

**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, 2022

or

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

Commission file number: 1-13105



Arch Resources, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

**1 CityPlace Drive
Suite 300
St. Louis
Missouri**

(Address of principal executive offices)

43-0921172
(I.R.S. Employer
Identification Number)

63141
(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	Trading Symbol	Name of Each Exchange on Which Registered
Common Stock, \$.01 par value	ARCH	New York 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 No

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 No

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 No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

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

The aggregate market value of the voting stock held by non-affiliates of the registrant (excluding outstanding shares beneficially owned by directors, officers, other affiliates and treasury shares) as of **June 30, 2022** was approximately \$2,654.7 million.

At January 31, 2023 there were 17,510,434 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission in connection with the 2022 annual stockholders' meeting 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 37 of this report. Unless the context otherwise requires, all references in this report to “Arch,” the Company,” “we,” “us,” or “our” are to Arch Resources, 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:

- loss of availability, reliability and cost-effectiveness of transportation facilities and fluctuations in transportation costs;
- inflationary pressures and availability and price of mining and other industrial supplies;
- changes in coal prices, which may be caused by numerous factors beyond our control, including changes in the domestic and foreign supply of and demand for coal and the domestic and foreign demand for steel and electricity;
- volatile economic and market conditions;
- operating risks beyond our control, including risks related to mining conditions, mining, processing and plant equipment failures or maintenance problems, weather and natural disasters, the unavailability of raw materials, equipment or other critical supplies, mining accidents, and other inherent risks of coal mining that are beyond our control;
- the effects of foreign and domestic trade policies, actions or disputes on the level of trade among the countries and regions in which we operate, the competitiveness of our exports, or our ability to export;
- competition, both within our industry and with producers of competing energy sources, including the effects from any current or future legislation or regulations designed to support, promote or mandate renewable energy sources;
- alternative steel production technologies that may reduce demand for our coal;
- our ability to secure new coal supply arrangements or to renew existing coal supply arrangements;
- the loss of, or significant reduction in, purchases by our largest customers;
- disruptions in the supply of coal from third parties;
- risks related to our international growth;
- our relationships with, and other conditions affecting our customers and our ability to collect payments from our customers;
- the availability and cost of surety bonds; including potential collateral requirements;
- additional demands for credit support by third parties and decisions by banks, surety bond providers, or other counterparties to reduce or eliminate their exposure to the coal industry;

- inaccuracies in our estimates of our coal reserves;
- defects in title or the loss of a leasehold interest;
- losses as a result of certain marketing and asset optimization strategies;
- cyber-attacks or other security breaches that disrupt our operations, or that result in the unauthorized release of proprietary, confidential or personally identifiable information;
- our ability to acquire or develop coal reserves in an economically feasible manner;
- our ability to pay dividends or repurchase shares of our common stock according to our announced intent or at all;
- the loss of key personnel or the failure to attract additional qualified personnel and the availability of skilled employees and other workforce factors;
- impacts of the COVID-19 pandemic;
- 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;
- increased pressure from political and regulatory authorities, along with environmental and climate change activist groups, and lending and investment policies adopted by financial institutions and insurance companies to address concerns about the environmental impacts of coal combustion;
- increased attention to environmental, social or governance matters ("ESG");
- our ability to obtain and renew various permits necessary for our mining operations;
- risks related to regulatory agencies ordering certain of our mines to be temporarily or permanently closed under certain circumstances;
- risks related to extensive environmental regulations that impose significant costs on our mining operations, and could result in litigation or material liabilities;
- 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;
- risks related to tax legislation and our ability to use net operating losses and certain tax credits; and
- other factors, including those discussed in "Legal Proceedings", set forth in Item 3 of this report and "Risk Factors," set forth in Item 1A of this report.

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. 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. These forward-looking statements speak only as of the date on which such statements were made, and 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 the federal securities laws.

PART I

ITEM 1. BUSINESS

Introduction

We are one of the world's largest coal producers and a premier producer of metallurgical coal. For the year ended December 31, 2022, we sold approximately 78 million tons of coal, including approximately 0.1 million tons of coal we purchased from third parties. We sell substantially all of our coal to steel mills, power plants and industrial facilities. At December 31, 2022, we operated 7 active mines located in three 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 worldwide. We incorporate by reference the information about the geographical breakdown of our coal sales for the respective periods covered within this Form 10-K contained in Note 23 to the Consolidated Financial Statements, "Risk Concentrations."

Business Strategy

We are a leading United States producer of metallurgical products for the global steel industry, and the leading supplier of premium High-Vol A metallurgical coal globally. We operate four large, modern metallurgical mines that consistently set the industry standard for both mine safety and environmental stewardship. Leer and Leer South longwall mines anchor our large-scale, first quartile metallurgical franchise. The Leer franchise consistently ranks among the lowest cost and produces a product quality that is recognized and sought-after worldwide. The Leer and Leer South operations are complemented by the Beckley and Mountain Laurel mines, which in aggregate provide us with a full suite of high-quality metallurgical products for sale into the global metallurgical market.

Arch and its subsidiaries also operate thermal mines in the Powder River Basin and Colorado. These mines produce thermal coal for sale into the domestic and international power generation markets as well as industrial applications. We intend on completing our strategic transition towards steel and metallurgical markets, while managing the long-term wind-down of our legacy thermal assets in the Powder River Basin and Colorado including considering the needs of our thermal employee base, the communities in which we operate, and thermal power customers. We remain confident that the thermal mines will self-fund their own closure obligations while at the same time providing significant, incremental cash flow that will complement the strong cash-generating capabilities of our core metallurgical franchise.

