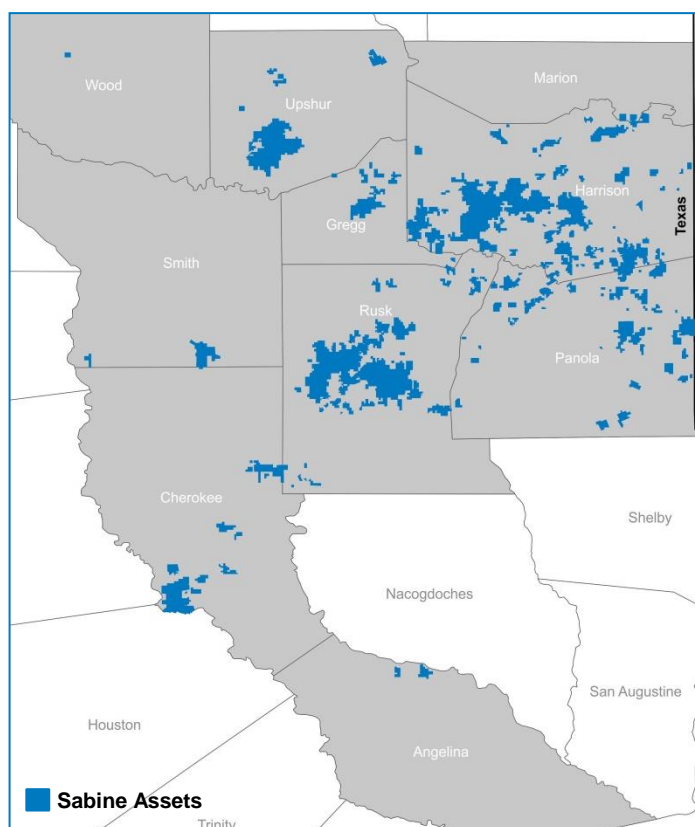
### TRANSACTION SUMMARY

- On July 29, 2019, Osaka Gas Co Ltd (“Osaka”) announced it acquired Sabine Oil & Gas Corporation (“Sabine”) for \$610 million
- This transaction is expected to close by YE 2019

### OBSERVATIONS

- This transaction marks the first acquisition of a U.S. shale gas developer by a Japanese company
- In July 2018, Osaka bought a 35% stake in the eastern half of the asset being developed by Sabine

### ACQUIRED ASSETS



### ASSET SUMMARY

- 175,000 net acres in East Texas
  - Primarily in Harrison, Panola, Rusk, and Upshur counties, TX
  - 66,768 net acres targeting the Haynesville
- 1,200 wells producing 210 mmcf/d
- Significant drilling inventory in the Haynesville and Cotton Valley formations
- Proved developed reserves of 490 bcfe
- ~1,695 undeveloped locations
  - 1,066 Haynesville
  - 620 Cotton Valley
  - 9 Other

### TRANSACTION METRICS

#### Purchase Price (US\$ mm)

<b>Total Consideration</b>	<b>\$610</b>
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#### Metrics

Net Acres	175,000
Haynesville Net Acres	66,768
Net Production (mcf/d)	210,000
Undeveloped Locations	1,695
Proved Developed Reserves (bcfe)	490

#### Multiples

TEV / Net Acres (\$/acre)	\$3,486
TEV / Adj. Net Acres (\$/acre) <sup>(1)</sup>	\$1,086
TEV / Haynesville Net Acres (\$/acre)	\$9,136
TEV / Adj. Haynesville Net Acres (\$/acre) <sup>(1)</sup>	\$2,846
TEV / Net Production (\$/mcf/d)	\$2,905
TEV / Net Location (\$mm/location)	\$0.4
TEV / Adj. Net Location (\$mm/location) <sup>(1)</sup>	\$0.1
TEV / PD Reserves (\$/mcf)	\$1.24

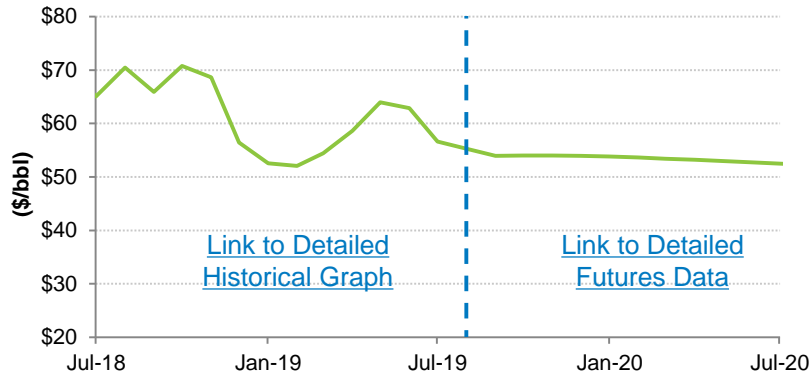
Source: Press releases, company disclosure, marketing brochure

1. Value adjusted by \$2,000 per flowing mcf/d.

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## Commodity Prices

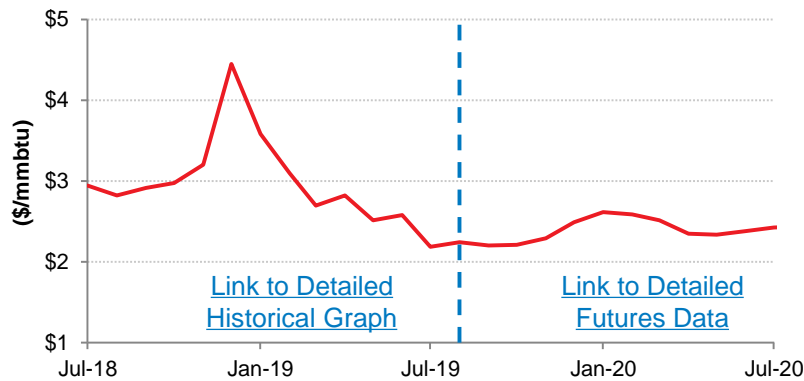
### WTI OIL (HISTORICAL / FORECAST)



**NYMEX WTI Futures as of 01-Aug-19 Close (\$/bbl)**

Period <sup>(1)</sup>	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
12 Mo. Strip	\$53.37	\$55.71	\$56.33	\$64.62
2019	\$53.99	\$56.18	\$56.32	\$63.69
2020	\$52.65	\$55.06	\$55.82	\$60.52
2021	\$50.77	\$53.09	\$54.77	\$57.99
2022	\$50.21	\$52.27	\$54.22	\$56.13
2023	\$50.64	\$52.31	\$54.13	\$54.91

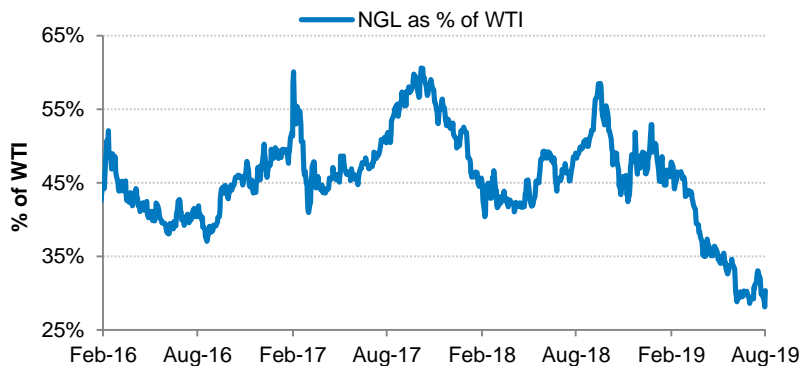
### HENRY HUB NATURAL GAS (HISTORICAL / FORECAST)



**NYMEX Gas Futures as of 01-Aug-19 Close (\$/mmbtu)**

Period <sup>(1)</sup>	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
12 Mo. Strip	\$2.40	\$2.41	\$2.84	\$2.76
2019	\$2.30	\$2.32	\$2.79	\$2.71
2020	\$2.48	\$2.49	\$2.70	\$2.60
2021	\$2.55	\$2.55	\$2.62	\$2.57
2022	\$2.73	\$2.73	\$2.80	\$2.71
2023	\$2.73	\$2.73	\$2.80	\$2.71

### NGL PRICING<sup>(2)</sup>



**Historical Prices as of 01-Aug-19 Close (\$/gal)**

NGLs	Current	Last Wk.	6 Mo. Ago	1 Yr. Ago
Ethane	\$0.13	\$0.14	\$0.35	\$0.37
Propane	\$0.45	\$0.49	\$0.70	\$0.94
Butane	\$0.47	\$0.50	\$0.75	\$1.03
Iso-butane	\$0.66	\$0.60	\$0.93	\$1.15
Pentane+	\$1.03	\$1.03	\$1.19	\$1.51

