

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

SCHEDULE 13G

Under the Securities Exchange Act of 1934

(Amendment No. 2)

NAME OF ISSUER: ARCH COAL INC.

TITLE OF CLASS OF SECURITIES: COMMON

CUSIP NUMBER: 039380100

CUSIP NO. 039380100

(1) Names of Reporting Persons MELLON FINANCIAL CORPORATION
SS or IRS Identification Nos. Of Above Person IRS No. 25-1233834

(2) Check the Appropriate Box if a Member of a Group (See Instructions)
(a) () (b) ()

(3) SEC Use Only

(4) Citizenship or Place of Organization United States

Number of Shares (5) Sole Voting Power 3,625,019

Beneficially Owned by Each (6) Shared Voting Power 266,575

Reporting Person With (7) Sole Dispositive Power 4,050,062

(8) Shared Dispositive Power 171,001

(9) Aggregate Amount Beneficially Owned by Each Reporting Person
4,242,563

(10) Check if the Aggregate Amount in Row (9) Excludes Certain
Shares (See Instructions) ()

(11) Percent of Class Represented by Amount in Row (9) 8.10

(12) Type of Reporting Person (See Instructions) HC

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- Item 1(a) Name of Issuer: Arch Coal Inc.
- Item 1(b) Address of Issuer's Principal Executive Offices:
City Place One Ste 300
Arch Mineral Corp
St. Louis, MO 63141
- Item 2(a) Name of Person Filing: Mellon Financial Corporation and any other reporting person(s) identified on the second part of the cover page(s).
- Item 2(b) Address of Principal Business Office, or if None, Residence:
c/o Mellon Financial Corporation
One Mellon Center
Pittsburgh, Pennsylvania 15258
(for all reporting persons)
- Item 2(c) Citizenship: United States
- Item 2(d) Title of Class of Securities: Common Stock
- Item 2(e) CUSIP Number: 039380100
- Item 3 See Item 12 of cover page(s) ("Type of Reporting Person") for each reporting person.

BK = Bank as defined in Section 3(a)(6) of the Act

IV = Investment Company registered under Section 8 of the Investment Company Act of 1940

IA = Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940

EP = Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Section 240.13-d(1)(b)(1)(ii)(F)

HC = Parent Holding Company, in accordance with Section 240.13-d(1)(b)(1)(ii)(G)

- Item 4 Ownership: See Items 5 through 9 and 11 of cover page(s) as to each reporting person.

The amount beneficially owned includes, where appropriate, securities not outstanding which are subject to options, warrants, rights or conversion privileges that are exercisable within 60 days. The filing of this Schedule 13G shall not be construed as an admission that Mellon Financial Corporation, or its direct or indirect subsidiaries, including Mellon Bank, N.A., are for the purposes of Section 13(d) or 13(g) of the Act, the beneficial owners of any securities covered by this Schedule 13G.

The following information applies if checked: () Mellon Bank, N.A. is the trustee of the issuer's employee benefit plan (the "Plan"), which is subject to ERISA. The securities reported include all shares held of record by Mellon Bank, N.A. as trustee of the Plan which have not been allocated to the individual accounts of employee participants in the Plan. The reporting person, however, disclaims beneficial ownership of all shares that have been allocated to the individual accounts of employee participants in the Plan for which directions have been received and followed.

- Item 5 Ownership of Five Percent or Less of a Class: If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than five percent of the class of securities, check the following ()

Item 6 Ownership of More than Five Percent on Behalf of Another Person: All of the securities are beneficially owned by Mellon Financial Corporation and direct or indirect subsidiaries in their various

fiduciary capacities. As a result, another entity in every instance is entitled to dividends or proceeds of sale. The number of individual accounts holding an interest of 5% or more is (0).

Item 7 Identification and Classification of the Subsidiary Which Acquired the Security Being Reported by the Parent Holding Company:
See Exhibit I.

Item 8 Identification and Classification of Members of the Group: N/A

Item 9 Notice of Dissolution of Group: N/A

Item 10 Certification: By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were acquired and are held in the ordinary course of business and were not acquired and are not held for the purpose of and do not have the effect of changing or influencing the control of the issuer of such securities and were not acquired and are not held in connection with or as a participant in any transaction having such purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct. This filing is signed by Mellon Financial Corporation on behalf of all reporting entities pursuant to Rule 13d-1(f)(1) promulgated under the Securities and Exchange Act of 1934, as amended.

