

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 11-K

(Mark One)

Annual Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934
For the fiscal year ended December 31, 2006

Transition Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934
For the transition period from _____ to _____

Commission file number: 1-13105

Arch Coal, Inc. Employee Thrift Plan

(Full title of the plan and the address of the plan, if different from that of the issuer named below)

Arch Coal, Inc.
One CityPlace Drive, Suite 300
St. Louis, Missouri 63141

(Name of issuer of the securities held pursuant to the plan and the address of its principal executive office)

*ARCH COAL, INC.
EMPLOYEE THRIFT PLAN
FINANCIAL STATEMENTS
DECEMBER 31, 2006*

[Table of Contents](#)

Contents

	<u>Page</u>
Report Of Independent Registered Public Accounting Firm	1
Financial Statements	
Statement Of Net Assets Available For Benefits	2
Statement Of Changes In Net Assets Available For Benefits	3
Notes To Financial Statements	4 - 11
Supplementary Information	
Report Of Independent Registered Public Accounting Firm On Supplementary Information	12
Schedule Of Assets Held At End Of Year	13 - 14
Consent of Independent Registered Public Accounting Firm	

Report Of Independent Registered Public Accounting Firm

To The Pension Committee
Arch Coal, Inc. Employee Thrift Plan

We have audited the accompanying statement of net assets available for benefits of the Arch Coal, Inc. Employee Thrift Plan (the Plan) as of December 31, 2006 and 2005, and the related statement of changes in net assets available for benefits for the years then ended. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the Standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits at December 31, 2006 and 2005, and the changes in net assets available for benefits for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

/s/ RubinBrown LLP
St. Louis, Missouri
June 27, 2007

ARCH COAL, INC. EMPLOYEE THRIFT PLAN
STATEMENT OF NET ASSETS AVAILABLE FOR BENEFITS

	<u>December 31,</u>	
	2006	2005
Assets		
Investments, At Fair Value (Note 3)		
Money market	\$ 2,098,427	\$ 2,521,074
Mutual funds and common/collective fund	195,099,078	196,403,572
Stable value fund	51,701,027	64,475,201
Company stock	23,590,240	29,362,090
Brokerage securities	16,173,578	17,501,232
Participant loans (Note 4)	12,695,150	13,247,484
Net Assets Reflected At Fair Value	301,357,500	323,510,653
Adjustment From Fair Value To Contract Value For Fully Benefit-Responsive Investment Contracts	781,446	509,385
Net Assets Available For Benefits	\$ 302,138,946	\$ 324,020,038

See the accompanying notes to financial statements.

Page 2

ARCH COAL, INC. EMPLOYEE THRIFT PLAN
STATEMENT OF CHANGES IN NET ASSETS
AVAILABLE FOR BENEFITS

	For The Years Ended December 31,	
	2006	2005
Additions To Net Assets Attributed To:		
Investment Income (Note 3)		
Dividends and interest	\$ 12,927,085	\$ 9,702,428
Net appreciation in fair value of investments	9,163,977	26,443,068
Net Investment Income	22,091,062	36,145,496
Transfer Into The Plan (Note 7)	—	11,091,394
Contributions		
Salary deferral	16,466,791	16,179,664
Employer	13,117,492	12,225,450
Employee after-tax	1,182,386	1,289,169
Rollover	1,518,973	844,043
Total Contributions	32,285,642	30,538,326
Total Additions	54,376,704	77,775,216
Deductions From Net Assets Attributed To:		
Benefits Paid Directly To Participants	21,910,644	25,418,329
Transfer Out Of The Plan (Note 7)	54,347,152	—
Total Deductions	76,257,796	25,418,329
Net Increase (Decrease)	(21,881,092)	52,356,887
Net Assets Available For Benefits —		
Beginning Of Year	324,020,038	271,663,151
Net Assets Available For Benefits —		
End Of Year	\$ 302,138,946	\$ 324,020,038

See the accompanying notes to financial statements.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN
NOTES TO FINANCIAL STATEMENTS
December 31, 2006 And 2005

1. Description Of The Plan

The Arch Coal, Inc. Employee Thrift Plan (the Plan) was established by Arch Coal, Inc. (the Company) for the benefit of the eligible employees of the Company, its subsidiaries and controlled affiliates.