Source: BMO Commodity Products Group, Bloomberg, FactSet

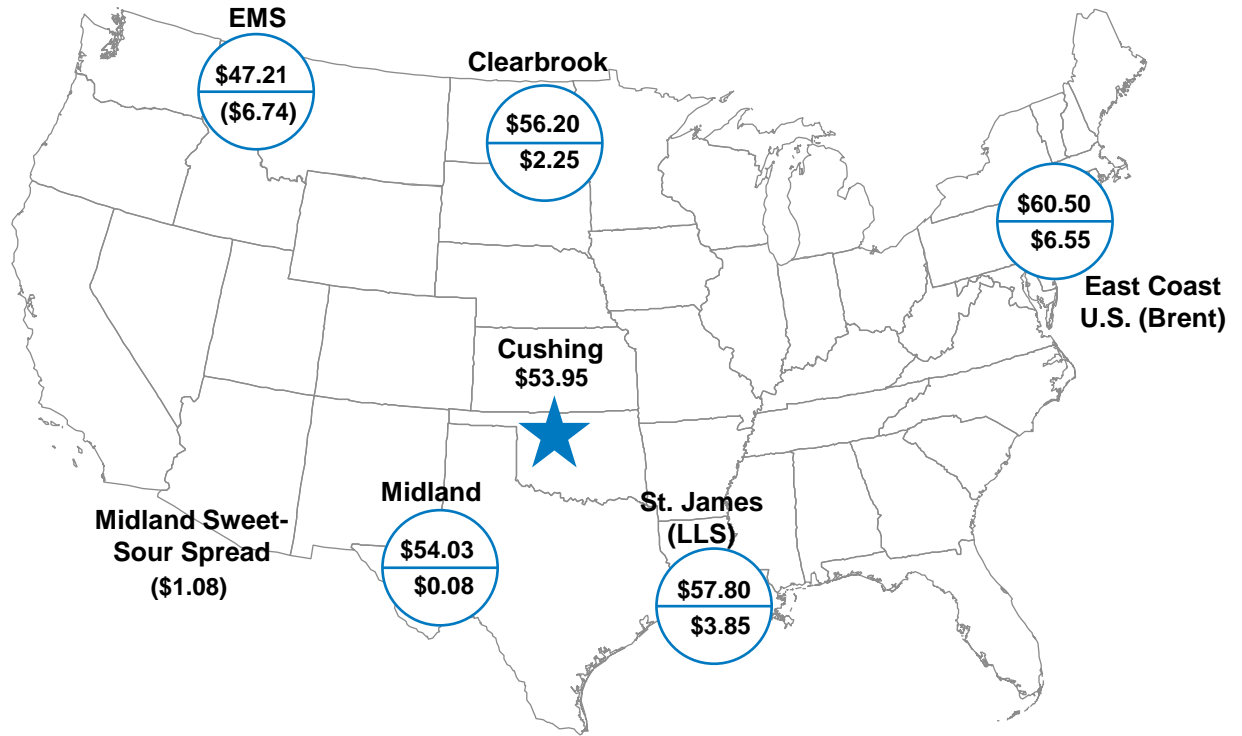
1. Future prices are calendar year average unless stated otherwise.  
2. Assumes typical Gulf Coast barrel composition.

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## Commodity Prices (cont'd)

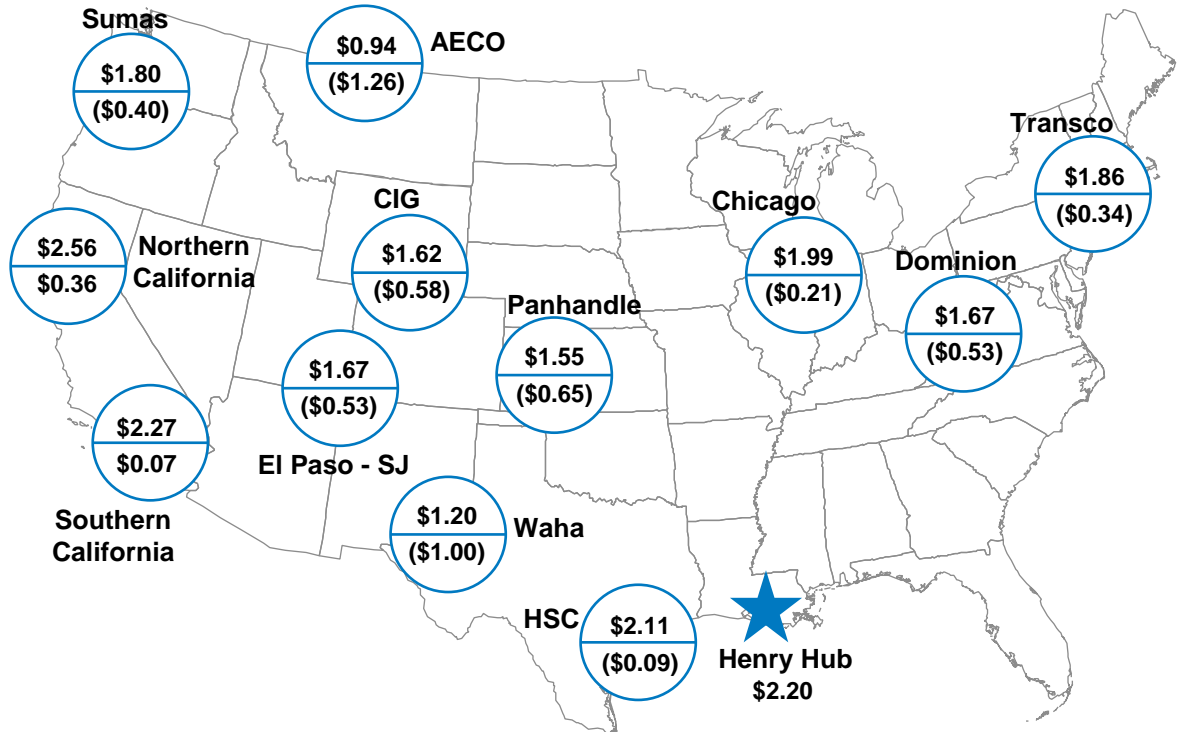
OIL PRICING & DIFFERENTIALS TO CUSHING WTI (\$ / BBL) – AS OF 01-AUG-19

Legend



NATURAL GAS PRICING & DIFFERENTIALS TO HENRY HUB (\$ / MMBTU) – AS OF 01-AUG-19

Legend



Source: BMO Commodity Products Group, Bloomberg

Note: Prices and differentials are for prompt month futures except for Clearbrook which is based on spot prices.

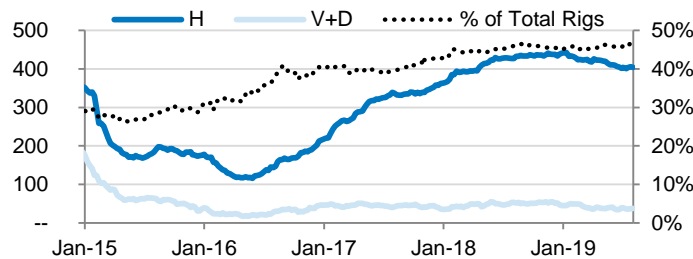
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## Permian Snapshot

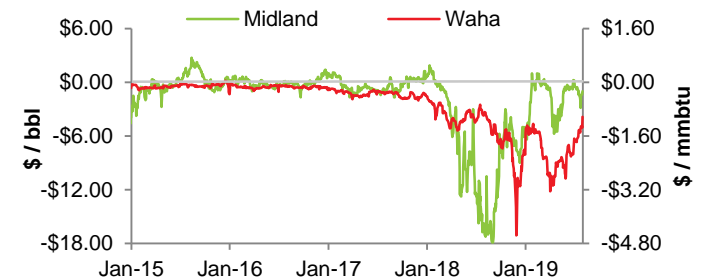
Item	Value	Wkly Change	Last Week
Rig Count	442	↓	(1) 443
Permitting Activity	122	↓	(90) 212

Item	Value	Wkly Change	Last Week
Oil Differential	(\$1.00)	↑	\$1.85 (\$2.85)
Gas Differential	(\$1.03)	↑	\$0.35 (\$1.39)

