ARCH COAL INC
Form 10-K
February 29, 2012

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)
OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2011

Commission file number: 1-13105

Arch Coal, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**43-0921172**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification Number)
One CityPlace Drive, Ste. 300, St. Louis, Missouri	**63141**
(Address of principal executive offices)	(Zip code)

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

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $.01 par value	New York Stock Exchange Chicago Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ý No o

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No ý

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such filed). Yes ý No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

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 ý	Accelerated filer o	Non-accelerated filer o	Smaller reporting company o
		(Do not check if a smaller reporting company)	

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes o No ý

The aggregate market value of the voting stock held by non-affiliates of the registrant (excluding outstanding shares beneficially owned by directors, officers and treasury shares) as of June 30, 2011 was approximately $5.6 billion.

On February 15, 2012, 213,292,678 shares of the company's common stock, par value $0.01 per share, were outstanding.

Portions of the registrant's definitive proxy statement for the annual stockholders' meeting to be held on April 26, 2012 are incorporated by reference into Part III of this Form 10-K.

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If you are not familiar with any of the mining terms used in this report, we have provided explanations of many of them under the caption "Glossary of Selected Mining Terms" on page 36 of this report. Unless the context otherwise requires, all references in this report to "Arch," "we," "us," or "our" are to Arch Coal, Inc. and its subsidiaries.

CAUTIONARY STATEMENTS REGARDING FORWARD-LOOKING INFORMATION

This report contains forward-looking statements, within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, such as our expected future business and financial performance, and are intended to come within the safe harbor protections provided by those sections. The words "anticipates," "believes," "could," "estimates," "expects," "intends," "may," "plans," "predicts," "projects," "seeks," "should," "will" or other comparable words and phrases identify forward-looking statements, which speak only as of the date of this report. Forward-looking statements by their nature address matters that are, to different degrees, uncertain. Actual results may vary significantly from those anticipated due to many factors, including:

market demand for coal and electricity;

geologic conditions, weather and other inherent risks of coal mining that are beyond our control;

competition within our industry and with producers of competing energy sources;

excess production and production capacity;

our ability to acquire or develop coal reserves in an economically feasible manner;

inaccuracies in our estimates of our coal reserves;

availability and price of mining and other industrial supplies;

availability of skilled employees and other workforce factors;

disruptions in the quantities of coal produced by our contract mine operators;

our ability to collect payments from our customers;

defects in title or the loss of a leasehold interest;

railroad, barge, truck and other transportation performance and costs;

our ability to successfully integrate the operations that we acquire;

our ability to secure new coal supply arrangements or to renew existing coal supply arrangements;

our relationships with, and other conditions affecting, our customers;

the deferral of contracted shipments of coal by our customers;

our ability to service our outstanding indebtedness;

our ability to comply with the restrictions imposed by our credit facility and other financing arrangements;

the availability and cost of surety bonds;

failure by Magnum Coal Company, which we refer to as Magnum, a subsidiary of Patriot Coal Corporation, to satisfy certain below-market contracts that we guarantee;

our ability to manage the market and other risks associated with certain trading and other asset optimization strategies;

terrorist attacks, military action or war;

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our ability to obtain and renew various permits, including permits authorizing the disposition of certain mining waste;

existing and future legislation and regulations affecting both our coal mining operations and our customers' coal usage, governmental policies and taxes, including those aimed at reducing emissions of elements such as mercury, sulfur dioxides, nitrogen oxides, particulate matter or greenhouse gases;

the accuracy of our estimates of reclamation and other mine closure obligations;

the existence of hazardous substances or other environmental contamination on property owned or used by us; and

the other factors affecting our business described below under the caption "Risk Factors."

All forward-looking statements in this report, as well as all other written and oral forward-looking statements attributable to us or persons acting on our behalf, are expressly qualified in their entirety by the cautionary statements contained in this section and elsewhere in this report. See Item 1A "Risk Factors," Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations" and Item 7A "Quantitative and Qualitative Disclosures About Market Risk" for additional information about factors that may affect our businesses and operating results. These factors are not necessarily all of the important factors that could affect us. These risks and uncertainties, as well as other risks of which we are not aware or which we currently do not believe to be material, may cause our actual future results to be materially different than those expressed in our forward-looking statements. We do not undertake to update our forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law.

