

CURRENT STATE OF E&P PRIVATE EQUITY AND DEBT MARKETS

IPAA – Leaders in Industry Luncheon January 2018



Stephens

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An Independent Financial Services Leader



Keith Behrens – Energy Investment Banking



Keith Behrens

Managing Director & Group Head

25+ years experience

- Mr. Behrens joined Stephens in May 2009 as a Managing Director
- Prior to joining Stephens, Mr. Behrens was a Co-Founder and a Managing Partner of Energy Capital Solutions
- Mr. Behrens has over 25 years of investment banking experience with major investment banking firms including Bear Sterns and Wasserstein Perella
- He has focused most of his career in covering primarily exploration and production companies as well as other energy-related companies
- Mr. Behrens has generated and led the execution of various MA&, public & private equity and senior & mezzanine debt transactions representing in excess of 165 transactions and \$35 billion in transaction volume
- In addition to his extensive transaction experience, Mr. Behrens:
 - Serves on the board of directors of Enservco Corp. (NYSE MKT: ENSV),
 - Recently served as Chairman of the IPAA's Private Capital Conference, and
 - Remains active in several energy industry organizations
- Mr. Behrens received his BBA and MBA from the University of Texas at Austin

Senior Energy Investment Banking Team

Brad Nelson Managing Director **Charles Lapeyre** Managing Director Paul Moorman Managing Director

A Dedicated & Growing Energy Practice

What Drives The Practice

- Stephens has been a principal investor in the energy space since 1952 and has a longstanding commitment to assisting and advising public and private energy companies throughout their life cycles
- Broad network of relationships with public and private energy companies as well as private energy capital sources
- Growing equity research practice dedicated to the
 Exploration and Production, Oilfield Service and Master Limited
 Partnership sectors

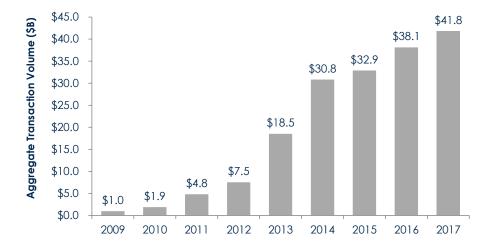


Aggregate Transaction Volume since 2009 \$315 MM

Average Transaction Size

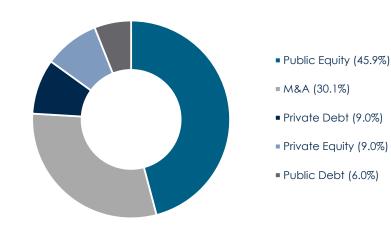
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Transactions Closed Since 2009



Aggregate Transaction Volume

Transaction Mix



Merchant Banking Perspective: Stephens Capital Partners

www.stephens.com/private-equity/

Overview

- Stephens Capital Partners LLC ("SCP") is the principal investing group for Warren Stephens and his family
 - SCP has been an active private investor for over 65 years and has made approximately 400 investments in private and public companies and currently holds investments in about 30 companies
- SCP is highly flexible with regard to industries and transaction structures and looks for long-term value creation rather than exit strategies
- SCP targets companies that are cash-flow producing businesses with above average margins and return on invested capital
- Equity sweet spot of \$10 \$50 million; but can go smaller or larger

Team

- Warren Stephens, Chairman, CEO
- Doug Martin, Senior Managing Director
- Richard Blank, Jr., Managing Director
- Rob Janes, Managing Director
- Kevin Eckert, Managing Director
- Kevin Wilcox, Managing Director
- Noel Strauss, Managing Director
- Jackson Farrow, Jr., General Counsel & Managing Director
- Kathy Bryant, CFO

Energy Investments



ENERGY TRANSFER

Stephens Natural Resources

- Since 1953
- Active Investment
- Natural gas and oil production company in multiple onshore and offshore basins

Energy Transfer

- Since 2002
- Active Investment
- Publically traded midstream and energy service company



Four Corners Petroleum

- Since 2016
- Active Investment
- Minority investment in oil company focused on the Central Basin Platform

TriGeo Energy

- Since 2016
- Active Investment
- Operator of oil wells in the East Permian on about 15,000 net acres

Basin Oil & Gas

- Since 2014
- Active Investment
- Fund formed to purchase non-operating oil
 and gas interests

Nadel & Gussman

- Since 2013
- Active Investment
- Working interest investment focused in the Fort Worth Basin