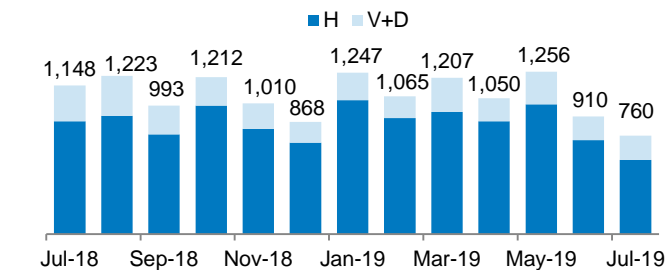
### RIG COUNT



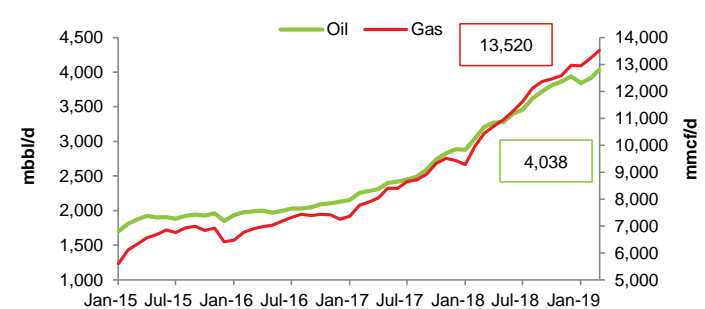
### DIFFERENTIALS



### PERMITTING ACTIVITY BY MONTH



### GROSS PRODUCTION

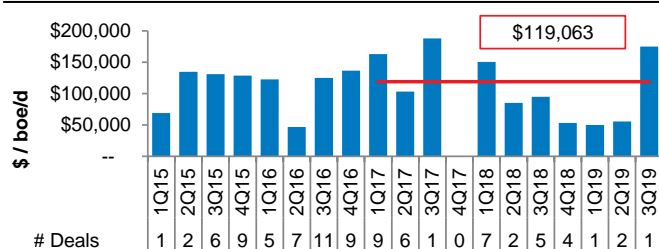


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

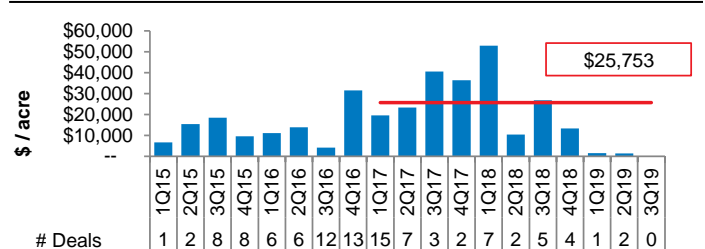
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup>	Proved Multiple	Prod. Multiple	Net Acres
				(\$mm)	(\$/boe)	(\$/boe/d)	(\$/acre) <sup>(2)</sup>
31-Jul-19	Ecopetrol	Oxy	Midland Basin JV	\$1,500	n.a.	n.a.	\$31,559
30-Jul-19	Viper Energy Partners	Diamondback Energy	Permian royalty assets	\$700	n.a.	\$175,000	nmf
24-Jun-19	Alliance Resource Partners	Wing Resources	Midland Basin mineral interests	\$145	n.a.	n.a.	nmf
07-May-19	Sabinal; Undisclosed	Diamondback Energy	CBP, NW Shelf, & Midland Basin	\$322	n.a.	\$49,538	\$2,927
08-Apr-19	Sequitur Energy Resources	Callon	9,850 net acres in Reagan & Upton, TX	\$260	n.a.	\$65,000	\$26,396
				<b>Mean</b>	<b>n.a.</b>	<b>\$96,513</b>	<b>\$20,294</b>
				<b>Median</b>	<b>n.a.</b>	<b>\$65,000</b>	<b>\$26,396</b>

Blue = BMO provided transaction advisory services    Green = BMO provided acquisition financing or related services  
Purple = BMO provided both transaction advisory services and acquisition financing or related services

### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.
- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018 & 2019.

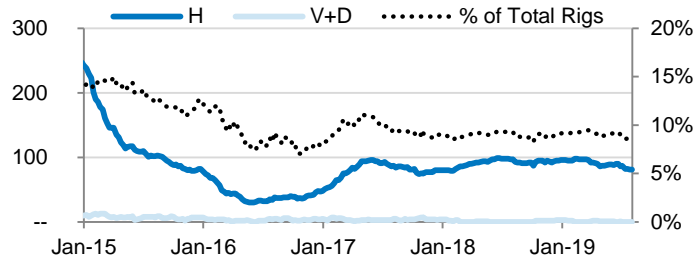
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## Eagle Ford Snapshot

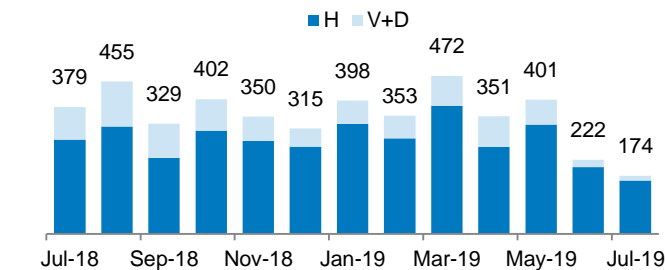
Item	Value	Wkly Change	Last Week
Rig Count	81	█ --	81
Permitting Activity	41	↓ (17)	58

Item	Value	Wkly Change	Last Week
Oil Differential	\$4.10	↓ (\$0.55)	\$4.65
Gas Differential	(\$0.09)	↓ (\$0.01)	(\$0.08)

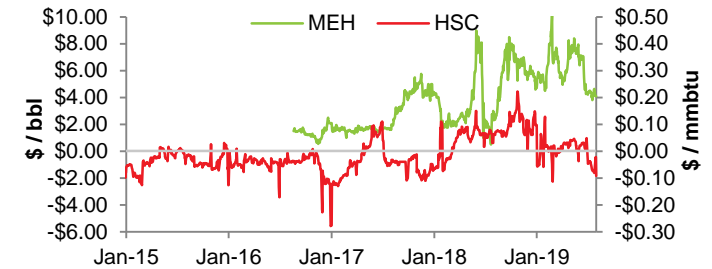
### RIG COUNT



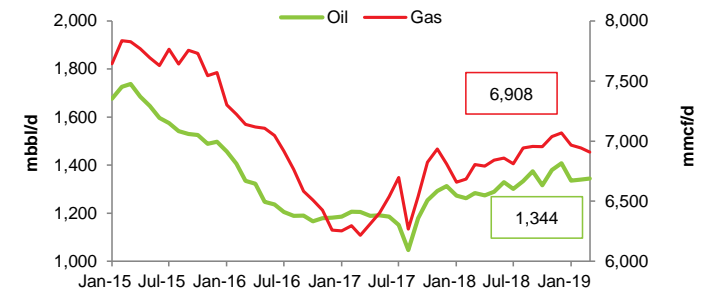
### PERMITTING ACTIVITY BY MONTH



### DIFFERENTIALS



### GROSS PRODUCTION

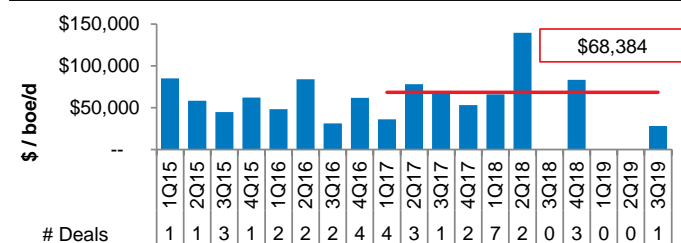


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

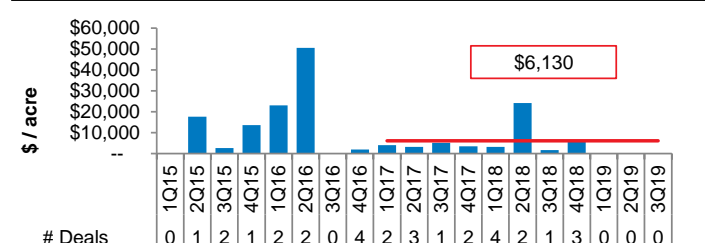
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) <sup>(2)</sup>
17-Jul-19	Undisclosed Buyer	Sundance Energy	6,100 net acres in Dimmit County	\$30	n.a.	\$28,069	\$4,836
19-Nov-18	Lonestar Resources Inc	Sabine Oil & Gas Corp	2,706 net acres in Eagle Ford	\$39	\$2.98	\$48,375	\$14,302
20-Sep-18	WildHorse	Undisclosed Seller	20,305 net Eagle Ford/Austin Chalk acres	\$35	n.a.	n.a.	\$1,743
07-Sep-18	Undisclosed Buyer	Viking Minerals LLC	1,191 net royalty acres in Eagle Ford	\$28	n.a.	n.a.	nmf
31-Jul-18	EP Energy Corp	Undisclosed Seller	Additional working interests in Eagle Ford	\$31	n.a.	n.a.	n.a.
				<b>Mean</b>	<b>\$33</b>	<b>\$2.98</b>	<b>\$38,222</b>
				<b>Median</b>	<b>\$31</b>	<b>\$2.98</b>	<b>\$38,222</b>

