Memorial Resource Development Corp.
Form S-1/A
May 27, 2014
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As filed with the Securities and Exchange Commission on May 27, 2014

Registration No. 333-195062

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Amendment No. 2

to

FORM S-1

REGISTRATION STATEMENT

UNDER

THE SECURITIES ACT OF 1933

MEMORIAL RESOURCE DEVELOPMENT CORP.

(Exact name of registrant as specified in its charter)

Delaware	**1311**	**46-4710769**
(State or other jurisdiction of incorporation or organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

1301 McKinney Street, Suite 2100

Houston, Texas 77010

(713) 588-8300

(Address, including zip code, and telephone number, including area code, of registrants principal executive offices)

Kyle N. Roane

Vice President, General Counsel and Corporate Secretary

Memorial Resource Development Corp.

1301 McKinney Street, Suite 2100

Houston, Texas 77010

(713) 588-8300

(Name, address, including zip code, and telephone number, including area code, of agent for service)

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Approximate date of commencement of proposed sale of the securities to the public: As soon as practicable after this Registration Statement becomes effective.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box: ¨

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act.

Large Accelerated filer	¨	Accelerated filer	¨
Non-accelerated filer	x (Do not check if a smaller reporting company)	Smaller reporting company	¨

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)(2)	Amount of registration fee
Common Stock, $0.01 par value per share	$700,000,000	$90,160

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
(2) Includes shares issuable upon the underwriters exercise of its overallotment option.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until this Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 27, 2014

PRELIMINARY PROSPECTUS

Shares

Memorial Resource Development Corp.

Common Stock

$ per share

This is our initial public offering. We are selling shares of common stock, and MRD Holdco LLC is selling shares of our common stock. We expect the public offering price to be between $ and $ per share. MRD Holdco LLC has granted the underwriters a 30-day option to purchase up to an additional shares of common stock. We will not receive any proceeds from the sale of shares by MRD Holdco LLC, including any shares that it may sell pursuant to the underwriters option to purchase additional shares of common stock.

Currently, no public market exists for our common stock. We have applied to list our common stock on the NASDAQ Global Market under the symbol MRD. Following the completion of this offering, we will be a controlled company as defined under the NASDAQ listing rules because the group consisting of affiliates of Natural Gas Partners will beneficially own over 50% of our shares of outstanding common stock. See Principal and Selling Stockholders.

Investing in our common stock involves risks that are described in the Risk Factors section beginning on page 25 of this prospectus.

We are an emerging growth company as that term is used in the Jumpstart Our Business Startups Act of 2012, and as such, we have elected to take advantage of certain reduced public company reporting requirements for this prospectus and future filings. See Risk Factors and Summary Emerging Growth Company Status.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

	Per Share	Total
Initial Public Offering Price	$	$
Underwriting Discounts and Commissions	$	$
Proceeds, Before Expenses, to Us	$	$
Proceeds, Before Expenses, to MRD Holdco LLC	$	$

The underwriters expect to deliver the shares of common stock on or about , 2014.

Joint Book-Running Managers

Citigroup **Barclays**
BofA Merrill Lynch **BMO Capital Markets** **Goldman, Sachs & Co.**
Raymond James **RBC Capital Markets** **Wells Fargo Securities**

Co-Managers

Credit Suisse **Morgan Stanley** **Scotiabank / Howard Weil**
Simmons & Company International **Stephens Inc.** **Stifel**
UBS Investment Bank **Wunderlich Securities**

The date of this prospectus is , 2014.

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You should rely only on the information contained in this prospectus. Neither we, MRD Holdco LLC, nor the underwriters have authorized any person to provide you with any information or represent anything about us or this offering that is not contained in this prospectus. If given or made, any such other information or representation should not be relied upon as having been authorized by us. Neither we nor MRD Holdco LLC are making an offer in any jurisdiction where an offer or sale is not permitted. The information contained in this prospectus is current only as of its date.

Commonly Used Defined Terms

As used in this prospectus, unless we indicate otherwise:

- the Company, we, our, us and our company or like terms refer collectively to (i) Memorial Resource Development Corp. and its subsidiaries (other than MEMP and its subsidiaries) for periods after the restructuring transactions described below and (ii) our predecessor (as described below) other than MEMP and its subsidiaries for periods prior to the restructuring transactions;

- Memorial Production Partners, MEMP and the Partnership refer to Memorial Production Partners LP individually and collectively with its subsidiaries, as the context requires. Following the restructuring transactions described below, we will own the general partner of MEMP as well as 50% of MEMP s incentive distribution rights;

- MEMP GP refers to Memorial Production Partners GP LLC, the general partner of the Partnership, which we will own following completion of the restructuring transactions described below;

- MRD Holdco refers to MRD Holdco LLC, a holding company owned by the Funds that will own shares of our common stock following completion of the restructuring transactions described below and this offering, assuming that the underwriters do not exercise their option to purchase additional shares from MRD Holdco.

- MRD LLC refers to Memorial Resource Development LLC, which has historically owned our predecessor s business and will be merged into MRD Operating LLC, our subsidiary, after completion of the restructuring transactions described below;

- WildHorse Resources refers to WildHorse Resources, LLC, which owns our interest in the Terryville Complex and will be our 100% owned subsidiary following completion of the restructuring transactions described below;

- our predecessor refers collectively to MRD LLC and its consolidated subsidiaries, consisting of Classic Hydrocarbons Holdings, L.P., Classic Hydrocarbons GP Co., L.L.C., Black Diamond Minerals, LLC, Beta Operating Company, LLC, MEMP GP, BlueStone, MRD Operating LLC, WildHorse Resources and each of their respective subsidiaries, including MEMP and its subsidiaries;

- the Funds refers collectively to Natural Gas Partners VIII, L.P., Natural Gas Partners IX, L.P. and NGP IX Offshore Holdings, L.P., which collectively own MRD Holdco;

- restructuring transactions means the transactions described beginning on page 13 that will take place in connection with and after the closing of this offering and pursuant to which we will acquire assets of MRD LLC (not including its interests in BlueStone, MRD Royalty, MRD Midstream, Golden Energy Partners LLC or Classic Pipeline) that comprise substantially all of the assets of MRD LLC;

- BlueStone refers to BlueStone Natural Resources Holdings, LLC, which sold substantially all of its assets in July 2013 for approximately $117.9 million;

- NGP refers to Natural Gas Partners, a family of private equity investment funds organized to make direct equity investments in the energy industry, including the Funds;

MRD Royalty refers to MRD Royalty LLC, which owns certain immaterial leasehold interests and overriding royalty interests in Texas and Montana;

MRD Midstream refers to MRD Midstream LLC, which owns an indirect interest in certain immaterial midstream assets in North Louisiana; and

Classic Pipeline refers to Classic Pipeline & Gathering, LLC, which owns certain immaterial midstream assets in Texas.

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Industry and Market Data

The market data and certain other statistical information used throughout this prospectus are based on independent industry publications, government publications or other published independent sources. Some data is also based on our good faith estimates. Although we believe these third-party sources are reliable and that the information is accurate and complete, neither we nor MRD Holdco have independently verified the information.

Equivalency

This prospectus presents certain production and reserves-related information on an equivalency basis. When we refer to oil and natural gas in equivalents, we are doing so to compare quantities of oil with quantities of natural gas. In calculating equivalents, we use a generally recognized standard in which one Bbl of oil and/or NGLs is equivalent to six Mcf of natural gas. This calculation is based on an approximate energy equivalency and does not imply or reflect a value or price relationship.

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SUMMARY

This summary highlights information appearing elsewhere in this prospectus. You should read the entire prospectus carefully, including Risk Factors beginning on page 25 and the historical and pro forma financial statements and the related notes to those financial statements. Certain oil and gas industry terms, including the terms proved reserves, probable reserves and possible reserves, used in this prospectus are defined in the Glossary of Oil and Natural Gas Terms in Appendix A of this prospectus.