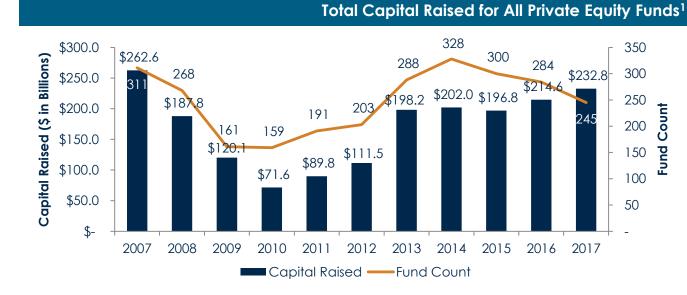
Executive Summary: Current State of E&P Private Capital Markets

Private Capital activity has picked up dramatically from 2015 / 2016 lows, with Lenders & Sponsors actively looking to deploy pent-up capital into new strategic opportunities

Current Private Capital Themes: Private Equity Capital

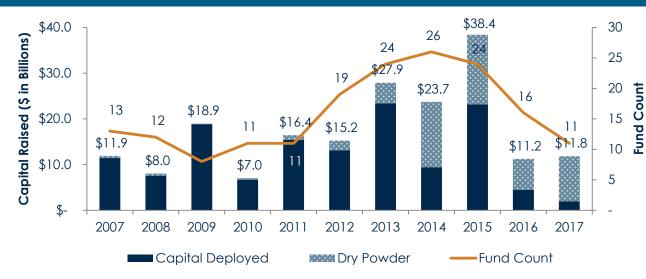
- Stephens has seen an uptick in sponsor activity given ample dry powder from newly raised funds + dry powder from older vintage funds
- Sponsors are currently looking to commit capital to new teams, but majority of capital will go to:
 - 1) Teams they have already had a successful exit with,
 - 2) Unique situations requiring growth capital for an acquisition or development of an existing asset
- Teams without a current asset and/or stellar track record are unlikely to receive a commitment from sponsors at that time
 - Sponsors likely will advise the team to call when a non-marketed opportunity in the core of a particular basin presents itself, in which they have negotiated exclusivity at below-market value, aka a "Unicorn"

Private Equity Capital Fundraising



6 Years (2007-2012)	
Total \$ Raised (\$ in Billions)	\$ 843.4
Total # of Funds	1,293
Average Fund Size (\$ in Millions)	\$ 652.3
5 Years (2013-2017)	
Total \$ Raised (\$ in Billions)	\$ 1,044.4
	1.445
Total # of Funds	1,440
	1 /

Total Capital Raised for Oil & Gas Private Equity Funds²



6 Years (2007-2012)	
Total \$ Raised (\$ in Billions)	\$ 77.4
% of Total	9.2%
Total # of Funds	74
% of Total	5.7%
Average Fund Size (\$ in Millions)	\$ 1,046.4
5 Years (2013-2017)	
Total \$ Raised (\$ in Billions)	\$ 113.0
% of Total	10.8%
Total # of Funds	101
% of Total	7.0%
Average Fund Size (\$ in Millions)	\$ 1,119.0

(1) Includes all Private Equity funds.

(2) Includes all Energy Private Equity funds focused on investments in the Oil & Gas sector. Source: Pitchbook Data, Inc. as of 1/2/2018.

Energy Group Private Capital Coverage

Private Equity & Debt Relationships

- The Stephens Energy Team has developed deep relationships with financial sponsors established through years of executing multiple transactions
 - Regular dialogue with 60+ sponsors on the equity side and 30+ sponsors on the debt side
 - Executed 24 private capital raises totaling in excess of \$3.9 billion since 2009
- Long history of principal transaction advisory through private placements
- Stephens Energy Group has established itself as a proprietary source of deal flow for private equity sponsors
 - "Stephens" deals receive attention
 - Pulse on the market allows Stephens to provide real time market feedback
 - Sponsors seek out Stephens for opportunities