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PART I

ITEM 1. BUSINESS.

Introduction

We are one of the world's largest coal producers. For the year ended December 31, 2011 (which includes sales of the former International Coal Group, Inc. after June 14, 2011), we sold approximately 156.9 million tons of coal, including approximately 5.5 million tons of coal we purchased from third parties, representing roughly 14% of the 2011 U.S. coal supply. We sell substantially all of our coal to power plants, steel mills and industrial facilities. At December 31, 2011, we operated, or contracted out the operation of, 46 active mines located in each of the major coal-producing regions of the United States. The locations of our mines and access to export facilities enable us to ship coal to most of the major coal-fueled power plants, industrial facilities and steel mills located within the United States and on four continents worldwide.

Significant federal and state environmental regulations affect the demand for coal. Existing environmental regulations limiting the emission of certain impurities caused by coal combustion and new regulations have had, and are likely to continue to have, a considerable impact on our business.

Our History

We were organized in Delaware in 1969 as Arch Mineral Corporation. In July 1997, we merged with Ashland Coal, Inc., a subsidiary of Ashland Inc. that was formed in 1975. As a result of the merger, we became one of the largest producers of low-sulfur coal in the eastern United States.

In June 1998, we expanded into the western United States when we acquired the coal assets of Atlantic Richfield Company, which we refer to as ARCO. This acquisition included the Black Thunder and Coal Creek mines in the Powder River Basin of Wyoming, the West Elk mine in Colorado and a 65% interest in Canyon Fuel Company, which operates three mines in Utah. In October 1998, we acquired a leasehold interest in the Thundercloud reserve, a 412-million-ton federal reserve tract adjacent to the Black Thunder mine.

In July 2004, we acquired the remaining 35% interest in Canyon Fuel Company. In August 2004, we acquired Triton Coal Company's North Rochelle mine adjacent to our Black Thunder operation. In September 2004, we acquired a leasehold interest in the Little Thunder reserve, a 719-million-ton federal reserve tract adjacent to the Black Thunder mine.

In December 2005, we sold the stock of Hobet Mining, Inc., Apogee Coal Company and Catenary Coal Company and their four associated mining complexes (Hobet 21, Arch of West Virginia, Samples and Campbells Creek) and approximately 455.0 million tons of coal reserves in Central Appalachia to Magnum.

On October 1, 2009, we acquired Rio Tinto's Jacobs Ranch mine complex in the Powder River Basin of Wyoming, which included 345 million tons of low-cost, low-sulfur coal reserves, and integrated it into the Black Thunder mine.

On June 15, 2011, we acquired International Coal Group, Inc., which owned and operated mines primarily in the Appalachian Region of the United States.

Coal Characteristics

In general, end users characterize coal as steam coal or metallurgical coal. Heat value, sulfur, ash, moisture content, and volatility in the case of metallurgical coal, are important variables in the marketing and transportation

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of coal. These characteristics help producers determine the best end use of a particular type of coal. The following is a description of these general coal characteristics:

Heat Value. In general, the carbon content of coal supplies most of its heating value, but other factors also influence the amount of energy it contains per unit of weight. The heat value of coal is commonly measured in Btus. Coal is generally classified into four categories, ranging from lignite, subbituminous, bituminous and anthracite, reflecting the progressive response of individual deposits of coal to increasing heat and pressure. Anthracite is coal with the highest carbon content and, therefore, the highest heat value, nearing 15,000 Btus per pound. Bituminous coal, used primarily to generate electricity and to make coke for the steel industry, has a heat value ranging between 10,500 and 15,500 Btus per pound. Subbituminous coal ranges from 8,300 to 13,000 Btus per pound and is generally used for electric power generation. Lignite coal is a geologically young coal which has the lowest carbon content and a heat value ranging between 4,000 and 8,300 Btus per pound.