Because we control MEMP through our ownership of its general partner, we are required to consolidate MEMP for accounting and financial reporting purposes even though we only own a minority of its limited partner interests. Our financial statements include two reportable business segments: (i) the MRD Segment, which reflects all of our operations except for MEMP and its subsidiaries, and (ii) the MEMP Segment, which reflects the operations of MEMP and its subsidiaries. Except with respect to our consolidated and combined financial statements or as otherwise indicated, the description of our business, properties, strategies and other information in this summary does not include the business, properties or results of operations of BlueStone, MRD Royalty, MRD Midstream and Classic Pipeline (the assets of which are included in our predecessor but will not be conveyed to us in the restructuring transactions) or MEMP. Our proved reserves as of December 31, 2013 have been prepared by Netherland, Sewell & Associates, Inc., our independent reserve engineers (NSAI), and our probable and possible reserves as of December 31, 2013 have been prepared by our internal reserve engineers and audited by NSAI, all of which are reflected in our reserve reports (which we collectively refer to as our reserve report), summaries of which are included in Appendices B-1 and B-2 of this prospectus.

Information expressed on a pro forma basis in this summary gives effect to certain transactions as if they had occurred on March 31, 2014 for pro forma balance sheet purposes and on January 1, 2013 for pro forma statements of operations purposes. For a description of these transactions, please read Summary Historical Consolidated and Combined Pro Forma Financial Data and Our Structure and Restructuring Transactions. Where applicable, we have assumed an initial public offering price of per share, the midpoint of the price range set forth on the cover page of this prospectus.

Overview

We are an independent natural gas and oil company focused on the exploitation, development, and acquisition of natural gas, NGL and oil properties with a majority of our activity in the Terryville Complex of North Louisiana, where we are targeting overpressured, liquids-rich natural gas opportunities in multiple zones in the Cotton Valley formation. Our total leasehold position is 347,458 gross (205,818 net) acres, of which 60,041 gross (51,522 net) acres are in what we believe to be the core of the Terryville Complex. We are focused on creating shareholder value primarily through the development of our sizeable horizontal inventory. As of December 31, 2013, we had 1,582 gross (1,091 net) identified horizontal drilling locations, of which 1,431 gross (994 net) identified horizontal drilling locations are located in the Terryville Complex. These total net identified horizontal drilling locations represent an inventory of over 32 years based on our expected 2014 drilling program. We believe our inventory to be repeatable and capable of generating high returns based on the extensive production history in the area, the results of our horizontal wells drilled to date, and the consistent reservoir quality across multiple target formations.

As of December 31, 2013, we had estimated proved, probable and possible reserves of approximately 1,126 Bcfe, 800 Bcfe and 1,711 Bcfe, respectively. As of such date, we operated 98% of our proved reserves, 71% of which were natural gas. For the three months ended March 31, 2014, 52% of our pro forma MRD Segment revenues were attributable to natural gas production, 24% to NGLs and 24% to oil. For the three months ended March 31, 2014, we generated pro forma MRD Segment Adjusted EBITDA of $67 million and pro forma net income of $ million, and made pro forma capital expenditures of $83 million. For the year ended December 31, 2013, we generated pro forma MRD Segment Adjusted EBITDA of $159 million and pro forma

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net income of $ million, and made pro forma total capital expenditures of $203 million. Please see Summary Historical Consolidated and Combined Pro Forma Financial Data Adjusted EBITDA for an explanation of the basis for the pro forma presentation and our use of Adjusted EBITDA to measure the MRD Segment s profitability.

Our average net daily production for the three months ended March 31, 2014 was 168 MMcfe/d (approximately 70% natural gas, 21% NGLs and 9% oil) and our reserve life was 18 years. As of December 31, 2013, we produced from 95 horizontal wells and 800 vertical wells. The Terryville Complex represented 85% of our total net production for the three months ended March 31, 2014. Our estimated average net daily production for the period from April 1 through April 30, 2014 was 179 MMcfe/d, of which 73% was from natural gas. Our estimated average net daily production from our properties in the Terryville Complex for the same period was 141 MMcfe/d, or 79% of our total production. In the Terryville Complex, we have completed and brought online six additional horizontal wells since January 1, 2014, bringing our total number of producing horizontal wells to 27 in our primary formations. The 30 day production average rates of our four most recent wells averaged 25.1 MMcfe/d per well.

The following chart provides information regarding our production growth and the increasing proportion of our horizontal well production since the beginning of 2012.

Our Properties

Cotton Valley Overview

The Cotton Valley formation extends across East Texas, North Louisiana and Southern Arkansas. The formation has been under development since the 1930s and is characterized by thick, multi-zone natural gas and oil reservoirs with well-known geologic characteristics and long-lived, predictable production profiles. Over 21,000 vertical wells have been completed throughout the play. In 2005, operators started redeveloping the Cotton Valley using horizontal drilling and advanced hydraulic fracturing techniques. To date, operators have drilled over 600 horizontal Cotton Valley wells. Some large, analogous redevelopment projects in the Cotton

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Valley include the Nan-Su-Gail Field in Freestone County, East Texas, where over 40 horizontal wells have been drilled by operators such as Devon Energy Corporation and Marathon Oil Corporation, and the Carthage Complex in Panola County, East Texas, where operators such as ExxonMobil Corporation, BP America, Memorial Production Partners LP and Anadarko Petroleum Corporation have drilled over 153 horizontal wells.

Cotton Valley Terryville Complex Horizontal Redevelopment

We are currently engaged in the horizontal redevelopment of the Terryville Complex in Lincoln Parish, Louisiana utilizing horizontal drilling and completion techniques similar to those employed at the Nan-Su-Gail Field, Carthage Complex in East Texas and other major resource plays across the United States. We have assembled a largely contiguous acreage position in the Terryville Complex of approximately 60,041 gross (51,522 net) acres as of December 31, 2013. The majority of our current and planned development is focused in and around what we believe to be the core of the Terryville Complex.

We entered the Terryville Complex via an acquisition from Petrohawk Energy Corporation in April 2010, with the goal of redeveloping the field with horizontal drilling and modern completion techniques. Since that acquisition, we have completed multiple bolt-on acquisitions and in-fill leases to build our current position. We believe the Terryville Complex, which has been producing since 1954, is one of North America s most prolific natural gas fields, characterized by high recoveries relative to drilling and completion costs, high initial production rates with high liquids yields, long reserve life, multiple stacked producing zones, available infrastructure and a large number of service providers.

After initially drilling eight vertical pilot wells in the Terryville Complex, we commenced a horizontal drilling program in 2011 to further delineate and define our position. In 2013, we shifted our operational focus to full-scale horizontal redevelopment of the Terryville Complex, going from two rigs to four rigs by the end of that year. Additionally, in the fourth quarter of 2013, we moved to drilling on multi-well pads that allow us to more efficiently drill wells and control costs as we develop our stacked pay zones. We intend to dedicate approximately $264 million of our $312 million drilling and completion budget in 2014 to develop multiple zones within the Terryville Complex, where we expect to drill and complete 35 gross (30 net) wells. Our horizontal redevelopment program in the Terryville Complex will be focused on increasing our well performance and recoveries.

Within the Terryville Complex, as of December 31, 2013, we had 945 Bcfe, 688 Bcfe and 1,643 Bcfe of estimated proved, probable and possible reserves, respectively, and a drilling inventory consisting of 1,431 gross (994 net) identified horizontal drilling locations, including 91 gross (72 net) drilling locations to which we have attributed proved undeveloped reserves as of December 31, 2013. Since initiating our horizontal drilling program in 2011, we have drilled 27 gross (22.0 net) horizontal wells, growing our gross daily production in the Terryville Complex by 304% from 53.0 MMcfe/d for the three months ended March 31, 2010 to 214.0 MMcfe/d for the month ended April 30, 2014. For the three months ended March 31, 2014, 51% of our revenues from the Terryville Complex were attributable to natural gas, 25% to NGLs and 24% to oil. Within the Terryville Complex, on a proved reserves basis, we operate approximately 99% of our existing acreage and hold an average working interest of approximately 74% across our acreage. Our high operating control allows us to more efficiently and economically manage the redevelopment of this extensive resource.