Select Private Equity Transactions



Select Private Debt Transactions



2017 Closed U.S. E&P Private Equity Deals

Deal Date	Company Name	Deal Type	Deal Size (\$MM)	Investor	Sellers
12/22/17	Panther Energy Company	PE Growth/Expansion	\$ 375.0 Kayne	e Anderson Capital Advisors	***
12/22/17	Marksmen Energy	PIPE	0.5		
12/22/17	Advantagewon Oil	PIPE	1.1		
12/13/17	Freedom Oil and Gas	PIPE	17.2		
12/7/17	Linn Energy	Buyout/LBO	285.0 Kayne	e Anderson Capital Advisors, Valorem Energy	LINN Energy
12/5/17	FourPoint Energy	PE Growth/Expansion	525.0 GSO (Capital Partners, Quantum Energy Partners	
12/1/17	Wayfinder Resources	PE Growth/Expansion	Lime I	Rock Partners	
11/30/17	Energy Corporation of America	Buyout/LBO	ArcLic	ght Capital Partners, Greylock Energy	Energy Corporation of America
	Opportunity in Pine Prairie Field, LA	Buyout/LBO		I Reef Capital, HPS Investment Partners, Krewe Energy, Sage Road Capital	
	BNK Petroleum	PIPE		ngton Global	
	Outrider Energy	PIPE	2.5 Q Inve	restments	
	Krewe Energy	Buyout/LBO	Coral	I Reef Capital, HPS Investment Partners, Krewe Energy, Sage Road Capital	
	Continental Resources	Buyout/LBO		erra Energy, White Deer Energy	Continental Resources
	Samson Resources	Buyout/LBO		ntum Energy Partners, Rockcliff Energy	Samson Resources
	Fortem Resources	PIPE	5.3		
	Chevron U.S.A.	Buyout/LBO		e Anderson Capital Advisors, Sabinal Energy	Chevron
	Halcon Resources	Buyout/LBO		ght Capital Partners, Bruin E&P Partners	Halcon Resources
	Sierra Resources	PE Growth/Expansion		Capital Partners, Post Oak Energy Capital	
	Whiting Petroleum	Buyout/LBO		ock Oil & Gas, Warburg Pincus	Whiting Petroleum
	Stonegate Production Co.	Buyout/LBO	Breye		Stonegate Production
	Destiny Oil Partners	PE Growth/Expansion	,	Oak Energy Capital	
	Carrizo Oil and Gas	PIPE		Capital Partners	
	ConocoPhillips	Buyout/LBO		& Company, Hilcorp Energy (Greg Lalicker), The Carlyle Group	ConocoPhillips
	Opportunity in Timbalier Bay Field, LA	Buyout/LBO		I Reef Capital, HPS Investment Partners, Krewe Energy, Sage Road Capital	
	Silverback Exploration II	PE Growth/Expansion		ap Investments	
	Chevron	Buyout/LBO		ium Holdco, Sole Source Capital, York Capital Management	Chevron
	EQT Production Co.	PIPE			
		PIPE		rican Century Investments, Aristotle Capital Management, Bank of Nova Scotia, Highbridge C	
6/29/17	Lonestar Resources	PIPE		asny Asset Management, ClariVest Asset Management, Corvex Management, DekaBank Deut mbers Energy Capital	
				nbers Energy Capital	
	Diversified Gas & Oil	PIPE	32.6		
6/13/17		Buyout/LBO		rta Investment Management, Alinda Capital Partners, GIC Private, Howard Energy Partners	WPX Energy
	Newark	Buyout/LBO		u City Energy, White Knight Resources	CCMP Capital Advisors, Newark E&P, Quantum Energy Partners
	EOG Resources	PIPE		Carlyle Group	
	Valorem Energy	PE Growth/Expansion	,	e Anderson Capital Advisors	
	Delaware Basin Asset	Buyout/LBO		nolm Energy Holdings, Warburg Pincus	
	WildHorse Resource Development	PIPE		Carlyle Group	
	Earthstone Energy	Buyout/LBO		Energy III, EnCap Investments	
	Sable Permian Resources	PE Growth/Expansion		x Energy Holdings, OnyxPoint Global Management, The Energy & Minerals Group	
	Blue Ridge Mountain Resources	Buyout/LBO		lo Global Management, Resource Energy Partners	Blue Ridge Mountain Resources
	Mongoose Energy	PE Growth/Expansion		ap Investments	
	LongPoint Minerals	PE Growth/Expansion		ada Pension Plan Investment Board	
	Chisholm Oil & Gas	PE Growth/Expansion		lo Global Management, FS Investment	
	Opportunity in Kingfisher County, OK	Buyout/LBO		lo Global Management, Chisholm Oil & Gas	
	White Star Petroleum II	Buyout/LBO		Capital Management, First Reserve, GSO Capital Partners, The Energy & Minerals Group, Trians	glTalara Capital Management
	SM Energy	Buyout/LBO		ap Investments, Kohlberg Kravis Roberts, Riverstone Holdings, Venado Oil & Gas	SM Energy
3/13/17	Luxe Energy	PE Growth/Expansion		Energy Capital Management	
3/9/17	Halcon Resources	Buyout/LBO	500.0 Hawk	kwood Energy, Ontario Teachers' Pension Plan, Warburg Pincus	Halcon Resources
3/9/17	Canyon Creek Energy	PE Growth/Expansion	Vortus	us Investments	
3/7/17	Ameredev	PE Growth/Expansion	400.0 EnCa	ap Investments	
3/3/17	Gastar Exploration	PIPE	425.0 Ares M	Management	