Sulfur Content. Federal and state environmental regulations, including regulations that limit the amount of sulfur dioxide that may be emitted as a result of combustion, have affected and may continue to affect the demand for certain types of coal. The sulfur content of coal can vary from seam to seam and within a single seam. The chemical composition and concentration of sulfur in coal affects the amount of sulfur dioxide produced in combustion. Coal-fueled power plants can comply with sulfur dioxide emission regulations by burning coal with low sulfur content, blending coals with various sulfur contents, purchasing emission allowances on the open market and/or using sulfur-dioxide emission reduction technology.

All of our identified coal reserves have been subject to preliminary coal seam analysis to test sulfur content. Of these reserves, approximately 67% consist of compliance coal, while an additional approximately 5% could be sold as low-sulfur coal. The balance is classified as high-sulfur coal. Higher sulfur coal can be burned in plants equipped with sulfur-dioxide emission reduction technology, such as scrubbers, and in facilities that blend compliance and noncompliance coal.

Ash. Ash is the inorganic residue remaining after the combustion of coal. As with sulfur, ash content varies from seam to seam. Ash content is an important characteristic of coal because it impacts boiler performance and electric generating plants must handle and dispose of ash following combustion. The composition of the ash, including the proportion of sodium oxide and fusion temperature, are important characteristics of coal and help determine the suitability of the coal to end users. The absence of ash is also important to the process by which metallurgical coal is transformed into coke for use in steel production.

Moisture. Moisture content of coal varies by the type of coal, the region where it is mined and the location of the coal within a seam. In general, high moisture content decreases the heat value and increases the weight of the coal, thereby making it more expensive to transport. Moisture content in coal, on an as-sold basis, can range from approximately 2% to over 30% of the coal's weight.

Other. Users of metallurgical coal measure certain other characteristics, including fluidity, swelling capacity and volatility to assess the strength of coke produced from a given coal or the amount of coke that certain types of coal will yield. These characteristics may be important elements in determining the value of the metallurgical coal we produce and market.

The Coal Industry

Global Coal Supply and Demand. Recovery from the 2008 upheaval in the global financial markets remained uneven in 2011 with future prospects uncertain because of ongoing sovereign debt problems, mostly centered in the European Union. Economic growth rates were also uneven with emerging economies continuing to show relative strength, while advanced economies generally experienced only modest growth. International coal demand continued to show strength through the year; however, there were some signs of weakness toward the end of the year. The

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United States exported an estimated 107 million tons in 2011, based on Energy Information Administration data, the highest level since 1991.

Coal is traded globally and can be transported to demand centers by ship, rail, barge, and truck. Total hard coal production in 2010 increased 6.8% over 2009 to 6.2 billion tonnes, while global production of brown coal was relatively flat at 1.04 billion tonnes in 2010, according to the International Energy Agency (IEA). China remains the largest producer of coal in the world, producing over 3.16 billion tonnes in 2010, according to the IEA. The United States and India follow China with hard coal production of approximately 932 million tonnes and 538 million tonnes, respectively, in 2010. Despite being the largest producer of hard coal globally, China surpassed Japan in 2011 as the largest importer of coal with imports of more than 180 million tonnes. Japan imported 175 million tonnes, followed by South Korea with 125 tonnes. Total global cross-border hard coal trade rose in 2011 to over 1.2 billion tons.

Global coal demand grew by more than 11% in 2010. Power generation remains the main driver of global coal demand as projected in all of the IEA's World Energy Outlook scenarios. China and India account for over 67% of the projected demand increase in the IEA's New and Current Policies scenarios. Metallurgical or coking coal is used in the steel making process. The steel industry uses metallurgical coal, which is distinguishable from other types of coal by its high carbon content, low expansion pressure, low sulfur content and various other chemical attributes. As such, the price offered by steel makers for metallurgical coal is generally higher than the price offered by power plants and industrial users for steam coal. Coal is used in nearly 70% of global steel production. In 2011, approximately 1.5 billion tonnes of steel was produced, a 6.8% increase over 2010 and up nearly 23% over 2009's reduced levels.