We believe seismic data, as well as information gathered from the results of our existing 275 vertical and 27 horizontal wells throughout the field, support the existence of at least ten stacked pay zones across the Terryville Complex. Our redevelopment program currently targets four of the stacked pay zones in the Cotton Valley formation zones we term the Upper Red, Lower Red, Lower Deep Pink and Upper Deep Pink, all of which we are developing with horizontal wells through pad drilling. These four zones have an overall thickness ranging from 400 to 890 feet across our acreage position. We believe the overpressured nature of this section of the Cotton Valley formation is highly productive when accessed through horizontal drilling and fracture

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stimulation technologies. These qualities, when combined with the liquids-rich nature of the natural gas, high initial rates of production and competitive well costs, produce what we believe to be amongst the highest rate of return wells in the nation. Further, there are additional opportunities for redevelopment in the zones above the four main zones. NSAI has allocated over $1 billion PV-10 and 677 Bcfe to our possible reserve category for the redevelopment of these additional zones. Please see Reserves.

The table below details certain information on estimated ultimate recoveries and production for the 27 horizontal wells currently producing in the Terryville Complex. Our well results have shown consistency in initial production, decline rates and estimated ultimate recovery. The consistency of these results gives us confidence that the full-scale redevelopment of the Terryville Complex we began in 2013 will be successful as we move from four to five rigs in 2014. Please see Business Our Properties Cotton Valley Terryville Complex Horizontal Redevelopment for more detail on our properties in the Terryville Complex and the table on page 98 for more detail on the average EUR and cumulative production of our properties in the Terryville Complex.

		Producing Wells					Gross Wellhead Flow Rates After Processing (MMcfe/d)(3)(4)				
Well Name (1)	**Lateral Length (Feet)**	**EUR (Bcfe)(2)**	**EUR BCFe/ 1,000**	**First Production**	**Days Producing**	**Cumulative Production (Bcfe)**	**0-30**	**0-90**	**91-180**	**181-360**	**D&C ($MM)**
Upper Red Zone											
LD Barnett 23H-2	4,015	13.6	3.4	1/30/2012	842	4.6	14.5	12.0	7.7	5.6	6.7
Colquitt 20 17H-1	4,357	11.2	2.6	7/30/2012	660	3.9	17.5	12.6	7.2	5.1	7.7
Dowling 22 15H-1	5,376	16.8	3.1	9/22/2012	606	5.2	16.3	15.6	11.1	8.2	8.8
Nobles 13H-1	4,216	11.6	2.8	11/17/2012	550	4.3	21.5	16.7	9.9	6.5	7.8
Sidney McCullin 16 21H-1	4,604	16.9	3.7	1/19/2013	487	4.5	17.4	14.2	10.8	8.4	8.1
Wright 14 11 HC-1	5,250	18.0	3.4	5/27/2013	359	4.6	19.6	18.1	16.1	8.5	8.8
BF Fallin 22 15H-1	5,122	15.6	3.0	6/17/2013	338	3.2	14.8	13.7	11.8		7.5
Dowling 20 17H-1	4,327	8.9	2.1	7/22/2013	303	2.1	15.2	11.0	5.7		10.7
Gleason 31H-1	3,692	2.5	0.7	8/12/2013	282	0.5	3.5	2.7	1.8		9.4
Burnett 26H-1	2,405	4.2	1.7	9/22/2013	241	0.9	6.9	5.5	3.3		6.6
Drewett 17 8H-1	4,010	14.0	3.5	11/13/2013	189	2.9	22.1	18.7	12.3		7.7
Wright 13 12 HC-2	6,009	18.1	3.0	12/21/2013	151	2.7	22.7	19.5			8.0
LA Minerals 15 22H-2	5,814	N/A	N/A	1/21/2014	120	1.9	18.1	16.7			9.3
TL McCrary 14 11 HC-5	5,875	N/A	N/A	4/14/2014	37	0.9	25.3				7.8
Wright 13 24 HC-1	6,678	N/A	N/A	4/14/2014	37	0.8	23.2				8.9
Wright 13 24 HC-3	6,606	N/A	N/A	4/14/2014	37	1.0	28.1				7.6
Lower Red Zone											
TL McCrary 14H-1	4,544	12.8	2.8	5/1/2012	750	4.0	14.4	11.7	8.3	5.4	7.7
Nobles 13H-2	4,060	9.2	2.3	11/17/2012	550	3.1	16.0	11.9	8.4	5.2	7.8
LA Methodist Orphanage 14H-1	3,637	12.1	3.3	2/15/2013	460	3.6	13.9	13.0	9.7	6.3	9.1
Dowling 21 16H-1	4,590	9.4	2.0	3/18/2013	429	2.6	13.0	10.1	6.5	4.5	6.6
Drewett 17 8H-2	3,700	3.7	1.0	11/13/2013	189	0.9	8.7	6.2	3.2		6.8
Wright 13 12 HC-1	5,409	8.2	1.5	12/21/2013	151	1.5	14.7	11.3			9.1
LA Minerals 15 22H-1	5,926	N/A	N/A	1/21/2014	120	1.2	13.8	11.1			8.0
Wright 13 24 HC-4	6,518	N/A	N/A	4/14/2014	37	0.8	23.8				10.3
Lower Deep Pink Zone											
LA Methodist Orphanage 14H-2	3,550	12.2	3.4	2/15/2013	460	3.2	14.2	11.6	7.6	5.6	6.1
Wright 13 12 HC-3	5,706	6.3	1.1	12/21/2013	151	1.2	12.5	9.3			7.1
Wright 13 12 HC-4	5,010	5.0	1.0	12/21/2013	151	1.1	11.8	8.8			6.1
Averages											
All Wells	**4,852**	**11.0**	**2.5**		**322**	**2.5**	**16.4**	**12.3**	**8.3**	**6.3**	**8.0**
Upper Red	**4,897**	**12.6**	**2.7**		**327**	**2.8**	**17.9**	**13.6**	**8.9**	**7.0**	**8.2**
Lower Red	**4,798**	**9.2**	**2.2**		**336**	**2.2**	**14.8**	**10.8**	**7.2**	**5.4**	**8.2**
Lower Deep Pink	**4,755**	**7.8**	**1.8**		**254**	**1.8**	**12.8**	**9.9**	**7.6**	**5.6**	**6.4**

(1) The majority of the wells in this table are included within our proved developed producing reserve category in our reserve report as of December 31, 2013. LA Minerals 15 22H-1, LA Minerals 15 22H-2, TL McCrary 14 II HC-5, Wright 13 24 HC-1, Wright 13 24 HC-3 and Wright 13 24 HC-4 each started producing in 2014 so they have not been included in the year-end reserve report as proved developed producing.

(2) EUR represents the Estimated Ultimate Recovery or sum of total gross remaining proved reserves attributable to each location in our reserve report and cumulative sales from such location. EUR is shown on a combined basis for oil/condensates, gas and NGLs after the effects of processing.

(3) Production data is as of May 21, 2014 and shown gross on a combined basis after the effects of processing.

(4) Periodic flow rates start on day 4, with days 1 through 3 used to allow clean up associated with well completion. The 30-day flow rates therefore start on day 4 and continue 30 days to day 33 and the 90-day flow rates go from day 4 to day 93.

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Recent Drilling Updates

During the week of April 14, 2014, we completed four new wells in the Terryville Complex. The combined 30 day production average for the four wells was 100.4 MMcfe per day. Three of the wells were drilled on one pad in the eastern edge of our property, the farthest step out from our core position to date, and produced a combined 30 day production average of 75.1 MMcfe per day. These production numbers are after the effects of processing and do not include oil volumes associated with these wells.