Date: August 7, 2002

MELLON FINANCIAL CORPORATION

By: MARY J. RICHARDS

Mary J. Richards
Vice President,
Mellon Bank, N.A.
Attorney-In-Fact for
Mellon Financial Corporation

EXHIBIT I

The shares reported on the attached Schedule 13G are beneficially owned by the following direct or indirect subsidiaries of Mellon Financial Corporation, as marked (X):

(A) The Item 3 classification of each of the subsidiaries listed below is "Item 3(b) Bank as defined in Section 3(a)(6) of the Act."

- (X) Boston Safe Deposit and Trust Company (parent holding company of Boston Safe Advisors, Inc., Franklin Portfolio Associates, LLC, TBCAM Holdings, Inc., The Boston Company Asset Management, LLC and Mellon Growth Advisors LLC)
- () Mellon Bank DE National Association
- (X) Mellon Bank, N.A. (parent holding company of Founders Asset Management LLC, The Dreyfus Corporation, Mellon Equity Associates, LLP and Laurel Capital Advisors, LLP)
- () Mellon Trust of California
- () Mellon Trust of New York, LLC
- () Mellon Private Trust Company, National Association

(B) The Item 3 classification of each of the subsidiaries listed below is "Item 3(e) Investment Advisor registered under Section 203 of the Investment Advisors Act of 1940."

- () Boston Safe Advisors, Inc.
- (X) Dreyfus Investment Advisors, Inc.
- () Founders Asset Management LLC
- () Franklin Portfolio Associates LLC
- () Laurel Capital Advisors, LLP
- (X) Mellon Capital Management Corporation
- () Mellon Equity Associates, LLP
- () Mellon-Newton Asset Management Limited
- () Newton Capital Management Limited
- () Newton Fund Managers Limited
- () Newton International Investment Management Limited
- () Newton Investment Management (IOM) Limited
- () Newton Investment Management (Guernsey) Limited
- () Newton Investment Management Limited
- () Newton Management (Asia) Pte Limited
- () Royal Bank of Scotland Portfolio Management Limited
- () Royal Bank of Scotland Unit Trust Management Limited
- () Stewart Newton Fund Management (Mauritius) Limited
- () Sundaram Newton Asset Management Company Private Limited
- (X) The Dreyfus Corporation (parent holding company of Dreyfus Investment Advisors, Inc.)
- (X) The Boston Company Asset Management, LLC
- () Wellington BES Limited
- () Mellon Ventures Fund I, LLC
- () Mellon Ventures II, L.P.
- () Mellon Ventures, L.P.
- (X) Standish Mellon Asset Management LLC
- () Dreyfus Service Corporation
- () Mellon Growth Advisors LLC

(C) The Item 3 classification of each of the legal entities listed below is "Item 3(g) Parent Holding Company, in accordance with Section 240.13d-I(b)(ii)(G)."

- (X) MBC Investments Corporation (parent holding company of Mellon Capital Management Corporation, Mellon UK Holdings, Mellon Ventures Fund Holding Corp. and Mellon Ventures II, L.P.)
- (X) Mellon Financial Corporation
- () Newton Management Limited (parent holding company of all Newton entities listed in (B) above)
- () The Boston Company, Inc. (parent holding company of Mellon Trust of California, Mellon Private Trust Company, National Association, Mellon Trust of New York, LLC and Mellon Trust of Washington)

NOTE: ALL OF THE LEGAL ENTITIES LISTED UNDER (A) AND (B) ABOVE ARE DIRECT OR INDIRECT SUBSIDIARIES OF MELLON FINANCIAL CORPORATION. BENEFICIAL OWNERSHIP OF MORE THAN FIVE PERCENT OF THE CLASS BY ANY ONE OF THE SUBSIDIARIES OR INTERMEDIATE PARENT HOLDING COMPANIES LISTED ABOVE IS REPORTED ON A JOINT REPORTING PERSON PAGE FOR THAT SUBSIDIARY ON THE ATTACHED SCHEDULE 13G AND IS INCORPORATED IN THE TOTAL PERCENT OF CLASS REPORTED ON MELLON FINANCIAL CORPORATION'S REPORTING PERSON PAGE. (DO NOT ADD THE SHARES OR PERCENT OF

CLASS REPORTED ON EACH JOINT REPORTING PERSON PAGE ON THE ATTACHED SCHEDULE
13G TO DETERMINE THE TOTAL PERCENT OF CLASS FOR MELLON FINANCIAL CORPORATION.)