The following description of the Plan provides only general information. Participants should refer to the Plan Agreement for a more complete description of the Plan's provisions.

Certain provisions of the Plan as described below do not apply to or have been modified for certain subsidiaries and affiliates of the Company.

General

The Plan, which has been adopted by Arch Coal, Inc., is a defined contribution plan, which includes a 401(k) provision. The Plan covers all full-time salaried employees, all full-time nonunion hourly employees, and certain union employees where specified by applicable collective bargaining agreements of the Company, its subsidiaries, and any controlled affiliates that elect to participate in the Plan. It is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Effective January 1, 2006, the Plan was amended to include an automatic enrollment provision for all eligible employees. The automatic enrollment provided for default deferral contributions of 6% of eligible compensation. The contributions will be invested in both equity and fixed income investments. The participant has the option to make changes to the deferral percentage and investment allocation at any time. The Plan was also amended to implement provisions of The Final Treasury Regulations governing sections 401(k) and 401(m) of the Internal Revenue Code.

Contributions

Participants may elect to defer between 1 percent and 50% of compensation. Highly compensated employees may contribute up to 16%, with the exception of the highly compensated hourly employees at Mingo Logan and Mountain Laurel who may contribute up to 17%. The percentage of employer match or nondiscretionary contribution depends upon the location.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (*Continued*)

Effective January 1, 2006, the Plan was amended to replace a 50% matching contribution with a 100% matching contribution up to the first 6% of eligible compensation for certain employees of Cumberland River.

Participant Accounts

Each participant's account is credited with the participant's contributions, the employer's matching contribution, if applicable, or employer non-discretionary contribution, if applicable, and an allocation of Plan earnings. The allocation of earnings is determined by the earnings of the participant's investment selection based on each participant's account balance, as defined in the Plan agreement. The benefit to which a participant is entitled is the benefit that can be provided from the participant's account.

Vesting

Participants are fully vested in their contributions plus actual earnings. All eligible employees of the Company at December 31, 1997 became fully vested in the Plan. Eligible employees hired subsequent to December 31, 1997 vest in Company contributions and earnings upon the completion of three full and consecutive years of service. The hourly employees at Mingo Logan and Mountain Laurel are fully vested after the completion of two full and consecutive years of service.

All participants become fully vested upon death while employed, total disability, or normal retirement age, regardless of the number of months of participation.

Participant Loans

Active participants, with some exceptions, may borrow from their fund accounts a minimum of \$500 or up to a maximum equal to the lesser of \$50,000 or 50 percent of their vested account balances. Loan terms range from one to five years or longer for the purchase of a primary residence. The loans are secured by the balance in the participant's account and bear interest at the prime rate listed in the Wall Street Journal on the first day of the month the loan is processed. Principal and interest are paid ratably through payroll deductions.

Payment Of Benefits

Upon death, termination of service, or attainment of age 70-1/2, a participant may elect to receive either a lump-sum amount equal to the value of the participant's vested interest in his or her account, a single annuity, the purchase of a joint and survivorship annuity with various survivor options, or a series of installment payments. Participant accounts with balances of \$1,000 or less will be automatically distributed unless otherwise instructed.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (*Continued*)

Forfeited Accounts

Forfeited amounts of employer contributions are used to offset future Company matching contributions of the Plan. At December 31, 2006 and 2005, forfeited amounts available to reduce future Company contributions were \$246,883 and \$161,849, respectively.

Investment Options

Upon enrollment in the Plan, a participant may direct contributions in a number of investment options offered by the Plan.

Hardship Withdrawals

A participant who has reached age 59-1/2 or experienced a qualifying financial hardship may withdraw all or part of his or her vested account. Hardship withdrawals will be approved only if they conform to the Plan provisions and established Internal Revenue Service safe harbors.

2. Summary Of Significant Accounting Policies

Basis Of Accounting

The financial statements of the Plan are prepared under the accrual basis of accounting.