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Purple = BMO provided both transaction advisory services and acquisition financing or related services

### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

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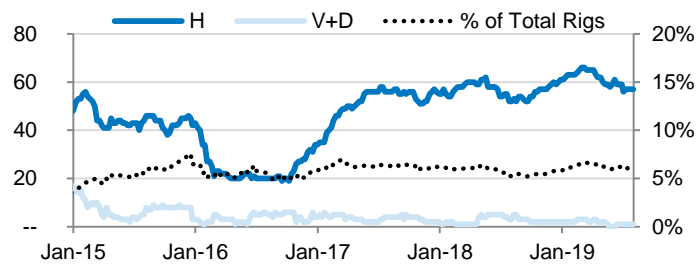
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## Ark-La-Tex Snapshot

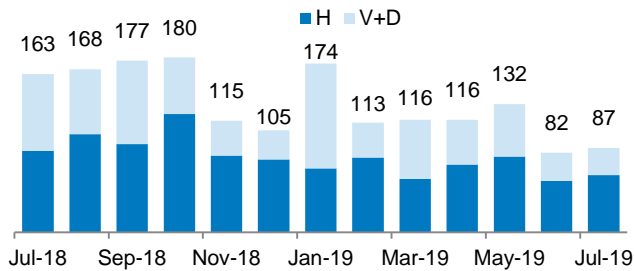
Item	Value	Wkly Change	Last Week
Rig Count	58	█ --	58
Permitting Activity	22	█ ↑ 2	20

Item	Value	Wkly Change	Last Week
Oil Differential	\$4.75	█ ↓ (\$1.50)	\$6.25
Gas Differential	--	█ --	--

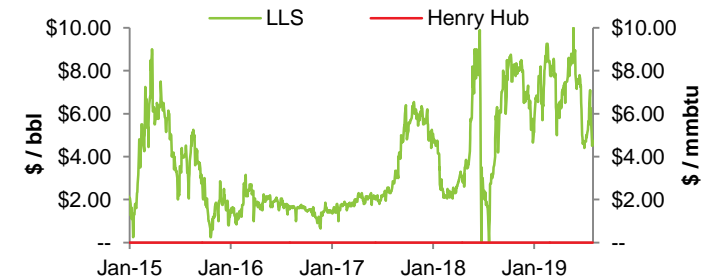
### RIG COUNT



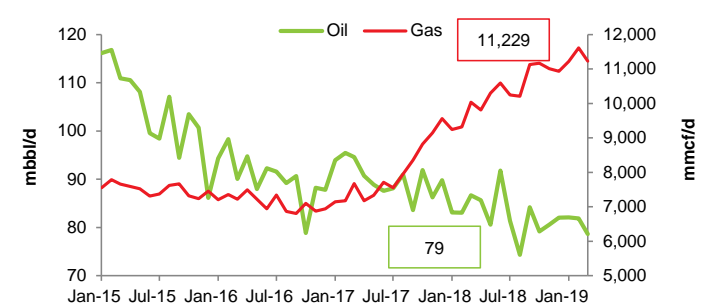
### PERMITTING ACTIVITY BY MONTH



### DIFFERENTIALS



### GROSS PRODUCTION

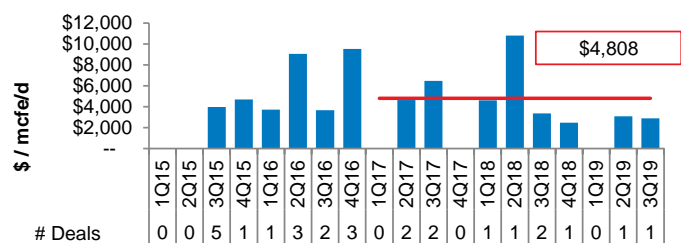


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

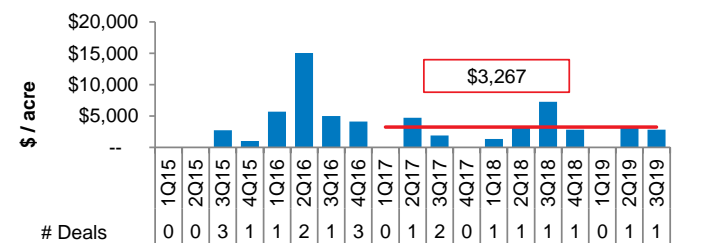
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/mcf)	Prod. Multiple (\$/mcf/d)	Net Acres (\$/acre) <sup>(2)</sup>
29-Jul-19	Osaka Gas	Sabine Oil & Gas Corp	175,000 net acres in East TX	\$610	n.a.	\$2,905	\$9,136
19-Dec-18	Comstock	Shelby Shale LLC	6,023 net acres in Haynesville	\$21	n.a.	n.a.	\$3,404
19-Nov-18	Aethon III	QEP Resources Inc	49,700 net acres in Haynesville	\$735	\$0.77	\$2,475	\$14,789
05-Sep-18	Viking Energy Group	Multiple Sellers	Texas and Louisiana assets	\$100	n.a.	n.a.	n.a.
05-Sep-18	Equinor	Texegy LLC	60,000 net acres in Austin Chalk	\$75	n.a.	n.a.	\$1,250
				<b>Mean</b>	<b>\$308</b>	<b>\$0.77</b>	<b>\$2,690</b>
				<b>Median</b>	<b>\$100</b>	<b>\$0.77</b>	<b>\$2,690</b>

Blue = BMO provided transaction advisory services    Green = BMO provided acquisition financing or related services  
Purple = BMO provided both transaction advisory services and acquisition financing or related services

### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



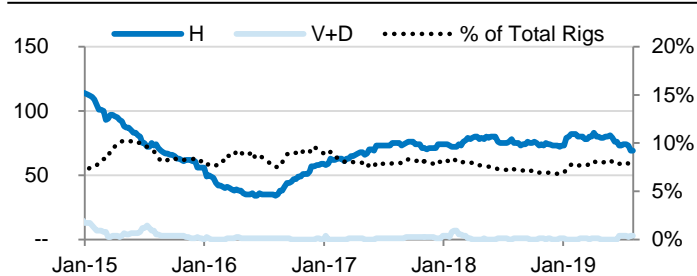
9 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS  
 Note: Current quarter's data is through the week covered by this issue.  
 1. Represents total enterprise value. Excludes transactions with deal value <\$20 million.    2. \$/acre multiple not adjusted for value associated with production.  
 3. Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.  
 4. Production valued at \$3,000/mcfepd in 2014, and \$2,000/mcfepd in 2015, 2016, 2017, 2018, and 2019.

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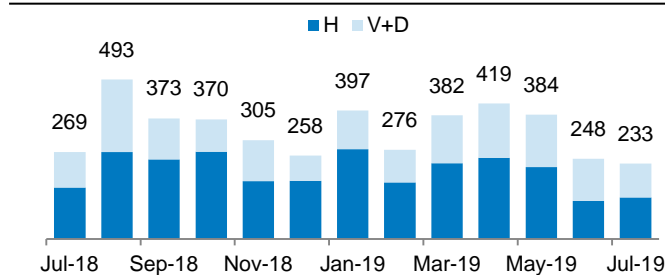
## Appalachia Snapshot

Item	Value	Wkly Change	Last Week
Rig Count	72	█ --	72
Permitting Activity	17	↓ (25)	42

### RIG COUNT

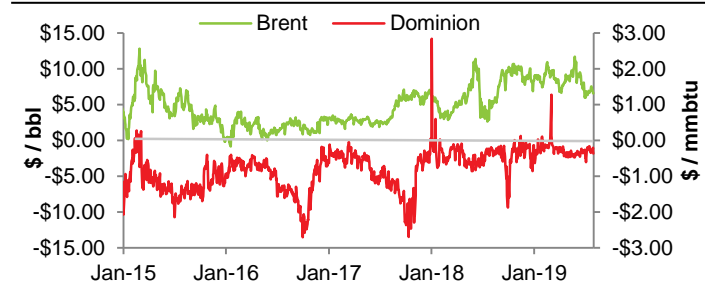


### PERMITTING ACTIVITY BY MONTH

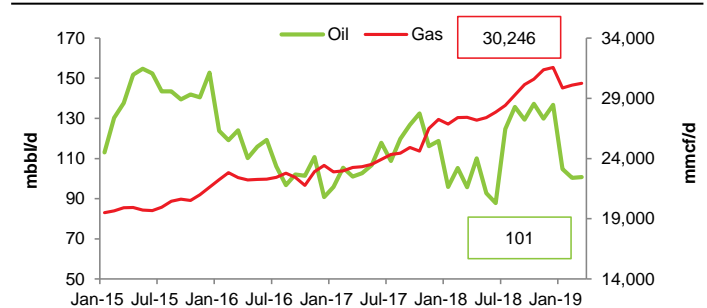


Item	Value	Wkly Change	Last Week
Oil Differential	\$6.55	↓ (\$1.00)	\$7.55
Gas Differential	(\$0.37)	↓ (\$0.07)	(\$0.30)

