



UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

DIVISION OF
CORPORATION FINANCE

Mail Stop 4628

November 12, 2015

Via E-mail

Andrew J. Cozby
Chief Financial Officer
Memorial Resource Development Corp.
500 Dallas Street, Suite 1800
Houston, Texas 77002

**Re: Memorial Resource Development Corp.
Form 10-K for Fiscal Year Ended December 31, 2014
Filed March 18, 2015
Form 10-Q for Fiscal Quarter Ended September 30, 2015
Filed November 4, 2015
Supplemental Response dated October 7, 2015
File No. 1-36490**

Dear Mr. Cozby:

We have reviewed your October 7, 2015 response to our comment letter and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to these comments within ten business days by providing the requested information or advise us as soon as possible when you will respond. If you do not believe our comments apply to your facts and circumstances, please tell us why in your response.

After reviewing your response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our September 25, 2015 letter.

Form 10-K for Fiscal Year Ended December 31, 2014

Management's Discussion and Analysis of Financial Condition and Results of Operations, page 56

Outlook, page 58

1. To help us better understand the results of your analysis in response to prior comment 2, please provide us with a narrative explanation for the impact of using the September 30,

2015 NYMEX forward strip prices on the quantities of the year-end 2014 reported proved reserves.

As part of your explanation, clarify whether the September 30, 2015 NYMEX forward strip prices were incorporated by individual product such as crude oil, natural gas liquids, and natural gas inclusive of the adjustment for the differentials obtained from the year-end 2014 reserve report and exclusive of hedges. Also tell us if these prices were input in your cash flow analysis as individual monthly or average annual figures and provide us with a table summarizing the prices by product.

2. Please provide us with each of the exhibits described below using information for 1) the estimates prepared by Netherland, Sewell & Associates, Inc. in the year-end reserves report as of December 31, 2014 and 2) the estimates prepared by the Company's internal reserve engineers using the September 30, 2015 NYMEX forward strip pricing:
 - the total company level grand summaries presenting the reserve and income forecast schedules (e.g., the cash flow output tables from the economic software that presents a schedule of the annual gross and net reserves by product, the future gross revenue, the deductions for production, severance and/or ad valorem taxes, operating and development costs and the undiscounted future net revenue and the discounted future net revenue (present worth) discounted at 10%) by development and production status for 1) total proved, 2) total proved developed producing, 3) total proved developed non-producing and 4) total proved undeveloped;
 - a one-line listing of the individual wells sorted by development and production status (e.g., proved developed producing, proved developed non-producing, and proved undeveloped) and ranked by discounted future net revenue (present worth) discounted at 10%; and
 - the cash flow output tables of the individual wells that comprise the bottom 10% of discounted future net revenue (present worth) discounted at 10% sorted by development and production status (e.g., the bottom 10% of the proved developed producing wells, the bottom 10% of the proved developed non-producing wells, and the bottom 10% of the proved undeveloped wells).

You may furnish these materials in hard copy format or on digital media such as flash drive or compact disk. If you would like to have these supplemental materials returned to you, please comply with the provisions of Rule 418(b) of Regulation C, which provides for the return of supplemental information as long as certain express conditions are met.

If you wish to request confidential treatment of those materials which they are in our possession, please follow the procedures set forth in Rule 83 of the Freedom of Information Act.

Andrew J. Cozby
Memorial Resource Development Corp.
November 12, 2015
Page 3

Please direct these items to:

U.S. Securities and Exchange Commission
100 F Street NE
Washington, DC 20549-4628
Attn: John Hodgkin, Petroleum Engineer

Form 10-Q for Fiscal Quarter Ended September 30, 2015

Risk Factor, page 63

3. We note the addition of the risk factor described under this heading and your statement that “Using more recent prices in estimating our proved reserves, without giving effect to any acquisitions or development activities we have executed during 2015, would likely result in a reduction in proved reserve volumes due to economic limits, which would reduce the PV-10 and standardized measure of our proved reserves.” Please tell us how the use of “more recent prices” would have impacted your December 31, 2014 reserve report in the same manner used in the calculation in response to prior comment 2. Additionally, please provide us with a table summarizing these “more recent prices” by product.

You may contact Wei Lu, Staff Accountant, at (202) 551-3725 or Jennifer O’Brien, Staff Accountant, at (202) 551-3721 if you have questions regarding comments on the financial statements and related matters and John Hodgkin at (202) 551-3699 if you have questions regarding comments on the engineering related matters. Please contact me at (202) 551-3311 with any other questions.

Sincerely,

/s/ Ethan Horowitz

Ethan Horowitz
Branch Chief
Office of Natural Resources