UNITED STATES SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, DC 20549

FORM 8-K

CURRENT REPORT Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of report (Date of earliest event reported): December 19, 2012 (December 13, 2012)

Arch Coal, Inc.

(Exact name of registrant as specified in its charter)

Delaware (State or other jurisdiction of incorporation)

1-13105 (Commission File Number) **43-0921172** (I.R.S. Employer Identification No.)

CityPlace One One CityPlace Drive, Suite 300 St. Louis, Missouri 63141

(Address, including zip code, of principal executive offices)

Registrant's telephone number, including area code: (314) 994-2700

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- o Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- o Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- o Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- o Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On December 13, 2012, Mr. Robert G. Potter notified Arch Coal, Inc. (the "Company") that he intends to retire from the Board of Directors of the Company, effective February 1, 2013, after serving on the board since 2001. The retirement is not related to any disagreement between Mr. Potter and the Company. Mr. Potter serves on the Company's Finance Committee and Personnel and Compensation Committee.

On December 13, 2012, Mr. James R. Boyd notified the Company that he intends to retire from the Board of Directors of the Company, effective February 1, 2013, after his long tenure on the board for more than 20 years. The retirement is not related to any disagreement between Mr. Boyd and the Company. Mr. Boyd serves as the Company's lead director, is chairman of the Company's Nominating and Corporate Governance Committee and is a member of the Company's Audit Committee.

2

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Dated: December 19, 2012 Arch Coal, Inc.

By: /s/ Robert G. Jones

Robert G. Jones

Senior Vice President — Law, General Counsel and Secretary