East Texas

We own and operate approximately 54,337 gross (42,894 net) acres as of December 31, 2013 in Texas, where we are currently producing primarily from the Cotton Valley, Travis Peak and Bossier formations and targeting the Cotton Valley formation for future development. From January 1, 2011 through December 31, 2013, we have drilled and completed 28 gross (10.3 net) wells and are operating one rig in East Texas as of December 31, 2013. In 2014, we plan to invest $36 million to drill and complete 8 gross (6 net) wells in East Texas in the Joaquin Field of Panola and Shelby Counties. As of December 31, 2013, we had approximately 108 gross identified horizontal drilling locations in East Texas, including 54 gross (43 net) drilling locations to which we have attributed proved undeveloped reserves as of December 31, 2013. For the three months ended March 31, 2014, our average net daily production from our East Texas properties was 21 MMcfe/d, of which 74% was natural gas. Within our East Texas properties, on a proved reserves basis, we operate approximately 94% of our existing properties.

Rockies

We own approximately 162,375 gross (66,191 net) acres as of December 31, 2013 in our Rockies region and for the three months ended March 31, 2014 our average net daily production from this region was 4 MMcfe/d. In 2014, we plan to operate one rig and invest $12 million to drill 3 gross (3 net) vertical wells in the Tepee Field of the Piceance Basin targeting the Mancos and Williams Fork formations. As of December 31, 2013, we had approximately 174 gross identified vertical drilling locations in the Tepee Field in our Rockies properties.

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Reserves

Our estimates of proved reserves are prepared by NSAI, and our estimates of probable and possible reserves are prepared by our management and audited by NSAI. As of December 31, 2013, we had 1,126 Bcfe, 800 Bcfe and 1,711 Bcfe of estimated proved, probable and possible reserves, respectively. As of this date, our proved reserves were 71% gas and 29% NGLs and oil. Additionally, the PV-10 of our proved reserves was $1,469 million, the PV-10 for our probable reserves was $1,052 million and the PV-10 for our possible reserves was $2,386 million. The following table provides summary information regarding our estimated proved, probable and possible reserves data by area based on our reserve report as of December 31, 2013 and our average net daily production by area for the three months ended March 31, 2014:

	Proved Total (Bcfe)	% Gas	% Developed	Proved PV-10 (in millions)(1)	Probable Total (Bcfe)(2)	Probable PV-10 (in millions)(1)	Possible Total (Bcfe)(2)	Possible PV-10 (in millions)(1)	Average Net Daily Production (MMcfe/d)
Terryville Complex	945	71%	33%	$ 1,341	688	$ 1,032	1,643	$ 2,383	143
East Texas	175	75%	29%	110	109	18	66	3	21
Rockies	6	49%	100%	18	2	2	2	1	4
Total	1,126	71%	33%	$ 1,469	800	$ 1,052	1,711	$ 2,386	168

(1) In this prospectus, we have disclosed our PV-10 based on our reserve report. PV-10 is a non-GAAP financial measure and represents the period-end present value of estimated future cash inflows from our natural gas and crude oil reserves, less future development and production costs, discounted at 10% per annum to reflect timing of future cash flows and using SEC pricing assumptions in effect at the end of the period. SEC pricing for natural gas and oil of $3.67 per Mcf and $93.42 per Bbl was based on the unweighted average of the first-day-of-the-month prices for each of the twelve months preceding December 2013. PV-10 differs from standardized measure, the most directly comparable GAAP financial measure, because it does not include the effects of income taxes. Moreover, GAAP does not provide a measure of estimated future net cash flows for reserves other than proved reserves. Because PV-10 estimates of probable and possible reserves are more uncertain than PV-10 and standardized estimates of proved reserves, but have not been adjusted for risk due to that uncertainty, they may not be comparable with each other. Nonetheless, we believe that PV-10 estimates for reserve categories other than proved present useful information for investors about the future net cash flows of our reserves in the absence of a comparable GAAP measure such as standardized measure. Because of this, PV-10 can be used within the industry and by creditors and securities analysts to evaluate estimated net cash flows from proved reserves on a more comparable basis. In addition, investors should be cautioned that estimates of PV-10 for probable and possible reserves, as well as the underlying volumetric estimates, are inherently more uncertain of being recovered and realized than comparable measures for proved reserves, and that the uncertainty for possible reserves is even more significant. Our PV-10 estimates of proved reserves and our standardized measure are equivalent because, prior to the completion of this offering, we were not subject to entity level taxation. Accordingly, no provision for federal income taxes has been provided because taxable income has been passed through to our equity holders. However, had we not been a tax exempt entity as of December 31, 2013, our estimated discounted future income tax in respect of our proved, probable and possible reserves would have been approximately $401 million, $368 million and $835 million, respectively. After this offering, we will be treated as a taxable entity for federal income tax purposes and our future income taxes will be dependent upon our future taxable income. Neither PV-10 nor standardized measure represents an estimate of fair market value of our natural gas and oil properties. We and others in the industry use PV-10 as a measure to compare the relative size and value of estimated reserves held by companies without regard to the specific tax characteristics of such entities.

(2) Substantially all of our estimated probable and possible reserves are classified as undeveloped.

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Drilling Inventory and Capital Budget

We intend to develop our multi-year drilling inventory by utilizing our significant expertise in horizontal drilling and fracture stimulation to grow our production, reserves and cash flow. For 2014, we have budgeted a total of $312 million to drill and complete 46 gross (39 net) operated wells. We expect to fund our 2014 development primarily from cash flows from operations. The majority of our drilling locations and our 2014 development program are focused on the Terryville Complex, where we plan to invest $264 million on drilling and completing 33 gross (28 net) horizontal wells and 2 gross (2 net) vertical wells. Approximately $5.0 million of our Terryville Complex budget is allocated towards the drilling of vertical wells and routine facilities maintenance. In East Texas, we plan to invest $36 million on drilling and completing 8 gross (6 net) horizontal wells. In the Rockies, we plan to invest $12 million on drilling and completing 3 gross (3 net) vertical wells in the Tepee Field.

The following table provides information regarding our acreage and drilling locations by area as of December 31, 2013, except for projected 2014 information:

			Gross Horizontal Drilling Locations(1)(2)				Total				
	Net Acreage	WI%	Proved	Probable	Possible	Management	Gross	Net	Net Horizontal Drilling Inventory (years)	2014 Projected Operated Net Wells to be Drilled	2014 Projected Capital Budget ($MM)
Terryville Complex	96,733	74%	91	147	450	743	1,431	994	36	30	$ 264
East Texas	42,894	79%	54	39	15		108	92	15	6	36
Rockies	66,191	41%		23	20		43	4		3	12
Total	205,818	59%	145	209	485	743	1,582	1,091	32	39	$ 312

(1) The above table excludes 192 proved vertical drilling locations in our reserve report in the Terryville Complex and 174 identified vertical locations based on management estimates in the Rockies.

(2) Please see Business Our Operations Drilling Locations for more information regarding the process and criteria through which these drilling locations were identified. The drilling locations on which we actually drill will depend on the availability of capital, regulatory approval, commodity prices, costs, actual drilling results and other factors. Please see Risk Factors Risks Related to Our Business Our identified drilling locations, which are scheduled out over many years, are susceptible to uncertainties that could materially alter the occurrence or timing of their drilling. Proved, probable and possible locations are based on our reserve report. Management locations are based on management estimates of additional identified drilling locations.

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Our extensive inventory and horizontal drilling program in the Terryville Complex is currently focused on four zones within the Cotton Valley formation the Upper Red, Lower Red, Lower Deep Pink and Upper Deep Pink. The table below sets forth our drilling locations by zone as of December 31, 2013 along with the average results for the wells we have drilled within each zone. Please see Business Our Properties Cotton Valley Terryville Complex Horizontal Redevelopment for more detail on our properties in the Terryville Complex and the table on page 98 for the 30 day initial production rate and EUR condensate volumes.

