

Freudenthal David D.  
Form 4  
December 16, 2011

**FORM 4**

**UNITED STATES SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549**

OMB APPROVAL

OMB Number: 3235-0287  
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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

**STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES**

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person \*  
Freudenthal David D.

(Last) (First) (Middle)

ONE CITYPLACE DRIVE, SUITE 300

(Street)

ST. LOUIS, MO 63141

(City) (State) (Zip)

2. Issuer Name and Ticker or Trading Symbol  
ARCH COAL INC [ACI]

3. Date of Earliest Transaction  
(Month/Day/Year)  
12/15/2011

4. If Amendment, Date Original Filed(Month/Day/Year)

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

Director  10% Owner  
 Officer (give title below)  Other (specify below)

6. Individual or Joint/Group Filing(Check Applicable Line)  
 Form filed by One Reporting Person  
 Form filed by More than One Reporting Person

**Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned**

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|----------------------------------------------------|--------------------------------|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------|
|                                 |                                      |                                                    |                                | (A) or (D)                                                        | Amount                                                                                        |                                                          |                                              |
|                                 |                                      |                                                    |                                | Code                                                              | V                                                                                             |                                                          |                                              |
|                                 |                                      |                                                    |                                |                                                                   | Amount                                                                                        |                                                          |                                              |
|                                 |                                      |                                                    |                                | (D)                                                               | Price                                                                                         |                                                          |                                              |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

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**Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)**

| 1. Title of Derivative Security | 2. Conversion or Exercise | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any | 4. Transaction Code | 5. Number of | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Price of Derivative Security |
|---------------------------------|---------------------------|--------------------------------------|-----------------------------------|---------------------|--------------|----------------------------------------------------------|---------------------------------------------------------------|---------------------------------|
|                                 |                           |                                      |                                   |                     |              |                                                          |                                                               |                                 |

