

**UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, DC 20549**

**FORM S-8**

**REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

**ARCH COAL, INC.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction of incorporation or organization)

**43-0921172**

(I.R.S. Employer Identification No.)

**One CityPlace Drive, Ste. 300  
St. Louis, Missouri**

(Address of principal executive offices)

**63141**

(Zip Code)

**ARCH COAL, INC. EMPLOYEE THRIFT PLAN**

(Full title of the plan)

**Robert G. Jones**

**Senior Vice President—Law, General Counsel and Secretary**

**Arch Coal, Inc.**

**One CityPlace Drive, Ste. 300**

**St. Louis, Missouri 63141**

(Name and address of agent for service)

**(314) 994-2700**

(Telephone number, including area code, of agent for service)

**Copies of all communications to:**

**Jeffrey W. Acre, Esq.**

K&L Gates LLP

K&L Gates Center

210 Sixth Avenue

Pittsburgh, Pennsylvania 15222

(412) 355-6500

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. (Check one):

Large accelerated filer            Accelerated filer            Non-accelerated filer            Smaller reporting company     

(Do not check if a smaller reporting company)

**CALCULATION OF REGISTRATION FEE**

Title of each class of securities to be registered	Amount to be Registered(1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock, par value \$0.01 per share	3,000,000(2)	\$ 4.90(3)	\$ 14,700,000	\$ 2,006

- (1) This Registration Statement also registers additional securities to be offered or issued upon adjustments or changes made to registered securities by reason of any stock splits, stock dividends or similar transactions as permitted by Rule 416(a) and Rule 416(b) under the Securities Act of 1933, as amended (the “Securities Act”).
- (2) In addition, pursuant to Rule 416(c) under the Securities Act of 1933, this registration statement also covers an indeterminate amount of interests to be offered or sold pursuant to the employee benefit plan described herein.
- (3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(h) under the Securities Act. The fee is calculated on the basis of the average of the high and low prices for the Registrant’s Common Stock reported on the New York Stock Exchange on August 26, 2013.

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## EXPLANATORY NOTE

Pursuant to Instruction E of Form S-8, this filing relates to the registration of additional securities of the same class as other securities for which a registration statement filed on this form relating to a benefit plan is effective. The contents of the registration statement on Form S-8 (File No. 333-32777) filed on August 4, 1997 are hereby incorporated by reference, except as amended by the items included below.

## PART II

### INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

#### ITEM 3. INCORPORATION OF DOCUMENTS BY REFERENCE.

The following documents filed by the Registrant with the Securities and Exchange Commission (the "Commission") are incorporated by reference into this Registration Statement:

1. The Registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2012;
2. The Registrant's Quarterly Reports on Form 10-Q for the periods ended March 31 and June 30, 2013;
3. The Registrant's Current Reports on Form 8-K, filed February 26, 2013, April 30, July 2, August 12, August 19 and August 27, 2013; and
4. The description of the Registrant's Common Stock contained in the Registration Statement filed by the Registrant under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), including any amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by the Registrant with the Commission pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Exchange Act after the date of this Registration Statement, but prior to the filing of a post-effective amendment to this Registration Statement that indicates that all securities offered by this Registration Statement have been sold or which deregisters all such securities then remaining unsold, shall be deemed to be incorporated by reference into this Registration Statement; provided, however, that the Registrant is not incorporating by reference any information furnished (but not filed) under Item 2.02 or Item 7.01 of any Current Report on Form 8-K. Each document incorporated by reference into this Registration Statement shall be deemed to be a part of this Registration Statement from the date of filing of such document with the Commission until the information contained therein is superseded or updated by any subsequently filed document that is incorporated by reference into this Registration Statement or by any document that constitutes part of the prospectus relating to the Registrant's Omnibus Incentive Plan, each meeting the requirements of Section 10(a) of the Securities Act.

#### ITEM 5. INTERESTS OF NAMED EXPERTS AND COUNSEL.

Jon S. Ploetz, Assistant General Counsel and Assistant Secretary of Arch Coal, Inc., has rendered an opinion as to the validity of the shares of common stock being registered hereby. Mr. Ploetz is paid a salary by us and is a participant in various employee benefit plans offered to our employees generally.

#### ITEM 8. EXHIBITS.

The following exhibits are filed herewith or incorporated by reference as part of this Registration Statement:

- 4.1 Restated Certificate of Incorporation of Arch Coal, Inc. (incorporated herein by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on May 5, 2006).
- 4.2 Arch Coal, Inc. Bylaws, as amended effective as of December 5, 2008 (incorporated herein by reference to

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Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed on December 10, 2008).

- 5.1 Opinion of counsel (filed herewith).
- 23.1 Consent of Ernst & Young LLP, independent registered public accounting firm (filed herewith).
- 23.2 Consent of counsel (included in the opinion filed as Exhibit 5.1 hereto).
- 24.1 Power of Attorney (included on the signature page to this Registration Statement).