Estimates And Assumptions

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of additions to and deductions from net assets during the reporting period. Actual results could differ from those estimates.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (*Continued*)

As described in Financial Accounting Standards Board Staff Position, FSP AAG INV-1 and SOP 94-4-1, *Reporting of Fully Benefit-Responsive Investment Contracts Held by Certain Investment Companies Subject to the AICPA Investment Company Guide and Defined-Contribution Health and Welfare and Pension Plans* (the FSP), investment contracts held by a defined-contribution plan are required to be reported at fair value. However, contract value is the relevant measurement attribute for that portion of the net assets available for benefits of a defined-contribution plan attributable to fully benefit-responsive investment contracts because contract value is the amount participants would receive if they were to initiate permitted transactions under the terms of the plan. As required by the FSP, the Statement of Net Assets Available for Benefits presents the fair value of the investment contracts as well as the adjustment of the fully benefit-responsive investment contracts from fair value to contract value. The Statement of Changes in Net Assets Available for Benefits is prepared on a contract value basis.

Accounting Reclassifications

Certain 2005 figures were reclassified as appropriate, to conform to the financial presentation used in 2006, as required by FSP AAG INV-1 and SOP 94-4-1.

Investment Valuation And Income Recognition

Investments in mutual funds are valued at reported net asset value at December 31, 2006 as determined by the fund manager. Participant loans are valued at their outstanding balances, which approximate fair value. The fair value of the Invesco Stable Value Fund is calculated by discounting the related cash flows based on current yields of similar instruments with comparable durations.

Investment income is recorded as earned on the accrual basis. Purchases and sales of securities are recorded on a trade-date basis. Dividends are recorded on the ex-dividend date.

Payment Of Benefits

Benefits are recorded when paid.

3. Investments

The Company has established a Pension Committee to oversee the activities of the Plan and has appointed the Vice President — Human Resources as the Plan Administrator. Mercer Fiduciary Trust Company is the Trustee for the Plan and Mercer HR Services is the Plan recordkeeper.

[Table of Contents](#)**ARCH COAL, INC. EMPLOYEE THRIFT PLAN**

Notes To Financial Statements (Continued)

Net Assets Available For Benefits

	December 31,	
	2006	2005
Putnam Money Market Fund	\$ 2,098,427	\$ 2,521,074
Mutual Funds And Common/Collective Fund		
American Century Income and Growth Fund	28,562,832*	32,171,638*
Growth Fund of America	24,007,199*	24,631,761*
Investment Company of America	2,791,113	1,927,475
Black Rock Small Cap Core Equity Fund	3,246,612	3,079,098
Dodge & Cox Balanced Fund	27,734,043*	27,074,513*
Franklin Templeton Balance Sheet Fund	23,375,402*	26,176,501*
Julius Baer International Equity Fund	19,536,028*	15,964,475*
PIMCO Total Return Fund	14,094,269	16,434,041*
Putnam Asset Allocation: Balanced Fund	11,876,688	5,352,404
Putnam S&P 500 Index	24,077,681*	25,145,367*
Putnam Vista Fund	11,196,169	13,299,605
Wells Fargo Advantage Outlook 2010	1,474,966	2,114,854
Wells Fargo Advantage Outlook 2020	1,170,765	1,340,528
Wells Fargo Advantage Outlook 2030	1,050,139	898,320
Wells Fargo Advantage Outlook 2040	905,172	792,992
Total Mutual Funds And Common/Collective Fund	195,099,078	196,403,572
Invesco Stable Value Fund (At Contract Value)	52,482,473*	64,984,586*
Arch Coal, Inc. Common Stock	23,590,240*	29,362,090*
Putnam Direct Personal Choice Retirement Account	16,173,578*	17,501,232*
Participant Loans	12,695,150	13,247,484
	\$ 302,138,946	\$ 324,020,038

* Investment represents 5% or more of net assets.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (Continued)

During 2006 and 2005, the Plan's investments (including gains on investments bought and sold, as well as held during the year) appreciated (depreciated) in value as follows:

	2006	2005
Mutual funds and common/collective fund	\$ 17,246,603	\$ 8,915,124
Company stock	(8,082,626)	17,527,944
	\$ 9,163,977	\$ 26,443,068

The Plan has entered into a benefit-responsive investment contract with Invesco which maintains the contributions in a managed account. The account is credited with earnings on the underlying investments and charged for participant withdrawals and administrative expenses. The investment contract issuer is not contractually obligated to repay the principal and a specified interest rate to the Plan. However, the underlying assets of the fund carry guaranteed rates of interest.