Lower Cotton Valley Zone	Gross Horizontal Drilling Locations(1)					Average Historical Results(2)		
	Proved	Probable	Possible	Management	Total	Producing Wells Drilled(1)	EUR (Bcfe)(3)	Drilling and Completion Costs ($MM)
Upper Red	47	42	40	313	442	16	12.6	$ 8.2
Lower Red	40	40	36	276	392	8	9.2	$ 8.2
Lower Deep Pink	4	28	47	79	158	3	7.8	$ 6.4
Upper Deep Pink		37	42	75	154			
Other Zones			285		285			
Total Terryville Complex	91	147	450	743	1,431	27	11.0	$ 8.0

(1) Please see Business Our Operations Drilling Locations for more information regarding the process and criteria through which these drilling locations were identified. The drilling locations on which we actually drill will depend on the availability of capital, regulatory approval, commodity prices, costs, actual drilling results and other factors. Please see Risk Factors Risks Related to Our Business Our identified drilling locations, which are scheduled out over many years, are susceptible to uncertainties that could materially alter the occurrence or timing of their drilling. Proved, probable and possible locations are based on our reserve report. Management locations are based on management estimates of additional identified drilling locations.

(2) Relates to the 21 horizontal wells in the Terryville Complex included in our reserve report as proved developed reserves as of December 31, 2013. Drilling and completion costs and producing wells drilled include six additional wells that have come online since year-end.

(3) EUR represents the Estimated Ultimate Recovery or the sum of total gross remaining proved reserves attributable to each location in our reserve report and cumulative sales from such location. EUR is shown at the wellhead on a combined basis for oil/condensates and wet gas.

Our Terryville horizontal development program in 2014 has an average working interest of 87% and our total horizontal development inventory has an average working interest of 69%.

For the Terryville Complex, our 2014 budget assumes an average cost of $8.6 million for gross horizontal wells ($7.5 million per net well) and is based on an average lateral length of 6,270 feet. As part of our long-term development plan, the lateral length of our planned wells is expected to increase and we expect wells within the Terryville Complex to cost on average $9.3 million for gross wells ($8.1 million per net well) drilled with a 7,500 foot lateral length.

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Business Strategies

Our primary objective is to build shareholder value through growth in reserves, production and cash flows by developing and expanding our significant portfolio of drilling locations. To achieve our objective, we intend to execute the following business strategies:

Grow production, reserves and cash flow through the development of our extensive drilling inventory. We believe our extensive inventory of low-risk drilling locations, combined with our operating expertise, will enable us to continue to deliver production, reserve and cash flow growth and create shareholder value. As of December 31, 2013, we had assembled an aggregate drilling inventory of 1,582 gross identified horizontal drilling locations, 90% of which are in the Terryville Complex, representing a drilling inventory of over 36 years based on our expected 2014 drilling program. We believe that the risk and uncertainty associated with our core acreage positions in the Terryville Complex has been largely reduced through our development activity, and because those positions are in areas with extensive drilling and production history. Since initiating our horizontal drilling program with one rig in 2011, we have invested over $349 million in the Terryville Complex through March 31, 2014. With four rigs running in the Terryville Complex as of December 31, 2013, we are one of the most active drillers in the Cotton Valley formation. We intend to dedicate approximately $264 million of our $312 million drilling and completion budget in 2014 to develop the overpressured liquids-rich Terryville Complex through multi-well pad drilling. We believe multiple vertically stacked producing horizons in the Terryville Complex can be developed using horizontal drilling techniques, thus enhancing the economics of this field.

Enhance returns through prudent capital allocation and continued improvements in operational and capital efficiencies. We continually monitor and adjust our drilling program with the objective of achieving the highest total returns on our portfolio of drilling opportunities. We believe we will achieve this objective by (i) minimizing the capital costs of drilling and completing horizontal wells through knowledge of the target formations, (ii) maximizing well production and recoveries by optimizing lateral length, the number of frac stages, perforation intervals and the type of fracture stimulation employed, (iii) targeting specific zones within our leasehold position to maximize our hydrocarbon mix based on the existing commodity price environment and (iv) minimizing operating costs through efficient well management.

Exploit additional development opportunities on current acreage. Our existing asset base provides numerous opportunities for our highly experienced technical team to create shareholder value by increasing our inventory beyond our currently identified drilling locations and ultimately by growing our estimated proved reserves. In the Terryville Complex, we are currently targeting multiple stacked horizons. We also believe our East Texas region has a significant inventory of low-risk, liquids-rich horizontal drilling locations. Finally, we continue to evaluate our leasehold positions in the Rockies and have preliminarily identified over 170 potential vertical locations.

Maintain a disciplined, growth oriented financial strategy. We intend to fund our growth primarily with internally generated cash flows while maintaining ample liquidity and access to the capital markets. Furthermore, we plan to hedge a significant portion of our expected production to reduce our exposure to downside commodity price fluctuations and enable us to protect our cash flows and maintain liquidity to fund our drilling program. Since approximately 76% of our acreage in the Terryville Complex was held by production as of December 31, 2013 and no significant drilling commitments are needed to hold our remaining acreage in the near term, we are able to allocate capital among projects in a manner that optimizes both costs and returns, resulting in a highly efficient drilling program.

Make opportunistic acquisitions that meet our strategic and financial objectives. We will seek to acquire oil and gas properties that we believe complement our existing properties in our core areas of operation. In

addition to our focus on the Terryville Complex, we are pursuing other properties that provide opportunities for the addition of reserves and production through a combination of exploitation, development, high-potential exploration and control of operations. We follow a technology driven strategy to establish large, contiguous leasehold positions in the core of prolific basins and opportunistically add to those positions through bolt-on acquisitions over time. We entered into the Terryville Complex through strategic acquisitions and grassroots leasing efforts, amassing a land position of 96,733 net acres, 51,522 net acres of which we believe to be in the core of the play. We will continue to identify and opportunistically acquire additional acreage and producing assets to complement our multi-year drilling inventory.

Competitive Strengths

We believe that the following strengths will allow us to successfully execute our business strategies.

Large, concentrated position in one of North America s leading plays. We own approximately 60,041 gross (51,522 net) acres in what we believe to be the core of the Terryville Complex in Lincoln Parish, which we believe to be one of North America s most prolific liquids-rich natural gas fields, characterized by consistent and predictable geology and multiple stacked pay formations confirmed by extensive vertical well control. Through December 31, 2013, our drilling program in the Terryville Complex has produced some of the top performing gas wells in the United States in the previous two years, with single horizontal well results having achieved EURs averaging 11.0 Bcfe per well. Through May 21, 2014, we have brought 27 wells on online with average 30-day initial production rates of 16.4 MMcfe/d and average drilling and completion costs of $8.0 million per well. Approximately 76% of our acreage in the Terryville Complex was held by production at December 31, 2013 and there are no significant lease expirations until 2017. Additionally, all of our acreage in this play can be held by running a one rig program over the next 18 months.

De-risked acreage position with multi-year inventory of liquids-rich drilling opportunities. As of December 31, 2013, we had a drilling inventory consisting of 1,582 gross identified horizontal drilling locations, of which approximately 145 are gross proved undeveloped locations. Based on our expected 2014 drilling program and net identified drilling locations, we have over 32 years of liquids-rich drilling inventory. The majority of our drilling activity has been and will continue to be focused in the Terryville Complex, where we produce liquids-rich natural gas from the overpressured Cotton Valley formation. We have used subsurface data from our vertical wells coupled with 3-D seismic data to identify and prioritize our inventory based on returns. This liquids-rich gas formation allows for NGL processing that, when coupled with the condensate produced, results in strong well economics. For the three months ended March 31, 2014, 52% of our pro forma MRD Segment revenues were attributable to natural gas, 24% to NGLs and 24% to oil.