2017 Closed U.S. E&P Private Equity Deals (Cont'd)

Deal Date	Company Name	Deal Type	Deal Size (\$MM)	Investor	Sellers
3/2/17	Fortuna Resources	PE Growth/Expansion		Och-Ziff Capital Management Group	***
3/2/17	Anadarko Petroleum	Buyout/LBO	2,300.0	Sanchez Energy, The Blackstone Group	Anadarko Petroleum
3/1/17	Lilis Energy	PIPE	20.0		
3/1/17	Anadarko Petroleum	Buyout/LBO	1,150.0	The Blackstone Group	Anadarko Petroleum
2/27/17	Halcon Resources	PIPE	400.0		
2/24/17	Krewe Energy	Buyout/LBO		HPS Investment Partners	Sage Road Capital, Shoreline Energy
2/22/17	Resolute Energy	Buyout/LBO		Quantum Energy Partners, Wishbone Energy Partners	Resolute Energy
2/21/17	Moriah Henry Partners	PE Growth/Expansion	200.0	Henry Petroleum, Moriah Partners, Post Oak Energy Capital	***
2/15/17	Penn Virginia	PIPE		Wexford Capital	
2/15/17	Covey Park Energy	PE Growth/Expansion		Denham Capital Management, Kohlberg Kravis Roberts, Magnetar Capital, Triangle Peak Partners	***
2/15/17	Chesapeake Energy	Buyout/LBO	465.0	Covey Park Energy, Denham Capital Management, Kohlberg Kravis Roberts, Magnetar Capital, Tria	ar Chesapeake Energy
2/8/17	California Resources	PIPE		Adams Asset Advisors, Blockhouse Capital Management, Bourgeon Capital Management, Coastla	r Occidental Petroleum
1/26/17	Swift Energy	PIPE	40.0		***
1/25/17	Staghorn Petroleum	Buyout/LBO	625.0	Apollo Global Management, Zenergy	Staghorn Petroleum
1/17/17	SLANT Energy	PE Growth/Expansion	30.0	Pearl Energy Investments	***
1/12/17	EnVen Energy Ventures	PE Growth/Expansion	118.4	Clark Enterprises, CNF Investments	***
1/9/17	Royal Holly Energy	PE Growth/Expansion	150.0	EnCap Investments	
1/2/17	Avad Energy Partners	PE Growth/Expansion	77.5	NGP Energy Capital Management, Pearl Energy Investments	
1/1/17	Ventana Exploration and Production	PE Growth/Expansion		Equity Group Investments	
1/1/17	Tri-C Resources	PE Growth/Expansion		Post Oak Energy Capital	***
1/1/17	Olifant Energy	PE Growth/Expansion		EnCap Investments	
1/1/17	Caerus Oil and Gas	PE Growth/Expansion		Old Ironsides Energy	
	72 E&P Private Equity Deals		\$ 19,419.8		

Reversionary Structures Have Been Stable Over Past Several Years

- Typically structured as common equity -- Management agrees, up-front, to fund/contribute some percentage of the total equity commitment
- After the Investor achieves a certain return (IRR) and (ROI) on its capital, Management will receive incremental ownership through a promote at each hurdle level
- Management shall fund its share of the commitment, pro rata, as Investor contributes capital
- "Waterfall" structures are generally incremental and not cumulative, which means that as value is created, Management will own more of the incremental dollars/value generated by the Company

		Summary Investment Assumptions					
New Common Equity Investment	\$95.0	Management Contributed Ownership %	5.0%		2020	2021	2022
Management Equity Contribution	5.0	Management Promoted Ownership%	0.0%	EBITDA	\$40.0	\$50.0	\$60.0
Initial Common Equity Value	\$100.0	New Investor Ownership %	95.0%	Multiple	6.0x	6.0x	6.0x
				EV	\$240.0	\$300.0	\$360.0
Investment Date	12/31/17			Net Debt	\$0.0	\$0.0	\$0.0
				Equity	\$240.0	\$300.0	\$360.0