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## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-8 and has duly caused this Registration Statement on Form S-8 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of St. Louis, State of Missouri, on this 28<sup>th</sup> day of August, 2013.

By: /s/ John W. Eaves  
 John W. Eaves  
 President and Chief Executive Officer

### POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person, whose signature appears below, constitutes and appoints John W. Eaves, John T. Drexler and Robert G. Jones, and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for the undersigned and in his or her name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this Registration Statement and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, the following persons in the capacities and on the dates indicated have signed this Registration Statement below.

<u>Signature</u>	<u>Capacity</u>	<u>Date</u>
<u>/s/ John W. Eaves</u> John W. Eaves	President and Chief Executive Officer, Director ( <i>Principal Executive Officer</i> )	August 28, 2013
<u>/s/ John T. Drexler</u> John T. Drexler	Senior Vice President and Chief Financial Officer ( <i>Principal Financial Officer</i> )	August 28, 2013
<u>/s/ John W. Lorson</u> John W. Lorson	Vice President and Chief Accounting Officer ( <i>Principal Accounting Officer</i> )	August 28, 2013
<u>/s/ Steven F. Leer</u> Steven F. Leer	Chairman of the Board of Directors	August 28, 2013
<u>/s/ David D. Freudenthal</u> David D. Freudenthal	Director	August 28, 2013

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<u>Signature</u>	<u>Capacity</u>	<u>Date</u>
<u>/s/ Patricia F. Godley</u> Patricia F. Godley	Director	August 28, 2013
<u>/s/ Paul T. Hanrahan</u> Paul T. Hanrahan	Director	August 28, 2013
<u>/s/ Douglas H. Hunt</u> Douglas H. Hunt	Director	August 28, 2013
<u>/s/ J. Thomas Jones</u> J. Thomas Jones	Director	August 28, 2013
<u>/s/ George C. Morris III</u> George C. Morris III	Director	August 28, 2013
<u>/s/ Theodore D. Sands</u> Theodore D. Sands	Director	August 28, 2013
<u>/s/ Wesley M. Taylor</u>	Director	August 28, 2013

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**EXHIBIT INDEX**

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5.1	Opinion of counsel (filed herewith).
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm (filed herewith).
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24.1	Power of Attorney (included on the signature page to this Registration Statement).

August 28, 2013

Board of Directors  
Arch Coal, Inc.  
One CityPlace Drive, Ste. 300  
St. Louis, Missouri 63141

Ladies and Gentlemen:

I am Assistant General Counsel and Assistant Secretary for Arch Coal, Inc., a Delaware corporation (the "Company"). This opinion letter is being furnished in connection with the registration under the Securities Act of 1933, as amended (the "Act"), of up to 3,000,000 shares of the Company's common stock, par value \$0.01 per share (the "Shares") which may be offered and sold under the Arch Coal, Inc. Employee Thrift Plan (the "Plan").

This opinion is being delivered in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

In connection herewith, I have examined the Registration Statement on Form S-8 (the "Registration Statement") to be filed by the Company with the Securities and Exchange Commission under the Act. I have also examined the Company's Certificate of Incorporation and Bylaws, each as amended, and the corporate actions of the Company that provide for the issuance of the Shares, and have made such other investigation as I have deemed appropriate. I also have examined and relied upon certificates of public officials and, in rendering our opinion, have made the assumptions that are customary in opinion letters of this kind. I have not verified any of those assumptions.

Based upon and subject to the foregoing and the additional qualifications and other matters set forth below, I am of the opinion that the Shares have been duly and validly authorized and reserved for issuance, and that the Shares, when offered and sold by the Company in accordance with the terms of the Plan, will be validly issued, fully paid and nonassessable.

The opinion expressed above is limited to the laws of the State of Missouri, the Federal laws of the United States of America and, to the extent required by the foregoing, the General Corporation Law of the State of Delaware as in effect (and published or otherwise generally available) on the date hereof, and I assume no obligation to revise or supplement the opinion should such law be changed by legislative action, judicial decision or otherwise. In rendering the opinion, I have not considered, and hereby disclaim any opinion as to, the application or impact of any laws, cases, decisions, rules or regulations of any other jurisdiction, court or administrative agency.

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I hereby consent to the filing of this opinion as Exhibit 5.1 to the Registration Statement and to the references to my name in the Registration Statement. In giving our consent I do not thereby concede that I am in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Jon S. Ploetz

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Jon S. Ploetz  
Assistant General Counsel and Assistant Secretary

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Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8) pertaining to the Arch Coal, Inc. Employee Thrift Plan of Arch Coal, Inc. as of our reports dated March 1, 2013, with respect to the consolidated financial statements and schedule of Arch Coal, Inc., and the effectiveness of internal control over financial reporting of Arch Coal, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2012, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP  
St. Louis, Missouri  
August 28, 2013

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