Significant operational control with low cost operations. On a proved reserves basis, we operate 99% of our properties and have operational control of all of our drilling inventory in the Terryville Complex. We believe maintaining operational control will enable us to enhance returns by implementing more efficient and cost-effective operating practices, through the selection of economic drilling locations, opportunistic timing of development, continuous improvement of drilling, completion and stimulation techniques and development on multi-well pads. As a result of the contiguous nature of our leasehold in the Terryville Complex and its geologic continuity, we are able to drill consistently long laterals, averaging over 4,800 lateral feet, which helps us to reduce costs on a per-lateral foot basis and increase our returns. We expect the average lateral length of the 35 gross wells that we expect to drill in the Terryville Complex in 2014 to be 6,400 feet per well. Operating in mature basins in North Louisiana and East Texas allows us to take advantage of the available and extensive midstream infrastructure and accelerate our development plan without encountering significant constraints in either takeaway or processing capacity. Our operational control allows us to focus on operating efficiency, which has resulted in our MRD Segment lease operating costs declining 20% from $0.47 per Mcfe for the three months ended March 31, 2013 to $0.38 per Mcfe for the three months ended March 31, 2014.

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Proven and incentivized executive and technical team. We believe our management and technical teams are one of our principal competitive strengths due to our team s significant industry experience and long history of working together in the identification, execution and integration of acquisitions, cost efficient management of profitable, large scale drilling programs and a focus on rates of return. Additionally, our technical team has substantial expertise in advanced drilling and completion technologies and decades of expertise in operating in the North Louisiana and East Texas regions. The members of our management team collectively have an average of 22 years of experience in the oil and natural gas industry. John A. Weinzierl, our Chief Executive Officer, has 24 years of oil and natural gas industry experience as a petroleum engineer, a strong commercial and technical background and extensive experience acquiring and managing oil and natural gas properties. Our management team has a significant economic interest in us directly and through its equity interests in our controlling stockholder, MRD Holdco. We believe our management team is motivated to deliver high returns, create shareholder value and maintain safe and reliable operations.

Our relationship with MEMP. We own a 0.1% general partner interest in MEMP through our ownership of its general partner as well as 50% of MEMP s incentive distribution rights. MEMP s objective as a master limited partnership is to generate stable cash flows, allowing it to make quarterly distributions to its limited partners and, over time, to increase those quarterly distributions. As a result of its familiarity with our management team and our asset base and our track record of prior drop-down transactions, we believe that MEMP is a natural purchaser of properties from us that meet its acquisition criteria. We believe this mutually beneficial relationship enhances MEMP s ability to generate consistent returns on its oil and natural gas properties, provides us with a growing source of cash flow from our partnership interests in MEMP and allows us to monetize producing non-core properties. Since MEMP s initial public offering, we have consummated drop-down transactions with MEMP totaling approximately $376 million. In addition, we may have the opportunity to work jointly with MEMP to pursue certain acquisitions of oil and natural gas properties that may not otherwise be attractive acquisition candidates for either of us individually. While we believe that MEMP would be a preferred acquirer of our mature, non-core assets, we are under no obligation to offer to sell, and it is under no obligation to offer to buy, any of our properties.

Financial strength and flexibility. During 2013, we generated $159 million of pro forma MRD Segment Adjusted EBITDA and made pro forma total capital expenditures of $203 million. During the three months ended March 31, 2014, we generated pro forma MRD Segment Adjusted EBITDA of $67 million and pro forma net income of $ million, and made pro forma capital expenditures of $83 million. We intend to continue to fund our organic growth predominantly with internally generated cash flows while maintaining ample liquidity for opportunistic acquisitions. We will continue to maintain a disciplined approach to spending whereby we allocate capital in order to optimize returns and create shareholder value. We seek to protect these future cash flows and liquidity levels by maintaining a three-to-five year rolling hedge program. Pro forma as of March 31, 2014 for this offering and the restructuring transactions (including the redemption of the PIK notes for approximately $363 million 30 days after the closing of this offering), we expect our total liquidity, consisting of cash on hand and available borrowing capacity under our new revolving credit facility, to be in excess of $ million.

Recent Developments

In December 2013, MRD LLC issued $350,000,000 of its 10.00%/10.75% Senior PIK toggle notes due 2018, which we refer to as the PIK notes. MRD LLC used the net proceeds from that issuance to repay outstanding indebtedness, to fund a debt service reserve account for the payment of interest on the PIK notes, to pay a distribution to the Funds, and for general company purposes. In connection with the closing of this offering, we will assume the PIK notes and use a portion of the proceeds of this offering to redeem the PIK notes in their entirety, to pay any applicable premium in connection with such redemption and to pay accrued and unpaid interest, if any, to the date of redemption. MRD Holdco will receive the cash released upon the termination of the debt service reserve account in connection with the redemption of the PIK notes. See Restructuring Transactions.

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In April 2014, we sold approximately 15 Bcfe of proved reserves located in East Texas to MEMP for cash consideration of approximately $34.0 million, subject to customary post-closing adjustments.

In May 2014, we sold certain producing and non-producing properties (consisting of 43 gross (4 net) wells) in the Mississippian oil play of Northern Oklahoma to a third party for cash consideration of approximately $6.7 million, subject to customary post-closing adjustments.

In connection with the closing of this offering, we intend to enter into a new $2.0 billion revolving credit facility. Immediately prior to the closing of this offering, we will borrow approximately $ million from our new revolving credit facility to pay off and terminate in their entirety WildHorse Resources revolving credit facility and second lien term loan, which we refer to collectively as WildHorse Resources credit agreements. See Restructuring Transactions.

Acquisition History

We built out our leasehold positions in North Louisiana, East Texas and the Rocky Mountains primarily through the following acquisition activities:

In November 2007, we acquired interests in the Joaquin Field, which is the core of our East Texas acreage;

In December 2007, we acquired interests in the Tepee Field in the Piceance Basin in Colorado;

In April and May 2010, we acquired interests in the Terryville Complex and other North Louisiana fields, which are the core of our North Louisiana acreage;

In November 2010, we acquired interests in the Spider and E. Logansport Fields in North Louisiana;

In May 2012, we acquired interests in the Terryville Complex and Double A Field in North Louisiana and East Texas;

In April 2013, we acquired interests in the West Simsboro and Simsboro Fields of the Terryville Complex in North Louisiana;

In November 2013, we acquired the remaining equity interests in Classic Hydrocarbons Holdings, L.P., Classic Hydrocarbons GP Co., L.L.C. and Black Diamond Minerals, LLC, which hold oil and natural gas properties in East Texas, North Louisiana and the Rocky Mountains; and

In February 2014, we repurchased net profits interests in the Terryville Complex from an affiliate of NGP for $63.4 million after customary adjustments. These net profits interests were originally sold to the NGP affiliate upon the completion of certain acquisitions in 2010 by WildHorse Resources.

Our Principal Stockholder

Our principal stockholder is MRD Holdco, which is controlled by the Funds, which are three of the private equity funds managed by NGP. Upon completion of this initial public offering, MRD Holdco, the selling stockholder in this offering, will own approximately % of our common stock (or approximately % if the underwriters option to purchase additional shares from MRD Holdco is exercised in full). Pursuant to a voting agreement, MRD Holdco will also have the right to direct the vote of an additional approximately % of our common stock. The Funds also collectively indirectly own 50% of MEMP s incentive distribution rights, and at the completion of this offering MRD Holdco will own 5,360,912 subordinated units of MEMP, representing an 8.7% limited partner interest in MEMP. We are also a party to certain other agreements with MRD Holdco, the Funds and certain of their affiliates. For a description of the voting agreement and these other agreements, please read Certain Relationships and Related Party Transactions.

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Founded in 1988, NGP is a family of private equity investment funds, with cumulative committed capital of approximately $10.5 billion since inception, organized to make investments in the natural resources sector. NGP is part of the investment platform of NGP Energy Capital Management, a premier investment franchise in the natural resources industry, which together with its affiliates has managed approximately $13 billion in cumulative committed capital since inception.