Hur	dle Structure	1	Hur	dle Structure	2	Hur	dle Structure	3
IRR	ROI	% Promote	IRR	ROI	% Promote	IRR	ROI	% Promote
8.0%	1.0x	5.0%	10.0%	1.0x	10.0%	15.0%	1.5x	5.0%
20.0%	2.0x	10.0%	20.0%	2.0x	10.0%	20.0%	2.0x	10.0%
35.0%	3.5x	15.0%	30.0%	3.0x	10.0%	35.0%	3.5x	15.0%
	Exit Year			Exit Year			Exit Year	
2020	2021	2022	2020	2021	2022	2020	2021	2022
\$21.3	\$32.1	\$39.2	\$25.9	\$38.9	\$48.0	\$20.1	\$30.3	\$36.8
8.9%	10.7%	10.9%	10.8%	13.0%	13.3%	8.4%	10.1%	10.2%
\$218.7	\$267.9	\$320.8	\$214.1	\$261.1	\$312.0	\$219.9	\$269.7	\$323.2
91.1%	89.3%	89.1%	89.2%	87.0%	86.7%	91.6%	89.9%	89.8%

Dollar Return to Management Percentage Ownership at Exit

Dollar Return to Equity Investor Percentage Ownership at Exit

Traditional Private Equity – Waterfall Structure Comparisons

• For comparison purposes, the table below displays recent waterfall structures from term sheets Stephens has received representing management teams seeking traditional private equity capital in the last two years

III	ustrative Hurd	lle Structure :	#1
		Mgmt.	Cumulative Mamt.
IRR	MOIC	Promote	Promote
8.0%	1.00x	12.5%	12.5%
17.5%	2.25x	7.5%	20.0%
25.0%	3.25x	5.0%	25.0%

III	ustrative Hurc	lle Structure	#2
		Mgmt.	Cumulative Mgmt.
IRR	MOIC	Promote	Promote
8.0%	1.00x	15.0%	15.0%
	2.50x	10.0%	25.0%
30.0%	3.00x	5.0%	30.0%

III	ustrative Hurd	lle Structure :	#3
		Mgmt.	Cumulative Mgmt.
IRR	MOIC	Promote	Promote
15.0%	1.00x	15.0%	15.0%
20.0%		5.0%	20.0%
25.0%		5.0%	25.0%

III	ustrative Hurc	lle Structure #	#6
		Mgmt.	Cumulative Mamt.
IRR	MOIC	Promote	Promote
	1.30x	9.5%	9.5%
	2.00x	7.5%	17.0%
	3.00x	7.5%	24.5%

Market Average Hurdle Structure			
IRR	MOIC	Mgmt. Promote	Cumulativ Mgmt. Promote
9.9%	1.04x	14.6%	14.6%
	2.19x	8.8%	23.4%
	3.06x	6.9%	30.3%

		Mgmt.	Cumulativ Mgmt.
IRR	MOIC	Promote	Promote
8.0%	1.00x	20.0%	20.0%

Illustrative Hurdle Structure #8

MOIC

1.30x

2.00x

3.00x

IRR

10.0%

20.0%

30.0%

Mgmt.

Promote

10.0%

10.0%

10.0%

Cumulative

Mgmt.

Promote

10.0%

20.0%

30.0%

Illustrative Hurdle Structure #4							
		Mgmt.	Cumulative Mgmt.				
IRR	MOIC	Promote	Promote				
10.0%	1.00x	10.0%	10.0%				
32.0%		5.0%	15.0%				
32.0%		5.0%	15.0%				

III	Illustrative Hurdle Structure #7							
		Mgmt.	Cumulative Mgmt.					
IRR	MOIC	Promote	Promote					
10.0%	1.00x	20.0%	20.0%					

Executive Summary: Current State of E&P Private Capital Markets

Current Private Capital Themes: Private Debt Capital

- Non-bank lenders looking to finance acquisitions and refinance out traditional reserve-based loans, providing higher advance rates with less restrictive covenants at a higher cost of capital [L+ 600+]
- Lately, the unitranche structure (similar to 1st Lien / 2nd Lien structure) has seen high interest from operators seeking acquisitions or refinance out existing RBLs
- Lenders & borrowers agree these non-traditional debt products are viewed more as temporary capital that provide a vehicle for growth and time to shore up a balance sheet before returning to traditional RBLs