### DIFFERENTIALS



### GROSS PRODUCTION

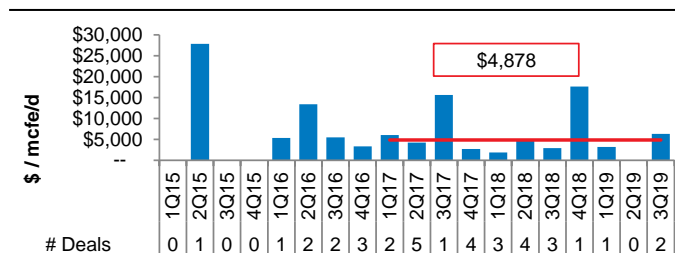


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

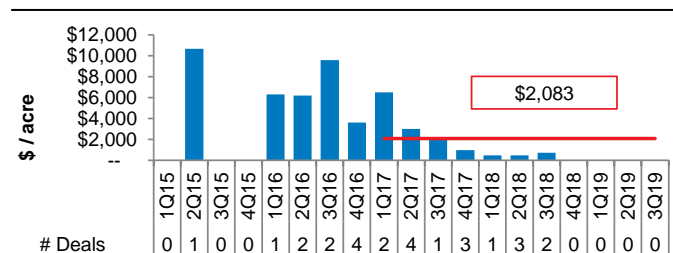
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/mcf)	Prod. Multiple (\$/mcf/d)	Net Acres (\$/acre) <sup>(2)</sup>
24-Jul-19	Diversified Gas & Oil	EdgeMarc Energy Holdings	12,730 net acres in Ohio Utica	\$50	\$0.32	\$769	\$3,928
19-Jul-19	Multiple	Range Resources Corp	Southwest Appalachia ORRIs	\$600	n.a.	\$15,790	nmf
30-Jun-19	Undisclosed Buyer	Range Resources Corp	20,000 non-producing net acres in PA	\$34	n.a.	n.a.	\$1,700
27-Mar-19	Diversified Gas & Oil	HG Energy II LLC	Huckleberry assets in Appalachia	\$400	n.a.	\$3,227	n.a.
15-Oct-18	Undisclosed Buyer	Range Resources Corp	Overriding royalty interests in Appalachia	\$300	n.a.	\$17,649	nmf
			<b>Mean</b>	<b>\$277</b>	<b>\$0.32</b>	<b>\$9,359</b>	<b>\$2,814</b>
			<b>Median</b>	<b>\$300</b>	<b>\$0.32</b>	<b>\$9,509</b>	<b>\$2,814</b>

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Purple = BMO provided both transaction advisory services and acquisition financing or related services

### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

1. Represents total enterprise value. Excludes transactions with deal value <\$20 million.
2. \$/acre multiple not adjusted for value associated with production.
3. Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.
4. Production valued at \$3,000/mcfepd in 2014, and \$2,000/mcfepd in 2015, 2016, 2017, 2018, and 2019.

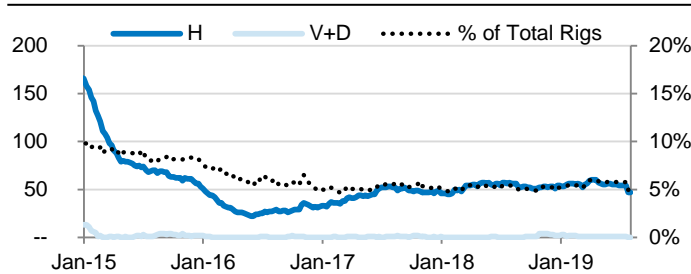
August 5, 2019

## Bakken Snapshot

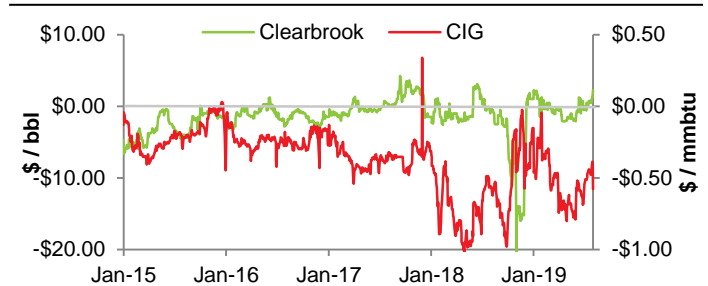
Item	Value	Wkly Change	Last Week
Rig Count	47	█ --	47
Permitting Activity	16	↓ (18)	34

Item	Value	Wkly Change	Last Week
Oil Differential	\$2.25	↑ \$1.75	\$0.50
Gas Differential	(\$0.58)	↓ (\$0.10)	(\$0.48)

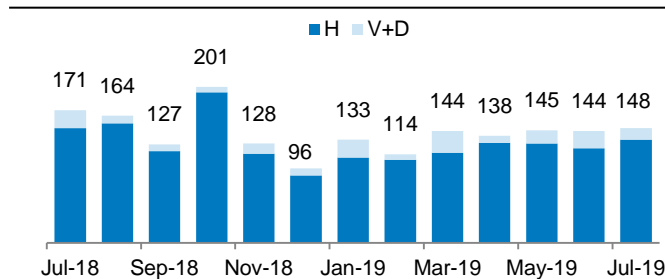
### RIG COUNT



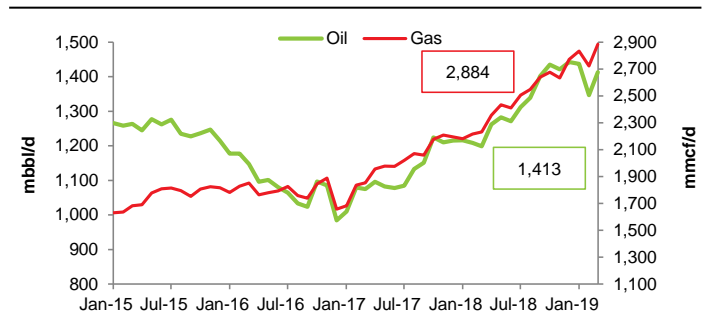
### DIFFERENTIALS



### PERMITTING ACTIVITY BY MONTH



### GROSS PRODUCTION

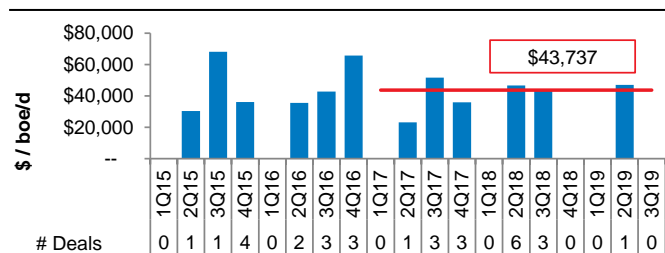


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

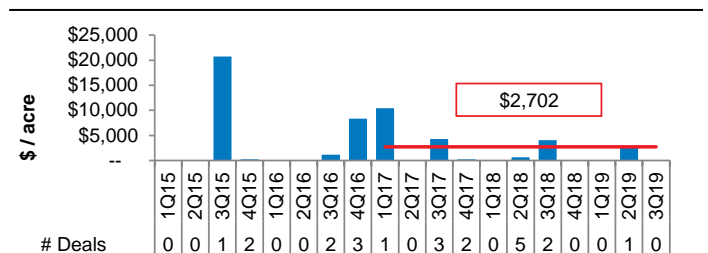
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) <sup>(2)</sup>
22-Apr-19	Northern Oil and Gas	Flywheel Energy LLC	18,000 net acres in Williston Basin	\$310	n.a.	\$47,014	\$17,238
31-Jul-18	Northern Oil and Gas	W Energy Partners	10,600 net acres in Williston Basin	\$288	n.a.	\$42,708	\$27,196
18-Jul-18	Northern Oil and Gas	Pivotal Petroleum Partners LP	Producing assets in Williston Basin	\$152	n.a.	\$37,032	n.a.
12-Jul-18	PetroShale Inc	Slawson Exploration Co	1,981 net acres in Williston Basin	\$55	\$6.04	\$100,000	\$27,764
06-Jul-18	Energy Resources 12 LP	Bruin E&P Partners LLC	2.8% non-operated WI in Bakken assets	\$83	n.a.	n.a.	n.a.
				<b>Mean</b>	<b>\$178</b>	<b>\$6.04</b>	<b>\$56,688</b>
				<b>Median</b>	<b>\$152</b>	<b>\$6.04</b>	<b>\$44,861</b>

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### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



11 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

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4. Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018 & 2019.