Our Interest in Memorial Production Partners LP

Through our ownership of its general partner, we control MEMP. We also own 50% of its incentive distribution rights. MEMP is a publicly traded limited partnership engaged in the acquisition, exploitation, development and production of oil and natural gas properties in the United States, with assets consisting primarily of producing oil and natural gas properties that are located in Texas, Louisiana, Colorado, Wyoming, New Mexico and offshore southern California. Most of MEMP s properties are located in large, mature oil and natural gas reservoirs with well-known geologic characteristics and long-lived, predictable production profiles and modest capital requirements. Because we control MEMP, we are required to consolidate MEMP for accounting and financial reporting purposes, even though we and MEMP have independent capital structures.

During each of the year ended December 31, 2013 and three months ended March 31, 2014, less than $0.1 million of distributions were made in respect of the MEMP incentive distribution rights. Please see Business Relationship with Memorial Production Partners LP for further information on our interest in MEMP.

Risk Factors

Investing in our common stock involves risks that include the speculative nature of oil and natural gas exploration, competition, volatile commodity prices and other material factors. For a discussion of these risks and other considerations that could negatively affect us, including risks related to this offering and our common stock, please read Risk Factors beginning on page 25 of this prospectus and Cautionary Note Regarding Forward-Looking Statements.

Our Structure and Restructuring Transactions

We are a Delaware corporation formed by MRD LLC to own and acquire oil and natural gas properties. In connection with the closing of this offering, the following transactions, which we refer to as the restructuring transactions, will occur:

- The Funds will contribute all of their interests in MRD LLC to MRD Holdco;

- WildHorse Resources will sell its subsidiary, WildHorse Resources Management Company, LLC (which holds certain immaterial assets related to our WildHorse Resources operations) to an affiliate of the Funds for approximately $0.2 million in cash, and that subsidiary will enter into a services agreement with WildHorse Resources pursuant to which that subsidiary will provide transition services to WildHorse Resources;

Classic Hydrocarbons Holdings, L.P. and Classic Hydrocarbons GP Co., L.L.C. will distribute to MRD LLC the ownership interests in Classic Pipeline, which owns certain immaterial midstream assets in Texas, and Black Diamond Minerals, LLC will distribute to MRD LLC its ownership interests in Golden Energy Partners LLC, which sold all of its assets in May 2014;

MRD LLC will contribute to us substantially all of its assets, comprised of:

100% of the ownership interests in Classic Hydrocarbons Holdings, L.P., Classic Hydrocarbons GP Co., L.L.C., Black Diamond Minerals, LLC, Beta Operating Company, LLC, Memorial Resource Finance Corp. and MRD Operating LLC;

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99.9% of the membership interests in WildHorse Resources, the owner of our properties in the Terryville Complex; and

MEMP GP (including MEMP GP s ownership of 50% of MEMP s incentive distribution rights);

We will issue shares of our common stock to MRD LLC, which MRD LLC will immediately distribute to MRD Holdco;

We will assume the obligations of MRD LLC under the PIK notes, including the obligation to pay interest on the PIK notes if this offering closes before June 15, 2014 or to reimburse MRD LLC for the June 15, 2014 interest payment made on the PIK notes if this offering closes after June 15, 2014;

Certain former management members of WildHorse Resources will contribute to us their outstanding incentive units in WildHorse Resources, as well as the remaining 0.1% of the membership interests in WildHorse Resources, and we will issue shares of our common stock and pay cash consideration of $ to such former management members of WildHorse Resources;

We will enter into a registration rights agreement and a voting agreement with MRD Holdco and certain former management members of WildHorse Resources;

We will enter into our new $2.0 billion revolving credit facility and will use approximately $ million in borrowings under that facility to repay all amounts outstanding under WildHorse Resources credit agreements, to pay the cash consideration payable to the former management members of WildHorse Resources and, if applicable, to reimburse MRD LLC for the June 15, 2014 interest payment made on the PIK notes;

Our subsidiary MRD Operating LLC will enter into a merger agreement with MRD LLC pursuant to which (i) after the redemption of the PIK notes as described below, MRD LLC will merge into MRD Operating LLC, (ii) until the date of such merger, MRD LLC will perform under certain ancillary commercial contracts to which it is a party in support of its current operations for our benefit (such as office leases and drilling contracts), (iii) all amounts received under such contracts will be for our benefit and (iv) we will be responsible for all amounts owing under such contracts; and

We will give notice of redemption to the holders of the PIK notes, which will specify a redemption date of 30 days after the closing of this offering, and we will use a portion of the net proceeds from this offering to redeem all outstanding PIK notes, including paying any applicable premium and accrued and unpaid interest, if any, to the date of redemption. Until the redemption date, or any earlier discharge date as noted below, of the PIK notes, we will use the amount to be paid to the holders of these notes to temporarily reduce amounts outstanding under our new revolving credit facility.

From the closing date of this offering until the date upon which the PIK notes are redeemed and the PIK notes indenture is terminated, MRD LLC will remain a subsidiary of MRD Holdco. During that time, MRD LLC will distribute to MRD Holdco:

BlueStone, which sold substantially all of its assets in July 2013 for $117.9 million, MRD Royalty, which owns certain immaterial leasehold interests and overriding royalty interests in Texas and Montana, MRD Midstream, which owns an indirect interest in certain immaterial midstream assets in North Louisiana, Golden Energy Partners LLC and Classic Pipeline;

5,360,912 subordinated units of MEMP representing an approximate 8.7% limited partner interest in MEMP;

The right to the $50 million of cash to be released from the debt service reserve account in connection with the redemption of the PIK notes (or, if the closing of this offering occurs after June 15, 2014 the right to the amount remaining in such account plus the cash received from us in reimbursement of the interest paid on June 15, 2014 in respect of the PIK notes); and

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Approximately $6.7 million of cash received by MRD LLC in connection with the sale of Golden Energy Partners LLC s assets in May 2014.

The redemption date of the PIK notes will be approximately 30 days after the closing of this offering. We will have the option to pay the full redemption amount (including any applicable premium and accrued and unpaid interest to the redemption date) to the PIK notes trustee at any time before the redemption date. If we deposit that amount with the PIK notes trustee in advance of the redemption date together with irrevocable instructions to use such amount for the redemption on the redemption date, then our obligations under the PIK notes indenture will be discharged on the date of such deposit. We may choose to so deposit that amount with the PIK notes trustee in advance of the redemption date. After the PIK notes indenture is terminated or discharged, as the case may be, MRD LLC will merge into MRD Operating LLC. At that time, MRD LLC s sole assets will be the commercial contracts noted above, which relate to the businesses owned by us.

Please read Use of Proceeds and Restructuring Transactions for more information about the application of the net proceeds from this offering and the restructuring transactions. For more information regarding BlueStone, see Management s Discussion and Analysis of Financial Condition and Results of Operations Results of Operations MRD Segment. For more information about the services agreement with WildHorse Resources, see Certain Relationships and Related Party Transactions Services Agreement.

The following diagram shows our ownership structure after giving effect to the restructuring transactions and this offering, assuming no exercise of the underwriters option to purchase additional shares from MRD Holdco and does not give effect to shares of common stock reserved for future issuance under the Memorial Resource Development Corp. 2014 Long Term Incentive Plan (described in Management 2014 Long Term Incentive Plan). The diagram also gives effect to our intended grant of restricted shares of common stock to our independent directors and certain of our employees under such plan in connection with a successful completion of this offering. See Management Executive Compensation Compensation Following This Offering IPO Bonuses. For information regarding our ownership structure before giving effect to the restructuring transactions and this offering, see the diagram on page 154 in Restructuring Transactions.

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(1) If the underwriters exercise in full their option to purchase additional shares of common stock from MRD Holdco, the ownership interest of the public stockholders will increase to shares of common stock, representing an aggregate % ownership interest in us, and MRD Holdco will own shares of common stock, representing an aggregate % ownership interest in us.

(2) As of March 31, 2014.