As described in Note 2, because the contract is fully benefit-responsive, contract value is the relevant measurement attribute for that portion of the net assets available for benefits attributable to the guaranteed investment contract. Contract value, as reported to the Plan by Invesco, represents contributions made under the contract, plus earnings, less participant withdrawals and administrative expenses. Participants may ordinarily direct the withdrawal or transfer of all or a portion of their investment at contract value.

There are no reserves against contract value for credit risk of the contract issuer or otherwise. Interest income on the Invesco Stable Value Fund is calculated and credited daily based on the aggregate contract yield of the underlying investments. Interest rates are reset on a monthly basis. The investment contracts included in this fund had an average yield of 4.87% and 4.68% for the years ended December 31, 2006 and 2005, respectively. The average crediting interest rate was 4.98% and 4.71% at December 31, 2006 and 2005, respectively.

Certain events limit the ability of the Plan to transact at contract value with the issuer. Such events include the following: (1) amendments to the plan documents (including complete or partial plan termination or merger with another plan), (2) the decision by the Plan Sponsor to withdraw all assets from the funds and reinvest in another investment vehicle. The Plan Administrator does not believe that the occurrence of any such value event, which would limit the Plan's ability to transact at contract value with participants, is probable.

The contract permits the Company or Invesco to terminate the agreement upon 90 days notice to the other party.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (*Continued*)

4. Participant Loans

Participant loans are secured by participants' vested balances. The loans are due in bi-weekly payments including principal and interest at varying rates reflective of the prime rate as of the time of issue. At December 31, 2006, the interest rates on the participant loans range from 4% — 10%. The final installments are due at various dates through October 2021.

5. Plan Termination

Although it has not expressed intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan, subject to the provisions of ERISA. In the event of Plan termination, participants will become 100% vested in their accounts.

6. Income Tax Status

The Plan obtained its latest determination letter on September 26, 2002 in which the Internal Revenue Service stated that the Plan, as then designed, was in compliance with the applicable requirements of the Internal Revenue Code. The Plan has been amended since receiving the determination letter. The Plan Administrator is working with the Plan's counsel to correct certain design and operational failures of the Plan. The Plan Sponsor has submitted the corrections for approval through the Internal Revenue Service's voluntary correction program. The Plan Administrator believes that the corrective actions will maintain the tax qualifications of the Plan and the related trust will continue to be tax exempt.

7. Transfers

On December 31, 2005, Arch Coal, Inc. sold three of its subsidiaries; Hobet Mining, Apogee Coal Company and Catenary Coal Company, to Magnum Coal Company. During 2006, the participants' account balances were transferred to the Magnum Coal Company 401(k) Plan as of the effective date of the sale.

Effective January 1, 2005, the Plan was amended to include participants in Triton Coal Company, LLC 401(k) Plan as a result of the acquisition of this company by Arch Coal, Inc. Prior to that date, the former Triton employees participated in the Triton Coal Company, LLC 401(k) Plan until its merger into the Plan.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN

Notes To Financial Statements (*Continued*)

8. Subsequent Events

On June 20, 2007, the Company announced the sale of its Mingo Logan subsidiary's Ben Creek mining complex to Cobra Natural Resources, LLC. The divestiture of the complex will result in the termination of approximately 250 employees, who will become eligible to withdraw their balances from the Plan.

**Report Of Independent Registered Public
Accounting Firm On Supplementary Information**

Our audits were performed for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets held at end of year is presented for purposes of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Income Security Act of 1974. This supplemental schedule is the responsibility of the Plan's management, has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

/s/ RubinBrown LLP

June 27, 2007

ARCH COAL, INC. EMPLOYEE THRIFT PLAN
E.I.N.: 43-0921172 PLAN NO.: 006
SCHEDULE OF ASSETS HELD AT END OF YEAR
Page 1 Of 2
December 31, 2006