Among the nations principally supplying coal to the global power and steel markets are Australia, historically the world's largest coal exporter with exports of approximately 300 million tonnes in 2010, as well as Indonesia, Russia, United States, Colombia, and South Africa. Indonesia, in particular, has seen substantial growth in its coal exports in the last few years; however, its growing domestic energy demand may result in a decrease in exports as it moves toward greater self-sufficiency. Total United States exports continued to grow in 2011 as discussed below, up approximately 30% over 2010 as global economic conditions improved and pressure remained on global coal supply networks. We expect continued improvements in the demand for U.S. coal exports as economic growth continues, especially in the Asia-Pacific region, and as traditional supply movements adjust to meet the Asia-Pacific region's demands.

U.S. Coal Consumption. In the United States, coal is used primarily by power plants to generate electricity, by steel companies to produce coke for use in blast furnaces and by a variety of industrial users to heat and power foundries, cement plants, paper mills, chemical plants and other manufacturing or processing facilities. Coal consumption in the United States increased from 398.1 million tons in 1960 to approximately 1.0 billion tons in 2011, according to the Energy Information Administration's (EIA) Short Term Energy Outlook. Although full-year data for 2011 is not yet available, coal consumption has improved over what was lost during the global downturn that affected U.S. coal consumption in 2009. In 2010, coal consumption in the United States improved through stronger electricity demand driven by both a recovering economy and favorable weather.

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The following chart shows historical and projected demand trends for U.S. coal by consuming sector for the periods indicated, according to the EIA:

Sector	Actual 2006	Estimated 2011	Forecast 2012	Forecast 2020	Forecast 2035	Annual Growth 2009-2035
			(Tons, in millions)			
Electric power	1,027	945	925	989	1,119	0.7%
Other industrial	59	49	48	49	47	0.1%
Coke plants	23	24	24	22	18	0.6%
Residential/commercial	3	3	4	3	3	-0.2%
Coal-to-liquids				13	128	n/a
Total U.S. coal consumption	1,112	1,020	1,002	1,076	1,315	1.1%

Source: EIA Annual Energy Outlook 2011
EIA Short Term Energy Outlook (January 2012)
EIA Monthly Energy Review (December 2011)

According to the EIA, coal accounted for approximately 42% of U.S. electricity generation from January through November 2011, and based on a projected 25% growth in electricity demand, coal consumption by the electric industry is expected to grow about 18% by 2035, reaching 1.1 billion tons. These amounts assume no future federal or state carbon emissions legislation is enacted and do not take into account subsequent market conditions. Historically, coal has been considerably less expensive than natural gas or oil.

The following chart shows the breakdown of U.S. electricity generation by energy source for January through November 2011, according to the EIA:

Source: EIA Electric Power Monthly (January 2012).

The average spot price for West Texas Intermediate oil in the United States averaged $94.86/barrel in 2011, and, according to the EIA, will increase to $100.25/barrel in 2012. Historically, volatile oil prices and global energy security concerns have increased interest in converting coal into liquid fuel, a process known as liquefaction. Liquid fuel produced from coal can be further refined to produce transportation fuels, such as low-sulfur diesel fuel, gasoline and other oil products, such as plastics and solvents. Currently, there are only a limited number of projects moving forward at this time.

U.S. Coal Production. The United States is the second largest coal producer in the world, exceeded only by China. According to the EIA, there is over 200 billion tons of recoverable coal in the United States. The U.S. Department of Energy estimates that current domestic recoverable coal reserves could supply enough electricity to

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satisfy domestic demand for approximately 200 years. Annual coal production in the United States has increased from 434 million tons in 1960 to approximately 1.1 billion tons in 2011.

Coal is mined from coal fields throughout the United States, with the major production centers located in the western United States, the Appalachian region and the Illinois Basin.