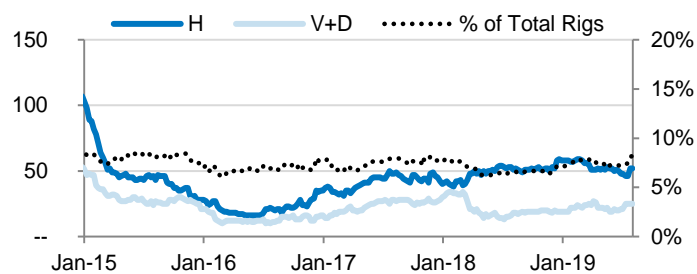
August 5, 2019

## Rockies (excl. Bakken) Snapshot

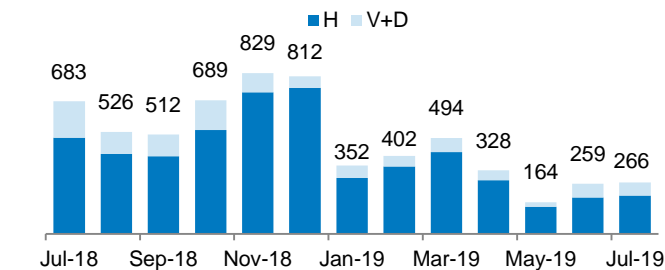
Item	Value	Wkly Change	Last Week
Rig Count	77	█ --	77
Permitting Activity	55	↓ (1)	56

Item	Value	Wkly Change	Last Week
Oil Differential	\$2.25	↑ \$1.75	\$0.50
Gas Differential	(\$0.58)	↓ (\$0.10)	(\$0.48)

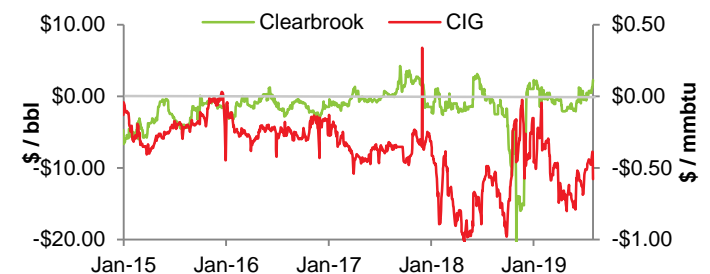
### RIG COUNT



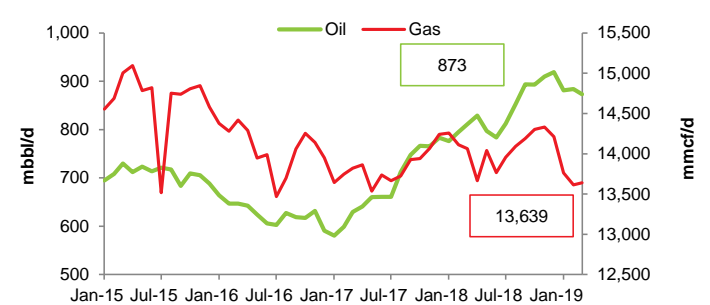
### PERMITTING ACTIVITY BY MONTH



### DIFFERENTIALS



### GROSS PRODUCTION

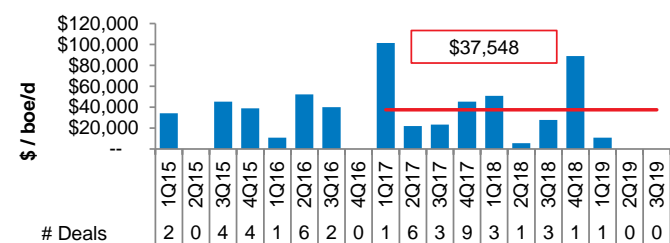


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

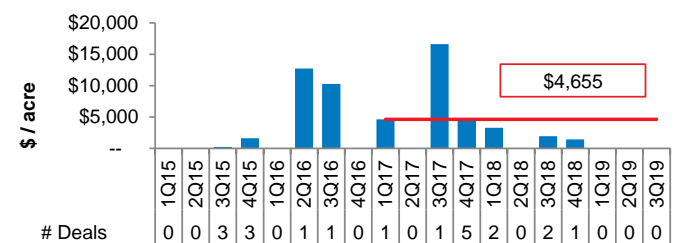
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) <sup>(2)</sup>
14-Feb-19	Undisclosed Buyer	Harvest Oil & Gas Corp	San Juan Basin assets	\$43	\$1.57	\$10,835	n.a.
31-Jan-19	Undisclosed Buyer	Extraction Oil & Gas	5,000 net acres in Powder River	\$22	n.a.	n.a.	\$4,480
01-Oct-18	DJR Energy LLC	Encana	182,000 net acres in San Juan Basin	\$480	n.a.	\$88,889	\$2,637
28-Aug-18	Vermilion Energy Inc	Massif Oil & Gas LLC	55,000 acres in Powder River Basin	\$150	n.a.	\$56,604	\$2,727
28-Aug-18	Rebellion Energy II LLC	Liberty Resources II LLC	19,000 net acres in Powder River Basin	\$100	n.a.	n.a.	\$5,263
			<b>Mean</b>	<b>\$159</b>	<b>\$1.57</b>	<b>\$52,109</b>	<b>\$3,777</b>
			<b>Median</b>	<b>\$100</b>	<b>\$1.57</b>	<b>\$56,604</b>	<b>\$3,604</b>

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Purple = BMO provided both transaction advisory services and acquisition financing or related services

### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.
- Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018 & 2019.

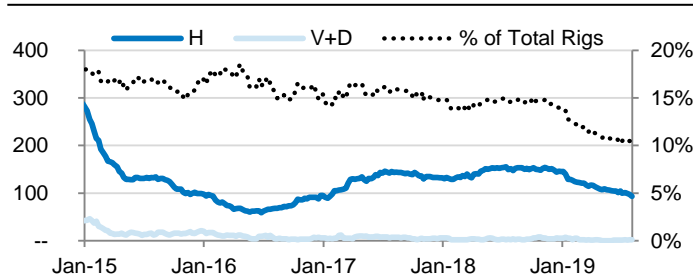
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## Mid-Continent Snapshot

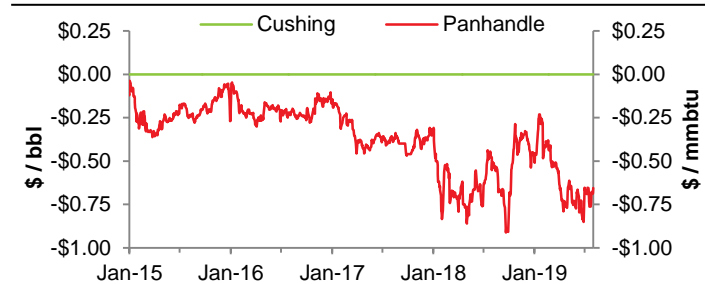
Item	Value	Wkly Change	Last Week
Rig Count	95	↓ (4)	99
Permitting Activity	48	↓ (33)	81

Item	Value	Wkly Change	Last Week
Oil Differential	--	█	--
Gas Differential	(\$0.66)	↑ \$0.05	(\$0.70)

