



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

DIVISION OF  
CORPORATION FINANCE

Mail Stop 3561

December 11, 2017

Via E-mail

Mr. John T. Drexler  
Senior Vice President and Chief Financial Officer  
Arch Coal, Inc.  
One CityPlace Drive  
Ste. 300  
St. Louis, Missouri 63141

**Re: Arch Coal, Inc.  
Form 10-K for the Year Ended December 31, 2016  
Filed February 24, 2017  
Form 8-K Filed October 31, 2017  
File No. 1-13105**

Dear Mr. Drexler:

We have reviewed your filing 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.

Form 10-K for the Year Ended December 31, 2016

Item 1. Business

Our Mining Operations, page 14

1. We note your disclosure of mineral reserves for your Leer Mining Complex. Please forward to our engineer as supplemental information and not as part of your filing, your technical report or Weir International, Inc. review, or the information that establishes the legal, technical and economic feasibility of the materials designated as reserves, as required by paragraph (c) of Industry Guide 7. Please discuss your process for assessing the economic viability of your mineral reserves in your response.

Mr. John T. Drexler  
Arch Coal, Inc.  
December 11, 2017  
Page 2

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Operational Performance – Successor

Period from October 2 through December 31, 2016, page 57

Operational Performance – Predecessor, page 62

2. You present certain non-GAAP measures, such as coal sales per ton sold, cash cost per ton sold and cash margin per ton sold for each of your reportable segments. However, your reconciliations of the inputs used in determining these measures to the most comparable GAAP measures, such as reported segment coal sales revenues and reported segment cost of coal sales are only presented on a consolidated basis. Please revise to provide reconciliations of the inputs used to compute each of these non-GAAP measures to the most comparable GAAP measures on both a segmental and consolidated basis. Refer to Item 10(e) of Regulation S-K.

Form 8-K Filed October 31, 2017

Item 2.02 Results of Operations and Financial Condition

Company Outlook, page 6

3. Please include quantitative reconciliations of the differences between your forward-looking non-GAAP measures (e.g., average cash cost ranges for Metallurgical, Powder River Basin and Other Thermal) and the comparable GAAP measures. If the GAAP measure is not accessible on a forward-looking basis, disclose that fact and provide reconciling information that is available without an unreasonable effort. Furthermore, identify the specific information that is unavailable and disclose its probable significance. Refer to Item 10(e)(1)(i)(B) of Regulation S-K and Section II.B.2 of SEC Release No. 33-8176.

We remind you that the company and its management are responsible for the accuracy and adequacy of their disclosures, notwithstanding any review, comments, action or absence of action by the staff.

You may contact John Coleman at (202) 551-3610 if you have questions regarding engineering related matters. Please contact Linda Cvrkel at (202) 551-3813 or me at (202) 551-3769 with any other questions.

Sincerely,

/s/ Rufus Decker

Rufus Decker  
Accounting Branch Chief  
Office of Beverages, Apparel &  
Mining