Major regions in the West include the Powder River Basin and the Western Bituminous region. According to the EIA, coal produced in the western United States increased from 408 million tons in 1994 to an estimated 638 million tons in 2011, as competitive mining costs and regulations limiting sulfur-dioxide emissions have continued to increase demand for low-sulfur coal over this period. The Powder River Basin is located in northeastern Wyoming and southeastern Montana. Coal from this region is sub-bituminous coal with low sulfur content ranging from 0.2% to 0.9% and heating values ranging from 8,000 to 9,500 Btu. The price of Powder River Basin coal is generally less than that of coal produced in other regions because Powder River Basin coal exists in greater abundance and is easier to mine and, thus, has a lower cost of production. In addition, Powder River Basin coal is generally lower in heat value, which requires some electric power generation facilities to blend it with higher Btu coal or retrofit some existing coal plants to accommodate lower Btu coal. The Western Bituminous region includes Colorado, Utah and southern Wyoming. Coal from this region typically has low sulfur content ranging from 0.4% to 0.8% and heating values ranging from 10,000 to 12,200 Btu.

Regions in the East include the north, central and southern Appalachian regions. According to the EIA, coal produced in the Appalachian region decreased from 445 million tons in 1994 to an estimated 339 million tons in 2011, primarily as a result of the depletion of economically attractive reserves, permitting issues, availability of lower cost competitive fuels, and increasing costs of production. Central Appalachia includes eastern Kentucky, Tennessee, Virginia and southern West Virginia. Coal mined from this region generally has a high heat value ranging from 11,400 to 13,200 Btu and a low sulfur content ranging from 0.2% to 2.0%. Northern Appalachia includes Maryland, Ohio, Pennsylvania and northern West Virginia. Coal from this region generally has a high heat value ranging from 10,300 to 13,500 Btu and a high sulfur content ranging from 0.8% to 4.0%. Southern Appalachia primarily covers Alabama and generally has a heat content ranging from 11,300 to 12,300 Btu and a sulfur content ranging from 0.7% to 3.0%.

The Illinois Basin includes Illinois, Indiana and western Kentucky and is the major coal production center in the interior region of the United States. According to the EIA, coal produced in the interior region decreased from 180 million tons in 1994 to approximately 166 million tons in 2011. Coal from the Illinois Basin generally has a heat value ranging from 10,100 to 12,600 Btu and has a high sulfur content ranging from 1.0% to 4.3%. Despite its high sulfur content, coal from the Illinois basin can generally be used by electric power generation facilities that have installed pollution control devices, such as scrubbers, to reduce emissions.

U.S. Coal Exports and Imports. U.S exports increased substantially in 2011 compared to 2010, supported by recovering global economies and continued growth in Chinese and Indian steel markets in particular. According to the EIA, exports of U.S. coal grew from 81 million tons in 2010 to 107 million tons in 2011. This is a trend we expect to continue as demand for U.S. coal grows in the seaborne market. Interest in access to the coal markets overseas has fueled considerable growth in developing new port capacity in the United States. We, along with other parties, have announced expanded or new port projects on the east coast, the Gulf coast and the west coast.

Historically, coal imported from abroad has represented a relatively small share of total U.S. coal consumption, and this remained the case in 2011. Imports did reach close to 36 million tons in 2007, but have fallen since then. According to the EIA, coal imports declined from 19 million tons in 2010 to 14 million in 2011. The decline is mostly attributed to more competitive pricing for domestic coal and stronger demand from non-U.S. markets for seaborne coal. Coal is imported into the United States primarily from Colombia, Indonesia and Venezuela. Imported coal generally serves coastal states along the Gulf of Mexico, such as Alabama and Florida, and states along the eastern seaboard. We expect imports into the United States to continue to decrease in the near-term as more and more global coal will likely be directed to Asia.

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Coal Mining Methods

The geological characteristics of our coal reserves largely determine the coal mining method we employ. We use two primary methods of mining coal: surface mining and underground mining.

Surface Mining. We use surface mining when coal is found close to the surface. We have included the identity and location of our surface mining operations below under "Our Mining Operations General." In 2011, approximately 81% of the coal that we produced came from surface mining operations.

