



June 21, 2013

Ms. Tia L. Jenkins
Senior Assistant Chief Accountant
Office of Beverages, Apparel, and Mining
Division of Corporation Finance
Securities and Exchange Commission
100 F Street, N.E.
Washington, DC 20549

Re: Arch Coal, Inc.
Form 10-K for Fiscal Year Ended December 31, 2012
Filed March 1, 2013
Response Submitted May 23, 2013
File No. 001-13105

Dear Ms. Jenkins:

We are providing this letter in response to the comments of the staff of the Securities and Exchange Commission (the "Staff") contained in your letter dated June 7, 2013 regarding the Annual Report on Form 10-K filed by Arch Coal, Inc. ("Arch Coal") for Arch Coal's fiscal year ended December 31, 2012 (the "Form 10-K"). Set forth below are the Staff's comments and our responses.

Pursuant to Rule 12b-4 of the Securities Exchange Act of 1934, as amended, Arch Coal requests that, upon completion of this review, the Staff return to us all supplemental materials provided in connection with this review.

Form 10-K for Fiscal Year Ended December 31, 2012
Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, page 58
Critical Accounting Policies, page 74
Goodwill, page 75

COMMENT NO. 1:

We note your response to our prior comment 2(a) that you consistently relied upon discounted cash flow analysis over the life of the mineral reserves as the basis for your assignment of

goodwill and your impairment analysis. However, you used several financial metrics (net present value, life of mine EBITDA, EBITDA margin and internal rate of return) to determine the specific allocation (of goodwill) to the four reporting units. Please clarify which method(s) and basis were used in computing the fair value of your reporting units for impairment testing. For the Leer and Tygart 2 reporting units, please provide us the total fair value for the base case and the downside scenarios and the corresponding carrying value for each mine.

RESPONSE:

For purposes of our goodwill impairment testing, we compute the fair value of a reporting unit using the expected present value technique, representing a probability-weighted average of the expected cash flows to be generated by the reporting unit over the life of its proven and probable reserves. The probability distribution of the cash flows is represented by scenarios that we prepare in conjunction with our annual budgeting process: base, upside, and downside scenarios. The weighting assigned to these scenarios includes an assessment of the relationship of the characteristics of each scenario to marketplace participant assumptions.

We are providing the requested fair values and carrying values in Supplemental Schedule A, which we are providing to the Staff supplementally.

COMMENT NO. 2:

We note your responses to our prior comment 2(b) and (c). It appears the considerable changes to your assumptions on the projected quantity and quality of production to be sold into metallurgical markets, mining methods impacting total quantity of production and delays in development offset the negative impact of the lower near-term prices at Leer and Tygart 2. To the extent that you change methods and/or significant assumptions in regard to your impairment testing (e.g. coal prices, modifications to plant design, percentage of high quality metallurgical coal production expected etc.), please confirm you will expand your disclosure in future filings to discuss such changes. Please provide us with draft disclosures based on your impairment testing for the year ended December 31, 2012.

RESPONSE:

In our responses to prior comments, we compared assumptions from our 2012 impairment test to those from the original purchase accounting for the ICG acquisition. We would like to clarify that many of the considerable changes you note were made in 2011 and were considered in our annual impairment

test in that year. However, the increase in the percentage of production that could be sold into metallurgical markets occurred throughout 2011 and 2012. This was the only significant change in assumptions from our 2011 to our 2012 impairment testing.

We confirm that in future filings we will disclose all significant assumptions that drive the fair value of our reporting units and, in periods when applicable, disclose when there have been considerable changes in those assumptions.

Draft disclosures based on the impairment testing for the year ended December 31, 2012 are as follows (changes from the Form 10-K noted in **bold**):

Excerpt from Critical Accounting Policies

“Goodwill

In a business combination, goodwill represents the excess of the purchase price over the fair value assigned to the net tangible and identifiable intangible assets acquired. We test goodwill for impairment annually as of the beginning of the fourth quarter, or when circumstances indicate a possible impairment may exist. If the results of the testing indicate that the carrying amount of a reporting unit exceeds the fair value of the reporting unit, the fair value of goodwill must be calculated. An impairment loss generally would be recognized when the carrying amount of goodwill exceeds the implied fair value of goodwill, determined by subtracting the fair value of the other assets and liabilities associated with the reporting unit from the total fair value of the reporting unit. The fair value of a reporting unit is determined using a discounted cash flow (“DCF”) technique. A number of significant assumptions and estimates are involved in the application of the DCF analysis to forecast operating cash flows, including the discount rate; **projections of production volumes, quality and costs to produce; projections of sales volumes by market (e.g., thermal versus metallurgical); and projections of market prices.**

The remaining two reporting units in the Appalachia segment are in the development stage at this time, and as such, their fair values are less sensitive to changes in near-term metallurgical coal pricing. **Additionally, based on development activities to date, we have assumed that more of the production from these units will be able to be sold into metallurgical markets, partially offsetting the impact of lower pricing. Changes in these and other significant assumptions could have a negative effect on the value of these reporting units, including the following:**

- Changes in the long-term outlook in the global demand for metallurgical coal from the U.S.;
- **Changes in estimates of the amount, timing or quality of expected production volumes; and**
- **Changes in estimates of the amount of a unit’s output that could be sold into metallurgical markets.”**

Excerpt from Note 7, Goodwill

The goodwill amounts allocated to certain reporting units in the Company’s Appalachia segment acquired with the ICG acquisition are sensitive to volatility in the demand for metallurgical coal.

During the 2012, metallurgical prices fell substantially from the peaks reached during 2011, when the reporting units were acquired with the Company’s purchase of ICG. This caused the fair value of two of these reporting units to fall below their carrying value. The allocated goodwill of \$214.9 million for those reporting units was determined to be fully impaired, based on the discounted cash flows used in the ICG acquisition valuation, adjusted for current market conditions and estimates of production levels. The Company recognized the impairment charge in the fourth quarter of 2012. **The remaining two reporting units in the Appalachia segment are in the development stage at this time, and as such, their fair values are less sensitive to changes in near-term metallurgical coal pricing. Additionally, based on development activities to date, the Company has assumed that more of the production from these units will be able to be sold into metallurgical markets, partially offsetting the impact of lower pricing.**

* * *

Arch Coal acknowledges that:

- Arch Coal is responsible for the adequacy and accuracy of the disclosure in the filing;
- Staff comments or changes to disclosure in response to Staff comments do not foreclose the Commission from taking any action with respect to the filing; and
- Arch Coal may not assert Staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Thank you for your consideration. If you require any additional information on these issues, or if I can provide you with any other information that will facilitate your continued review of the Form 10-K, please contact me at 314-994-2700 at your earliest convenience.

Sincerely,

ARCH COAL, INC.

By: /s/ John T. Drexler
John T. Drexler
Senior Vice President and
Chief Financial Officer