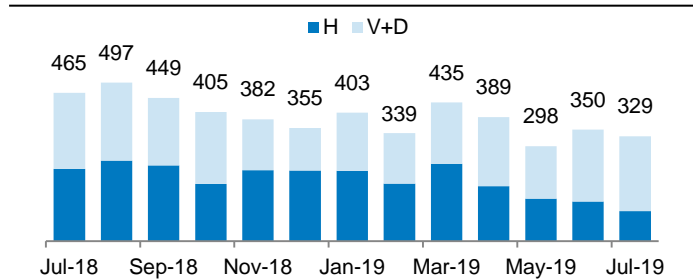
### RIG COUNT



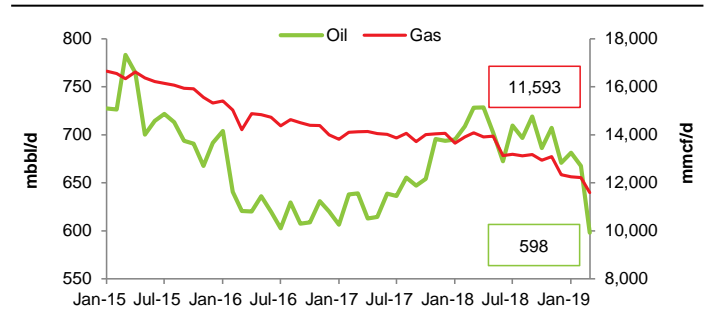
### DIFFERENTIALS



### PERMITTING ACTIVITY BY MONTH



### GROSS PRODUCTION

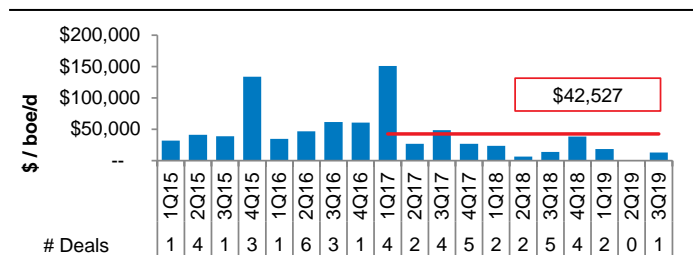


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

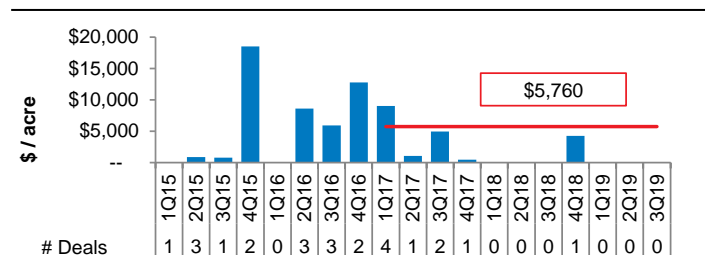
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(1)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) <sup>(2)</sup>
31-Jul-19	Continental Resources Inc	Undisclosed Seller	SCOOP assets	\$80	n.a.	n.a.	n.a.
08-Jul-19	NextEra Energy Inc	Encana	140,000 net acres in Arkoma Basin	\$165	n.a.	\$12,857	\$1,179
12-Jun-19	Glendale Energy; TPG	Undisclosed Seller	Non-op interests in STACK	\$55	n.a.	n.a.	n.a.
29-Apr-19	Undisclosed Buyer	Riviera Resources Inc	Non-op Hugoton Basin	\$31	n.a.	n.a.	n.a.
31-Mar-19	Red Wolf	Apache	56k net acres in SCOOP/STACK/Merge	\$245	n.a.	\$18,421	\$4,375
			<b>Mean</b>	<b>\$115</b>	<b>n.a.</b>	<b>\$15,639</b>	<b>\$2,777</b>
			<b>Median</b>	<b>\$80</b>	<b>n.a.</b>	<b>\$15,639</b>	<b>\$2,777</b>

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### TRANSACTION PRODUCTION MULTIPLES<sup>(3)</sup>



### TRANSACTION ADJUSTED NET ACRE MULTIPLES<sup>(3,4)</sup>



13 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS  
Note: Current quarter's data is through the week covered by this issue.  
1. Represents total enterprise value. Excludes transactions with deal value <\$20 million. 2. \$/acre multiple not adjusted for value associated with production.  
3. Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.  
4. Production valued at \$45,000/boepd in 2014, \$30,000/boepd in 2015, \$35,000/boepd in 2016 & 2017, and \$40,000/boepd in 2018 & 2019.

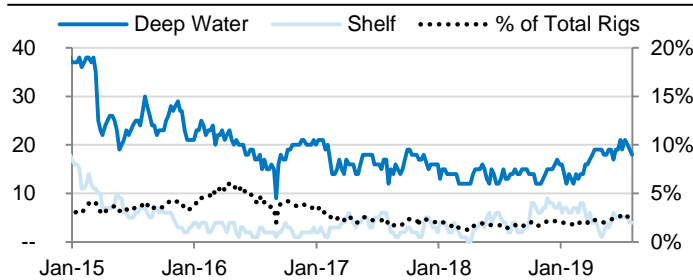
August 5, 2019

## Gulf of Mexico Snapshot

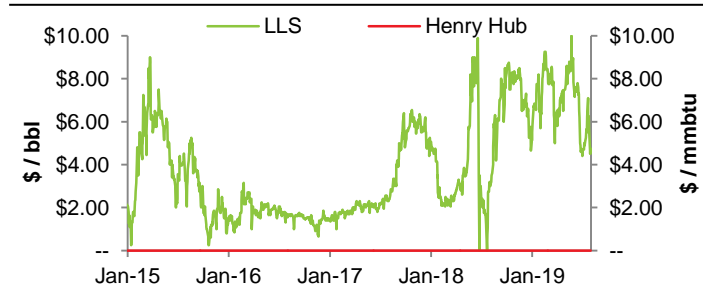
Item	Value	Wkly Change	Last Week
Rig Count	22	↓	(1) 23
Permitting Activity	18	↑	6 12

Item	Value	Wkly Change	Last Week
Oil Differential	\$4.75	↓	(\$1.50) \$6.25
Gas Differential	--	█	-- --

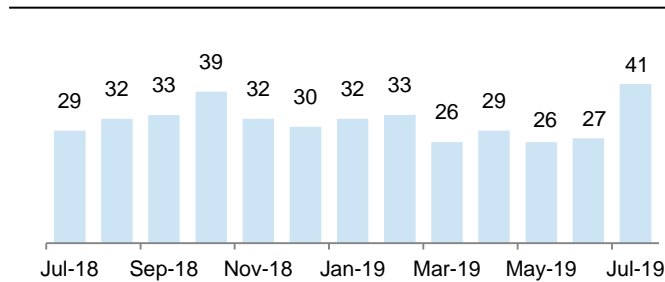
### RIG COUNT



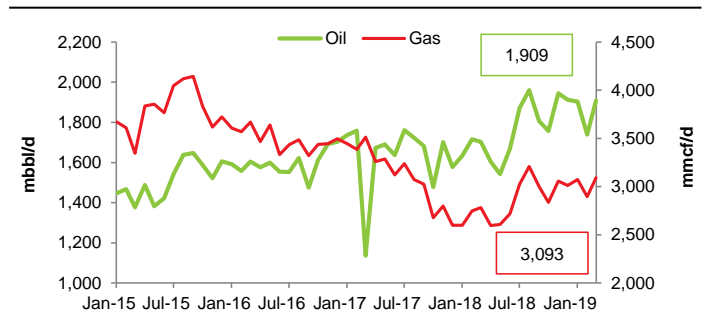
### DIFFERENTIALS



### PERMITTING ACTIVITY BY MONTH<sup>(1)</sup>



### GROSS PRODUCTION

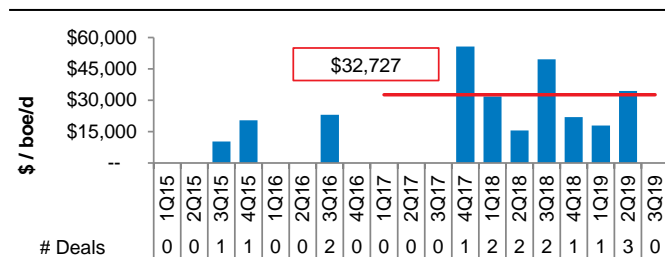


### TRANSACTION ACTIVITY (EXCLUDES CORPORATE DEALS)

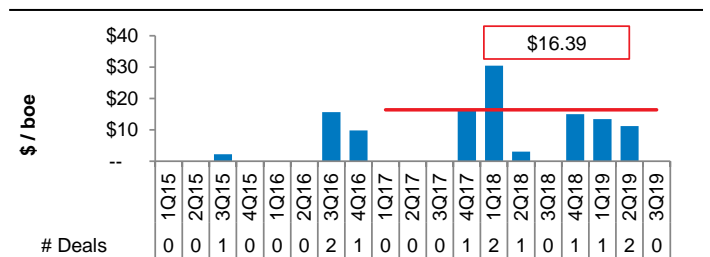
Ann'd Date	Buyer	Seller	Asset Description	Value <sup>(2)</sup> (\$mm)	Proved Multiple (\$/boe)	Prod. Multiple (\$/boe/d)	Net Acres (\$/acre) <sup>(3)</sup>	
27-Jun-19	W&T Offshore	ExxonMobil	Mobile Bay assets	\$200	\$2.70	\$10,101	n.a.	
13-May-19	Equinor	Shell	22.45% WI in Caesar-Tonga Field	\$965	n.a.	\$60,313	n.a.	
23-Apr-19	Murphy	LLOG Bluewater LLC	Mississippi Canyon & Green Canyon	\$1,375	\$20.83	\$36,184	n.a.	
16-Jan-19	Talos Energy Inc	Samson Energy Co LLC	Non-op Gulf of Mexico working interest	\$30	\$13.45	\$17,939	n.a.	
10-Oct-18	Murphy	Petrobras	Gulf of Mexico joint venture	\$900	\$15.00	\$21,951	n.a.	
				<b>Mean</b>	<b>\$694</b>	<b>\$13.00</b>	<b>\$29,298</b>	<b>n.a.</b>
				<b>Median</b>	<b>\$900</b>	<b>\$14.23</b>	<b>\$21,951</b>	<b>n.a.</b>

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### TRANSACTION PRODUCTION MULTIPLES<sup>(4)</sup>



### TRANSACTION PROVED RESERVE MULTIPLES<sup>(4)</sup>



14 Source: BMO Transaction Database, Baker Hughes, BMO Commodity Products Group, Bloomberg, Drilling Info, PLS

Note: Current quarter's data is through the week covered by this issue.