Surface mining involves removing the topsoil then drilling and blasting the overburden (earth and rock covering the coal) with explosives. We then remove the overburden with heavy earth-moving equipment, such as draglines, power shovels, excavators and loaders. Once exposed, we drill, fracture and systematically remove the coal using haul trucks or conveyors to transport the coal to a preparation plant or to a loadout facility. We reclaim disturbed areas as part of our normal mining activities. After final coal removal, we use draglines, power shovels, excavators or loaders to backfill the remaining pits with the overburden removed at the beginning of the process. Once we have replaced the overburden and topsoil, we reestablish vegetation and plant life into the natural habitat and make other improvements that have local community and environmental benefits.

The following diagram illustrates a typical dragline surface mining operation:

Underground Mining. We use underground mining methods when coal is located deep beneath the surface. We have included the identity and location of our underground mining operations in the table "Our Mining Operations General." In 2011, approximately 19% of the coal that we produced came from underground mining operations.

Our underground mines are typically operated using one or both of two different mining techniques: longwall mining and room-and-pillar mining.

Longwall Mining. Longwall mining involves using a mechanical shearer to extract coal from long rectangular blocks of medium to thick seams. Ultimate seam recovery using longwall mining techniques can exceed 75%. In

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longwall mining, we use continuous miners to develop access to these long rectangular coal blocks. Hydraulically powered supports temporarily hold up the roof of the mine while a rotating drum mechanically advances across the face of the coal seam, cutting the coal from the face. Chain conveyors then move the loosened coal to an underground mine conveyor system for delivery to the surface. Once coal is extracted from an area, the roof is allowed to collapse in a controlled fashion. In 2011, approximately 14% of the coal that we produced came from underground mining operations generally using longwall mining techniques.

The following diagram illustrates a typical underground mining operation using longwall mining techniques:

Room-and-Pillar Mining. Room-and-pillar mining is effective for small blocks of thin coal seams. In room-and-pillar mining, we cut a network of rooms into the coal seam, leaving a series of pillars of coal to support the roof of the mine. We use continuous miners to cut the coal and shuttle cars to transport the coal to a conveyor belt for further transportation to the surface. The pillars generated as part of this mining method can constitute up to 40% of the total coal in a seam. Higher seam recovery rates can be achieved if retreat mining is used. In retreat mining, coal is mined from the pillars as workers retreat. As retreat mining occurs, the roof is allowed to collapse in a controlled fashion. We currently conduct retreat mining in certain underground mines. In 2011, the quantities of coal we recovered from retreat mining represented an insignificant portion of our total coal production. Once we finish mining in an area, we generally abandon that area and seal it from the rest of the mine.

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The following diagram illustrates our typical underground mining operation using room-and-pillar mining techniques:

Coal Preparation and Blending. We crush the coal mined from our Powder River Basin mining complexes and ship it directly from our mines to the customer. Typically, no additional preparation is required for a saleable product. Coal extracted from some of our underground mining operations contains impurities, such as rock, shale and clay occupying in a wide range of particle sizes. The majority of our mining operations in the Appalachia region and a few of our mines in the Western Bituminous region use a coal preparation plant located near the mine or connected to the mine by a conveyor. These coal preparation plants allow us to treat the coal we extract from those mines to ensure a consistent quality and to enhance its suitability for particular end-users. In addition, depending on coal quality and customer requirements, we may blend coal mined from different locations, including coal produced by third parties, in order to achieve a more suitable product.