Unitranche Loan Overview

	Commentary	Unitranche Structure Overview				
	 Unitranche debt blends first and second lien debt financing into a single tranche structured as one term loan and priced at LIBOR plus a margin 					
Description & Overview	 The increasing popularity of the unitranche loan is a byproduct of three developments that have shaped the middle market recently: 1) Increased banking regulation 2) Volatile bond and second lien markets 3) Growth of giant private lending platforms 	Senior Debt 2.75x-3.50x L + 450-650 2 nd lien / Sub Debt	3.75x-6.50x L + 650-1000			
Covenant	 Unitranche loans are very appealing to financial sponsors as they provide quick certainty of financing and there is no flex language to haggle over Critical features when bidding against numerous buyers in a market with few LBO / acquisition 	1.00x-1.50x ~11%-14% Considerations				
Flexibility & Speed of Execution	 opportunities Unitranche loans are popular in complicated leverage situations, which in the past were appropriate for a two tranche structure: Senior + Subordinated Borrowers are generally willing to pay a pricing premium in exchange for additional leverage and covenant flexibility, including less restrictive dividend limitations and acquisition baskets 	reduces legal and transaction – Fewer creditor negotiations of is made between senior and ↑ Cost of capital stays constant ov amortizes and expensive junior de	stead of one for every tranche on fees), no intercreditor agreement over the life of the loan as no disting subordinated lenders ver time vs. increasing as senior of			
Recent Market	 Recently, the market has seen multiple unitranche loans in the \$350M-\$400M range, significantly higher than the historical average of \$100M-\$250M In addition to the increase in size, leverage has also expanded for unitranche credits up to ~6.5x from the historical ~5.0x ceiling 	 total debt outstanding Unitranche lenders are more so needs of the business and are willi Covenant types similar to trac restrictive (i.e. larger cushions) Interest rate and OID are typically and 50 - 75 bps, respectively, over the second secon	ng to put more capital to work litional senior debt, but much priced at a premium of 150 - 200			

(1) For illustrative purposes only. Not intended to reflect current market leverage or pricing. Source: Standard & Poor's LCD.

Recent E&P High Yield Offerings (B/CCC)

Median

		Issue R	atings							
Issue Date	Issuer	S&P	Moody's	Size	Issue Spread	Coupon	Current YTW	Maturity Date	Term	Security
11/14/17	SRC Energy Inc	B+	B3	\$ 550	393 bps	6.250%	5.950%	12/1/25	8 Years	Sr. Unsecured
10/5/17	Gulfport Energy Corp	B+	B2	450	409 bps	6.375%	6.413%	1/15/26	8 Years	Sr. Unsecured
8/8/17	WPX Energy Inc	B+	B3	150	339 bps	5.250%	5.606%	9/15/24	7 Years	Sr. Unsecured
6/29/17	Carrizo Oil & Gas Inc	B+	B3	250	606 bps	8.250%	6.658%	7/15/25	8 Years	Sr. Unsecured
5/19/17	Callon Petroleum Co	B+	B3	200	344 bps	6.125%	5.617%	10/1/24	7 Years	Sr. Unsecured
2/8/17	Parsley Energy LLC	B+	B2	450	297 bps	5.250%	5.269%	8/15/25	8 Years	Sr. Unsecured
12/15/16	Gulfport Energy Corp	B+	B2	600	382 bps	6.375%	6.374%	5/5/25	8 Years	Sr. Unsecured
12/12/16	RSP Permian Inc	B+	B3	425	376 bps	5.250%	5.081%	1/15/25	8 Years	Sr. Unsecured
12/6/16	Parsley Energy LLC	B+	B3	650	304 bps	5.375%	5.289%	1/15/25	8 Years	Sr. Unsecured
10/6/16	Gulfport Energy Corp	B+	B2	650	436 bps	6.000%	6.044%	10/15/24	8 Years	Sr. Unsecured
9/15/16	Callon Petroleum Co	B+	B3	400	453 bps	6.125%	5.617%	10/1/24	8 Years	Sr. Unsecured
9/7/16	SM Energy Co	B+	B3	500	521 bps	6.750%	6.472%	9/15/26	10 Years	Sr. Unsecured
9/15/17	WildHorse Resources LLC	В	Caal	150	511 bps	6.875%	6.526%	2/1/25	7 Years	Sr. Unsecured
4/28/17	Covey Park Energy LLC	В	B3	450	528 bps	7.500%	6.861%	5/15/25	8 Years	Sr. Unsecured
1/27/17	WildHorse Resources LLC	В	Caal	350	458 bps	6.875%	6.526%	2/1/25	8 Years	Sr. Unsecured
12/6/16	Matador Resources Company	В	B3	175	376 bps	6.875%	5.205%	4/15/23	6 Years	Sr. Unsecured
5/9/17	Resolute Energy Corp	B-	Caal	125	630 bps	8.500%	6.125%	5/1/20	3 Years	Sr. Unsecured
3/29/17	Ascent Resources	B-	B3	1,500	807 bps	10.000%	7.598%	4/1/22	5 Years	Sr. Unsecured
2/9/17	Halcon Resources	B-	Caal	850	445 bps	6.750%	6.689%	2/15/25	8 Years	Sr. Unsecured
2/1/17	EP Energy Corp	B-	Caal	1,000	559 bps	8.000%	16.010%	2/15/25	8 Years	Sr. Secured
12/2/16	Alta Mesa Holdings	B-	Caal	500	557 bps	7.875%	5.758%	12/15/24	8 Years	Sr. Unsecured
9/12/16	PDC Energy Inc	B-	B2	400	457 bps	6.125%	5.260%	9/15/24	8 Years	Sr. Unsecured
8/16/16	Parsley Energy LLC	B-	B3	200	455 bps	6.250%	5.030%	6/1/24	8 Years	Sr. Unsecured
7/13/16	Extraction Oil & Gas LLC	B-	Caal	550	680 bps	7.875%	5.339%	7/15/21	5 Years	Sr. Unsecured
5/24/16	Parsley Energy LLC	B-	B3	200	449 bps	6.250%	5.030%	6/1/24	10 Years	Sr. Unsecured
		Summary Statistic	cs							
		Mean		\$ 469	471 bps	6.765%	6.334%	I		