- Permits include directional and unidentified drilling permits.
- Represents total enterprise value. Excludes transactions with deal value <\$20 million.
- \$/acre multiple not adjusted for value associated with production.
- Red line denotes average since 01-Jan-17. Calculated as the weighted average of each quarter's transactions.

August 5, 2019

[Click event to open](#)

## Upcoming Industry Events

### August 2019

<a href="#">Aug 14</a>	<a href="#">IPAA Leaders in Industry Luncheon</a>
<a href="#">Aug 20</a>	<a href="#">IPAA Oil &amp; Gas Overview Course</a>
<a href="#">Aug 20</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Aug 21-22</a>	<a href="#">Summer NAPE</a>
<a href="#">Aug 23</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>

### September 2019

<a href="#">Sep 11</a>	<a href="#">IPAA Leaders in Industry Luncheon</a>
<a href="#">Sep 17</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Sep 20</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">Sep 24-26</a>	<a href="#">DUG Eagle Ford (San Antonio)</a>
<a href="#">Sep 30-Oct 2</a>	<a href="#">SPE Annual Technical Conference and Exhibition</a>

### October 2019

<a href="#">Oct 9</a>	<a href="#">IPAA Leaders in Industry Luncheon</a>
<a href="#">Oct 15</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Oct 18</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">Oct 22-23</a>	<a href="#">A&amp;D Strategies and Opportunities Conference</a>

### November 2019

<a href="#">Nov 4-6</a>	<a href="#">Executive Oil Conference &amp; Exhibition</a>
<a href="#">Nov 13</a>	<a href="#">IPAA Leaders in Industry Luncheon</a>
<a href="#">Nov 15</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">Nov 19</a>	<a href="#">IPAA Oil &amp; Gas for Newcomers</a>
<a href="#">Nov 19</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Nov 19-21</a>	<a href="#">DUG Midcontinent (Oklahoma City)</a>
<a href="#">Nov 20-21</a>	<a href="#">11th Annual North America Assembly &amp; Dinner</a>

### December 2019

<a href="#">Dec 5</a>	<a href="#">177th OPEC Meeting</a>
<a href="#">Dec 11</a>	<a href="#">IPAA Leaders in Industry Luncheon</a>
<a href="#">Dec 17</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Dec 20</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>

### January 2020

<a href="#">Jan 23</a>	<a href="#">IPAA Private Capital Conference</a>
<a href="#">Jan 17</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">Jan 21</a>	<a href="#">Houston Producers Forum Luncheon</a>

### February 2020

<a href="#">Feb 3-7</a>	<a href="#">NAPE Summit Week</a>
<a href="#">Feb 19</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Feb 18-19</a>	<a href="#">DUG Rockies (Denver)</a>

### March 2020

<a href="#">Mar 2</a>	<a href="#">Energy Capital Conference</a>
<a href="#">Mar 4</a>	<a href="#">Women in Energy Luncheon</a>
<a href="#">Mar 3-5</a>	<a href="#">IADC/SPE International Drilling Conference</a>
<a href="#">Mar 9-13</a>	<a href="#">Houston CERA Week</a>
<a href="#">Mar 17</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Mar 20</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>

### April 2020

<a href="#">Apr 6-8</a>	<a href="#">DUG Permian (Fort Worth)</a>
<a href="#">Apr 17</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">Apr 20-22</a>	<a href="#">OGIS New York</a>
<a href="#">Apr 21</a>	<a href="#">Houston Producers Forum Luncheon</a>

### May 2020

<a href="#">May 15</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>
<a href="#">May 19</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">May 19-20</a>	<a href="#">DUG Haynesville (Shreveport)</a>

### June 2020

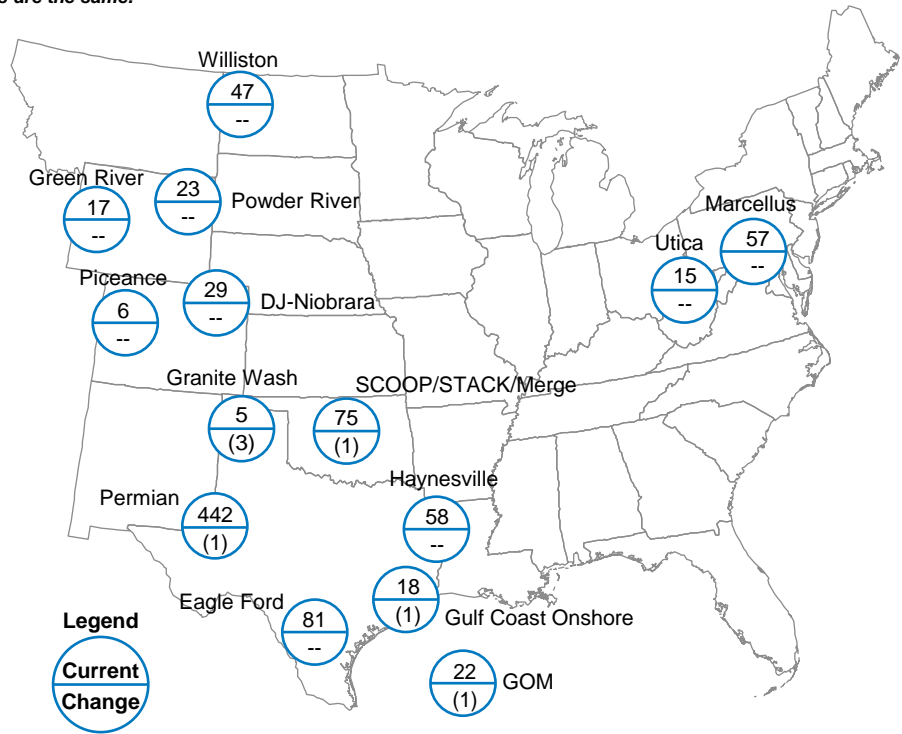
<a href="#">Jun 16</a>	<a href="#">Houston Producers Forum Luncheon</a>
<a href="#">Jun 16-18</a>	<a href="#">DUG East (Pittsburgh)</a>
<a href="#">Jun 19</a>	<a href="#">ADAM-Houston Monthly Luncheon</a>

August 5, 2019

## Rig Count Summary

BMO uses updated basin outlines, and the resulting rig counts, to more accurately represent current basin knowledge. The data below reflect these changes and is different than those shown by Baker Hughes. The totals are the same.

	This Week	Change	Last Week	Last Year
<b>Total Rigs</b>	<b>942</b>	<b>(4)</b>	<b>946</b>	<b>1,044</b>
Oil	770	(6)	776	859
Gas	171	2	169	183
Miscellaneous	1	--	1	2
Directional	67	--	67	64
Horizontal	819	(4)	823	912
Vertical	56	--	56	68
<b>Basin</b>				
Permian	442	(1)	443	480
SCOOP/STACK/Merge	75	(1)	76	106
Granite Wash	5	(3)	8	25
Eagle Ford	81	--	81	97
Haynesville	58	--	58	55
Marcellus	57	--	57	53
Utica	15	--	15	23
Williston	47	--	47	56
DJ-Niobrara	29	--	29	26
Green River	17	--	17	18
Powder River	23	--	23	16
Piceance	6	--	6	7
Gulf Coast Onshore	18	(1)	19	21
GOM	22	(1)	23	16
Alaska	12	3	9	5
Other	35	--	35	40
Mid-Con	15	--	15	20
Rockies	2	--	2	2
Western	18	--	18	16
Eastern	--	--	--	2



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