The treatments we employ at our preparation plants depend on the size of the raw coal. For coarse material, the separation process relies on the difference in the density between coal and waste rock where, for the very fine fractions, the separation process relies on the difference in surface chemical properties between coal and the waste minerals. To remove impurities, we crush raw coal and classify it into various sizes. For the largest size fractions, we use dense media vessel separation techniques in which we float coal in a tank containing a liquid of a pre-determined specific gravity. Since coal is lighter than its impurities, it floats, and we can separate it from rock and shale. We treat intermediate sized particles with dense medium cyclones, in which a liquid is spun at high speeds to separate coal from rock. Fine coal is treated in spirals, in which the differences in density between coal and rock allow them, when suspended in water, to be separated. Ultra fine coal is recovered in column flotation cells utilizing the differences in surface chemistry between coal and rock. By injecting stable air bubbles through a suspension of ultra fine coal and rock, the coal particles adhere to the bubbles and rise to the surface of the column where they are removed. To minimize the moisture content in coal, we process most coal sizes through centrifuges. A centrifuge spins coal very quickly, causing water accompanying the coal to separate.

For more information about the locations of our preparation plants, you should see the section entitled "Our Mining Operations" below.

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Our Mining Operations

General. At December 31, 2011, we operated, or contracted out the operation of, 46 mines in the United States. We have three reportable business segments, which are based on the major coal producing basins in which the Company operates. The Company's reportable segments are the Powder River Basis (PRB) segment, with operations in Wyoming; the Western Bituminous (WBIT) segment, with operations in Utah, Colorado and southern Wyoming; the Appalachia (APP) segment, with operations in West Virginia, Kentucky, Maryland and Virginia; and our Other segment, which includes our operations in Illinois. Each of these reportable business segments includes a number of mine complexes. Geology, coal transportation routes to consumers, regulatory environments and coal quality are characteristic to a basin. These regional distinctions have caused market and contract pricing environments to develop by coal region and form the basis for the segmentation of our operations. We incorporate by reference the information about the operating results of each of our segments for the years ended December 31, 2011, 2010 and 2009 contained in Note 24 beginning on page F-45.

In general, we have developed our mining complexes and preparation plants at strategic locations in close proximity to rail or barge shipping facilities. Coal is transported from our mining complexes to customers by means of railroads, trucks, barge lines, and ocean-going vessels from terminal facilities. We currently own or lease under long-term arrangements a substantial portion of the equipment utilized in our mining operations. We employ sophisticated preventative maintenance and rebuild programs and upgrade our equipment to ensure that it is productive, well-maintained and cost-competitive. Our maintenance programs also employ procedures designed to enhance the efficiencies of our operations.

The following map shows the locations of our mining operations:

The following table provides a summary of information regarding our active mining complexes at December 31, 2011, the total sales associated with these complexes for the years ended December 31, 2009, 2010 and 2011, the total reserves associated with these complexes at December 31, 2011 and the Company's total

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unassigned reserves as of December 31, 2011. As indicated by the footnotes included in the table below, certain of the mining complexes listed below were acquired by us on June 15, 2011 as a result of our acquisition of International Coal Group, Inc. The amount disclosed below for the total cost of property, plant and equipment of each mining complex does not include the costs of the coal reserves that we have assigned to an individual complex. The information included in the following table describes in more detail our mining operations, the coal mining methods used, certain characteristics of our coal and the method by which we transport coal from our mining operations to our customers or other third parties.

Mining Complex	Captive Mines[1]	Contract Mines[1]	Mining Equipment	Railroad	Tons Sold[2]			Total Cost of Property, Plant and Equipment at December 31, 2011	Assigned Reserves (Million tons)
					2009	2010	2011		
					(Million tons)			($ in millions)	
Powder River Basin:									
Black Thunder	S		D, S	UP/BN	81.2	116.2	104.9	$1,147.4	1,298.0
Coal Creek	S		D, S	UP/BN	9.8	11.4	10.0	155.5	176.2
Western Bituminous:									
Arch of Wyoming	S		L	UP	0.1	0.1	0.1	22.7	
Dugout Canyon	U		LW, CM	UP	3.2	2.3	2.2	140.5	15.0
Skyline	U		LW, CM	UP	2.8	2.9	2.9	189.3	15.2
Sufco	U		LW, CM	UP	6.6	6.1	6.1	232.1	48.6
West Elk	U		LW, CM	UP	4.0	4.8	5.7	480.0	88.3
Appalachia:									
Coal-Mac	S	U	L, E	NS/CSX	2.9				