		Issue Ro	atings							
Issue Date	Issuer	S&P	Moody's	Size	Issue Spread	Coupon	Current YTW	Maturity Date	Term	Security
10/13/17	Vine Oil & Gas	CCC+	Caa2	\$ 530	701 bps	8.750%	9.685%	4/15/23	5 Years	Sr. Unsecured
4/26/17	Bill Barrett Corp	CCC+	Caa2	275	650 bps	8.750%	7.709%	6/15/25	8 Years	Sr. Unsecured
9/15/16	Great Western Petroleum	CCC+	Caal	300	801 bps	9.000%	7.644%	9/30/21	5 Years	Sr. Unsecured
9/27/17	Chesapeake Energy Corp	CCC	Caa2	550	573 bps	8.000%	8.782%	6/15/27	9 Years	Sr. Unsecured
9/27/17	Chesapeake Energy Corp	CCC	Caa2	300	562 bps	8.000%	8.327%	1/15/25	7 Years	Sr. Unsecured
		Summary Statistic	:s							
		Mean		\$ 391	657 bps	8.500%	8.429%			
		Median		300	650 bps	8.750%	8.327%			

450

453 bps

6.375%

5.950%

Note: Yield to worst data as of Nov. 2017. Source: S&P Global, Advantage Data and company filings.

Recent E&P Second Lien Offerings

		Issue R	Issue Ratings				
Launch Date	lssuer	S&P	Moody's		Deal Size	Spread to LIBOR	LIBOR Floor
4/29/15	W&T Offshore Inc	B+	NR	\$	300	800 bps	100 bps
10/6/14	Magnum Hunter Resources Corp	В	B1		340	750 bps	100 bps
4/24/14	Jonah Energy LLC	В	B3		400	650 bps	100 bps
9/3/14	Templar Energy LLC	B-	B3		550	750 bps	100 bps
6/23/14	Templar Energy LLC	В-	B3		200	700 bps	100 bps
2/10/14	Fieldwood Energy LLC	В-	B2		425	713 bps	125 bps
	0,	Summary Statistics					