(3) The Funds refer collectively to Natural Gas Partners VIII, L.P., Natural Gas Partners IX, L.P. and NGP IX Offshore Holdings, L.P., which collectively own all of the membership interests in MRD Holdco. Please read Principal and Selling Stockholders for information regarding beneficial ownership. The Funds collectively indirectly own 50% of the Partnership s incentive distribution rights.

(4) Subsidiaries of MRD Holdco following the restructuring transactions will include BlueStone Natural Resources Holdings, LLC (BlueStone), MRD Royalty LLC (MRD Royalty), MRD Midstream LLC (MRD Midstream), Golden Energy Partners LLC (Golden Energy) and Classic Pipeline & Gathering, LLC (Classic Pipeline). Also, please see the Principal and Selling Stockholders table on page 145 for the beneficial ownership of our shares by our executive officers and directors.

(5) Includes Classic Hydrocarbons Holdings, L.P. (Classic), Classic Hydrocarbons GP Co., L.L.C. (Classic GP), Black Diamond Minerals, LLC (Black Diamond), and Beta Operating Company, LLC (Beta Operating).

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Corporate Information

Our principal executive offices are located at 1301 McKinney St., Suite 2100, Houston, Texas 77010, and our phone number is (713) 588-8300. Our website address is www.memorialrd.com. We expect to make our periodic reports and other information filed with or furnished to the Securities and Exchange Commission, which we refer to as the SEC, available free of charge through our website as soon as reasonably practicable after those reports and other information are electronically filed with or furnished to the SEC. Information on our website or any other website is not incorporated by reference into, and does not constitute a part of, this prospectus.

Emerging Growth Company Status

We are an emerging growth company as defined in the Jumpstart Our Business Startups Act (the JOBS Act). For as long as we are an emerging growth company, unlike other public companies that are not emerging growth companies, we are not required to:

- provide an auditor s attestation report on management s assessment of the effectiveness of our system of internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act of 2002;
- provide more than two years of audited financial statements and related management s discussion and analysis of financial condition and results of operations;
- comply with any new requirements adopted by the Public Company Accounting Oversight Board, or the PCAOB, requiring mandatory audit firm rotation or a supplement to the auditor s report in which the auditor would be required to provide additional information about the audit and the financial statements of the issuer;
- provide certain disclosure regarding executive compensation required of larger public companies or hold shareholder advisory votes on executive compensation required by the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act); or
- obtain shareholder approval of any golden parachute payments not previously approved.

We will cease to be an emerging growth company upon the earliest of:

- the last day of the fiscal year in which we have $1.0 billion or more in annual revenues;
- the date on which we become a large accelerated filer (the fiscal year-end on which the total market value of our common equity securities held by non-affiliates is $700 million or more as of June 30);
- the date on which we issue more than $1.0 billion of non-convertible debt over a three-year period; or

the last day of the fiscal year following the fifth anniversary of our initial public offering.

In addition, Section 107 of the JOBS Act provides that an emerging growth company can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act of 1933, as amended, or the Securities Act, for complying with new or revised accounting standards, but we have irrevocably opted out of the extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates in which adoption of such standards is required for other public companies.

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The Offering

Common stock offered by us	shares.
Common stock offered by MRD Holdco	shares (or shares, if the underwriters exercise in full their option to purchase additional shares).
Common stock to be outstanding immediately after the offering(1)	shares.
Option to purchase additional shares	MRD Holdco has granted the underwriters a 30-day option to purchase up to an aggregate of additional shares of our common stock held by MRD Holdco to cover over-allotments.
Common stock voting rights	Each share of our common stock will entitle its holder to one vote.
Use of proceeds	We intend to use the estimated net proceeds of approximately $ million from this offering, based upon the assumed initial public offering price of $ per share (the midpoint of the price range set forth on the cover of this prospectus), after deducting underwriting discounts and commissions and fees and expenses associated with this offering and the restructuring transactions, to redeem the PIK notes in their entirety and to pay any applicable premium in connection with such redemption and accrued and unpaid interest, if any, to the date of redemption (which we expect will be 30 days after the closing of this offering); together with borrowings of approximately $ million under our new revolving credit facility, to make a cash payment to certain former management members of WildHorse Resources in connection with their contribution to us of their membership interests and incentive units in WildHorse Resources; to repay borrowings outstanding under WildHorse Resources credit agreements; if the closing of this offering occurs after June 15, 2014, to reimburse MRD LLC for interest paid on the PIK notes; and for general corporate purposes. Until the redemption date or any earlier discharge date of the PIK notes, we will use the amount to be paid to the holders of those notes to temporarily reduce amounts outstanding under our new revolving credit facility. See Use of Proceeds.
	We will not receive any of the proceeds from the sale of shares of our common stock by MRD Holdco, including pursuant to any exercise by the underwriters of their option to purchase additional shares of our common stock. MRD Holdco is deemed under federal securities laws to be an underwriter with respect to the common stock it may sell in connection with this offering.
Dividend policy	We currently intend to retain all future earnings, if any, for use in the operation of our business and to fund future growth. The decision whether to pay dividends in the future will be made by our board of directors (our Board) in light of conditions then existing, including

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	factors such as our financial condition, earnings, available cash, business opportunities, legal requirements, restrictions in our debt agreements and other contracts and other factors our Board deems relevant. See Dividend Policy.
Directed Share Program	The underwriters have reserved for sale at the initial public offering price up to % of the common stock being offered by this prospectus for sale to our employees, executive officers and directors who have expressed an interest in purchasing common stock in the offering. We do not know if these persons will choose to purchase all or any portion of these reserved shares, but any purchases they do make will reduce the number of shares available to the general public. Please read Underwriting (Conflicts of Interest) beginning on page 166.
Risk factors	You should carefully read and consider the information set forth under Risk Factors beginning on page 25 of this prospectus and all other information set forth in this prospectus before deciding to invest in our common stock.
Conflicts of Interest	Affiliates of Citigroup Global Markets Inc. and will be lenders under the Company s new revolving credit facility and will receive more than 5% of the net proceeds of this offering in connection with the temporary repayment of amounts under such credit facility. See Use of Proceeds. Accordingly, this offering will be made in compliance with the applicable provisions of Rule 5121 of the Financial Industry Regulatory Authority, Inc. This rule requires that a qualified independent underwriter meeting certain standards participate in the preparation of the registration statement and prospectus and exercise the usual standards of due diligence with respect thereto. Simmons & Company International has agreed to act as a qualified independent underwriter within the meaning of Rule 5121 in connection with this offering. See Underwriting (Conflicts of Interest).
Listing and trading symbol	We have applied to list our common stock on the NASDAQ Global Market (NASDAQ) under the trading symbol MRD.

(1) Includes restricted shares of our common stock to be issued to our independent directors and certain of our employees in connection with the successful completion of this offering pursuant to our Plan (as defined herein). See Management Executive Compensation Compensation Following This Offering IPO Bonuses.

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Summary Historical Consolidated and Combined Pro Forma Financial Data

MRD LLC and its consolidated subsidiaries, our accounting predecessor, controls MEMP through its ownership of MEMP GP, the general partner of MEMP. Because MRD LLC controls MEMP through its ownership of the general partner, MRD LLC is required to consolidate MEMP for accounting and financial reporting purposes even though MRD LLC owns a minority of its partner interests and MRD LLC and MEMP have independent capital structures. MRD LLC receives cash distributions from MEMP as a result of its partner interests and incentive distribution rights in MEMP, when declared and paid by MEMP. In connection with the closing of this offering, MRD LLC will contribute substantially all of its existing assets to us in exchange for shares of our common stock. Through our ownership of MEMP GP, we will continue to control MEMP and therefore will continue to consolidate the results of MEMP into our consolidated financial statements in future periods.

Our predecessor has two reportable business segments, both of which are engaged in the acquisition, exploitation, development and production of oil and natural gas properties:

MRD reflects all of MRD LLC s consolidating subsidiaries except for MEMP and its subsidiaries.