Identity Of Issuer	Description Of Investment	Current Value
Money Market		
Putnam Investments*	Putnam Money Market Fund	\$ 2,098,427
Mutual Funds And Common/Collective Fund		
American Century	American Century Income and Growth Fund	28,562,832
American Fund Corporation	Growth Fund of America	24,007,199
American Fund Corporation	Investment Company of America	2,791,113
Black Rock Funds	Black Rock Small Cap Core Equity Fund	3,246,612
Dodge & Cox Funds	Dodge & Cox Balanced Fund	27,734,043
Franklin Investments	Franklin Templeton Balance Sheet Fund	23,375,402
Julius Baer Group	Julius Baer International Equity Fund	19,536,028
PIMCO Investments	PIMCO Total Return Fund	14,094,269
Putnam Investments*	Putnam Asset Allocation: Balanced Fund	11,876,688
Putnam Investments*	Putnam S&P 500 Index	24,077,681
Putnam Investments*	Putnam Vista Fund	11,196,169
Wells Fargo	Wells Fargo Advantage Outlook 2010	1,474,966
Wells Fargo	Wells Fargo Advantage Outlook 2020	1,170,765
Wells Fargo	Wells Fargo Advantage Outlook 2030	1,050,139
Wells Fargo	Wells Fargo Advantage Outlook 2040	905,172
Total Mutual Funds And Common/Collective Fund		<u>195,099,078</u>
Common Stock		
Arch Coal, Inc.*	Common stock	<u>23,590,240</u>
Participant Directed Brokerage Accounts		
Putnam*	Putnam Direct Personal Choice Retirement Account (Participant Directed Brokerage Accounts)	<u>16,173,578</u>
Balance Carried Forward		<u>236,961,323</u>

* Represents party-in-interest

The above information is a required disclosure for IRS Form 5500, Schedule H, Part IV, line 4i.

ARCH COAL, INC. EMPLOYEE THRIFT PLAN
E.I.N.: 43-0921172 PLAN NO.: 006
SCHEDULE OF ASSETS HELD AT END OF YEAR
Page 2 Of 2
December 31, 2006

Identity Of Issuer	Description Of Investment	Current Value
Balance Brought Forward		<u>\$ 236,961,323</u>
Guaranteed Investment Account — Invesco Stable Value		
Fund		
Bank of America NT & SA	01-257	10,660,820
Bank of America NT & SA Wrapper	01-257	3,387
ING Life & Annuity	60034	6,304,122
ING Life & Annuity Wrapper	60034	62,663
JP Morgan Chase Bank	433119-MGC	9,094,587
JP Morgan Chase Bank Wrapper	433119-MGC	203,719
Mellon Bank STIF Account	6070002	675,326
Monumental Life Insurance Co.	MDA-00589TR	7,996,958
Monumental Life Insurance Co. Wrapper	MDA-00589TR	263,304
State Street Bank & Trust Co.	103077	9,098,845
State Street Bank & Trust Co. Wrapper	103077	200,744
Union Bank of Switzerland	5043	1,397,946
Union Bank of Switzerland Wrapper	5043	(6,685)
Union Bank of Switzerland	5155	6,464,837
Union Bank of Switzerland Wrapper	5155	61,900
Total Guaranteed Investment Account		<u>52,482,473</u>
Participant Loans	Bearing interest at 4% — 10%, due at various dates through October 2021	<u>12,695,150</u>
		<u>\$ 302,138,946</u>

The above information is a required disclosure for IRS Form 5500, Schedule H, Part IV, line 4i.

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the trustees (or other persons who administer the employee benefit plan) have duly caused this annual report to be signed on its behalf by the undersigned thereunto duly authorized.

Arch Coal, Inc. Employee Thrift Plan

By: /s/ Sheila B. Feldman

Sheila B. Feldman
Plan Administrator

June 27, 2007

Exhibit Index

Exhibit	Description
23.1	Consent of Independent Registered Public Accounting Firm

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-32777) pertaining to the Arch Coal, Inc. Employee Thrift Plan of our report dated June 27, 2007, with respect to the financial statements and supplemental schedule of Arch Coal, Inc. Employee Thrift Plan included in this Annual Report on Form 11-K for the year ended December 31, 2006.

/s/ RubinBrown LLP

St. Louis, Missouri

June 27, 2007