Sommary Stansnes		
Mean	\$ 369	727 bps
Median	370	731 bps

		Issue Ro	Issue Ratings				
Launch Date	lssuer	S&P	Moody's		Deal Size	Spread to LIBOR	LIBOR Floor
7/8/14	MD America Energy LLC	CCC+	Caa2	\$	525	850 bps	100 bps
6/24/14	American Energy Marcellus LLC	CCC	Caal		450	750 bps	100 bps
		Summary Statistics					
		Mean		\$	488	800 bps	
		Median			488	800 bps	

		lssue	Issue Ratings				
Launch Date	Issuer	S&P	Moody's		Deal Size	Spread to LIBOR	LIBOR Floor
9/21/17	Penn Virginia Corporation	NR	NR	\$	200	700 bps	0 bps
9/17/14	Callon Petroleum Co	NR	NR		275	750 bps	100 bps
6/25/14	BlackBrush	NR	NR		300	650 bps	100 bps
4/15/14	Chief Exploration & Development LLC	NR	NR		400	650 bps	100 bps
4/9/14	Bennu Oil & Gas	NR	NR		487	750 bps	125 bps
3/14/14	Caelus Energy LLC	NR	NR		300	750 bps	125 bps

S	ummary	Statistics

Mean	\$ 327	708 bps
Median	300	725 bps

Executive Summary: Current State of E&P Private Capital Markets (Cont'd)

Current Private Capital Themes: Representative Partnership Structures

- Representative partnerships ("DrillCo") allow private investor(s) to invest in development programs alongside operators, bringing in equity capital that falls outside the traditional private equity / private debt investment structures
- Partnerships can focus on operated/non-op. development programs on an operator's properties, and award working interests to the private investor in an agreed-upon group of locations
- DrillCo partnerships free up operators' existing capital, allow operators to keep development drilling program on schedule, and provide opportunity to focus on developing other projects
- These structures may include options allowing operators to potentially repurchase interests, and terms regarding the exit timing of the private investor through an agreed-upon reversion of some/all interests back to the Leaseholder

DrillCos – Overview

• What is a DrillCo?

- Industry participants that may face challenges investing in their own drilling inventory represent an opportunity for capital providers to own direct interest in new wells via DrillCos
- With similarities to traditional joint ventures and farm-outs, a DrillCo is a type of transaction wherein each party operator, private investor each hold a working interest in certain undeveloped acreage / groups of wells
- Operator contributes undeveloped acreage, while investor provides capital and is awarded working interests alongside the operator
- Focus area can range from specific location(s) to a large acreage position, targeting high-quality, geologically derisked areas with an existing inventory of drilling locations and proved reserves in place
- Transaction structures vary based on the needs of the parties involved, and typically allow operators to potentially regain working interests from an investor after achieving certain production goals and / or returns on investment

Factors Leading to Creation of DrillCos

- Declines in oil and natural gas prices pressured some operators' balance sheets and their ability to invest the necessary capital to maximize development of drilling programs
- Less availability of traditional private equity capital for acquiring acreage + start-up mgmt. G&A within a subdued / more volatile commodity environment
- Focus on minimizing / eliminating costs within a "lower-for-longer" commodity price outlook, results in DrillCos as a creative off-balance sheet development option for operators to share some of the development costs for certain tranches of undeveloped wells in exchange for a portion of the returns over a specified time period

DrillCos - Overview (Cont'd)

Investment Features of DrillCos

- Private investors may not be (and typically are not) required to provide up-front capital
- Potential exit options for investors include:
 - The ability to assess a potential exit at certain time intervals
 - Not achieving initial production targets
 - Inability to agree upon annual work program(s) / budget
- Reversion of interests from investors back to operator(s) based on performance of various groups of wells, IRR hurdles

• DrillCos vs. Debt Financing

- Higher cost of capital compared to debt (Unitranche)
- Typical IRR hurdles in the range of ~15% 25% are *higher* vs. unitranche debt ranging from around mid-single-digits to low / mid-teens, and with unitranche debt's *lower* cost of capital holding flat over time
- Similar to Mezzanine / Junior Debt, and Stretch Senior / Second Lien Bank and Institutional Debt, provides exposure (and similar risk) to Proved Undeveloped (PUD) Reserves as well as Proved Developed Producing (PDP) and Proved Developed Non-Producing (PDNP) Reserves
 - Higher exploration risk profile vs. Conforming Senior Bank Financing, which focuses primarily on Proved Developed (PDP + PDNP) Reserves

DrillCos vs. Traditional Equity Financing

- Lower cost of capital compared to traditional equity (preferred + common)
- Typical IRR hurdles in the range of ~15% 25% are *lower* vs. traditional equity in the ~30% 50%+ range
- Focused on 1P reserves / existing drilling inventory, whereas traditional equity has exposure to additional exploration and commercialization risk associated with potential development of 2P and 3P reserves

DrillCos – A Financing Alternative

• The reserve characteristics, taken together with the size and maturity of the issuer, drive the form of capital required for growth