We believe that our long-term success depends upon achieving excellence in mine safety and environmental stewardship; conducting business in a most ethical and transparent manner; investing in our people and the communities in which we operate; and demonstrating strong corporate governance. With our strategic shift towards metallurgical products – which are an essential input in the production of new steel – we have aligned our value proposition to reflect the global economy's intensifying focus on de-carbonization. In 2021, we joined Responsible Steel, the steel industry's first global not-for-profit multi-stakeholder standard and certification initiative. We are the first and only U.S. metallurgical coal producer to join the organization to date.

We are a demonstrated leader in mine safety, with an average lost-time incident rate during the past five years that is nearly 2.5 times better than the industry average. Our subsidiaries have won 10 Sentinels of Safety awards — the nation's highest honor for excellence in mine safety — in the past 11 years.

In the environmental arena, our subsidiaries received one notice of violation in 2022 after achieving a perfect compliance record in 2021, with zero notices of violation from state mining regulators. In each of the previous four years — from 2017 through 2020 — we received just one notice of violation, versus an average of 16 annually by 10 of our largest U.S. competitors. In the area of water management, our subsidiaries took more than 84,000 water quality measurements in 2022 and recorded zero exceedances for a 100 percent compliance record for the second year in a row.

Coal Characteristics

End users generally characterize coal as thermal 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 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, 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.

Ash. Ash is the inorganic material 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, is also an important characteristic of coal, as it helps to 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, volatility, and swelling capacity 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 are important elements in determining the value of the metallurgical coal we produce and market.

Industry Overview

Background. Coal is mined globally using various methods of surface and underground recovery. Coal is primarily used for steel production and electric power generation, but it is also used for certain industrial processes such as cement production. Coal is a globally marketed commodity and can be transported to demand centers by ocean-going vessels, barge, rail, truck or conveyor belt.

In 2022, world coal production recovered from the COVID-19 pandemic related supply and demand disruptions experienced in 2020. An expansionary economic environment was supportive of coal fundamentals in 2022. Based on industry data and internal estimates, we believe world coal production increased around 5% in 2022 to approximately 8.5 billion metric tons. Global coal production likely reached an all-time high in 2022.

China is the largest producer of coal in the world accounting for about 50% of total production. According to the Chinese National Bureau of Statistics, China produced around 4.5 billion metric tons of coal in 2022. Other major coal producing countries are India, Indonesia, the United States, Australia, Colombia, South Africa and Russia. India, the world's second biggest cost producer, could reach 1 billion metric tons of production before 2025. In 2022, U.S. coal production increased by approximately 3% to 540 million metric tons, after increasing around 8% in 2021 to around 525 million metric tons mainly due to lower demand for power generation and subdued exports. U.S. coal production has been roughly halved in the past decade as coal-fired generation demand has continued to decrease. The U.S. is now the fourth largest producer after having been surpassed by India and Indonesia in the past decade.

Steel is produced via two main methods: basic oxygen furnace (BOF) and electric arc furnace (EAF). EAF steelmaking produces steel by using an electrical current to melt scrap steel, while BOF steelmaking relies on coke and iron ore as key inputs to produce pig iron, which is then converted into steel. Metallurgical coal is a key part of the BOF process as it is used to make coke.

Approximately 71% of global steel is produced via the BOF steelmaking process, while in the United States, BOF accounts for around 30% of steel production. The main steel producing countries are China, India, Japan, United States, Russia, South Korea, Turkey, Germany, Brazil, and Italy. Arch sells high-quality metallurgical coal products that are essential inputs for BOF steel production worldwide. Our focus is to be a premier low-cost, metallurgical coal supplier to the global steel industry.

As economic activity recovered from the COVID-19 driven economic slowdown, so did steel production. After falling sharply in 2020, steel production rebounded broadly in 2021. In 2022, world steel production is expected to decrease around 4% due to global recessionary fears, inflationary pressures and the Ukraine-Russia war. The World Steel Association forecasts a steel demand contraction in 2022 in most of the major global regions, including Europe, South America, and Asia. Chinese steel production decreased around 2% in 2022, due to government-imposed production controls and its "Zero COVID" policy.

Global trade of metallurgical coal was also affected by the pandemic, and recovered in 2021. We estimate metallurgical coal import-export trade flows improved slightly in 2022 from 2021 levels. A full restoration of trade volumes back to pre-pandemic levels might not take place until 2023 due to factors that continue to affect the industry including weather, geological issues, workforce absenteeism, supply chain constraints, transportation reliability and lingering COVID-19 effects. The primary nations that supply seaborne metallurgical coal to the global steel markets are Australia, the United States, Canada, and Russia.

Australia is the largest metallurgical coal exporter and the second largest thermal coal exporter. Towards the end of 2020, China implemented a ban on coal imports from Australia. This ban imposed by the key importer of coal on the key exporter of coal rearranged historical global trade patterns in 2022. The ban on the import of Australian coal opened up further the Chinese markets to United States coal suppliers in 2022. It is difficult to predict the duration of the ban; however, there have been some indications by industry participants that the ban might end in 2023. In 2022, Australian coal exports are expected to fall to the lowest level in 12 years based on preliminary trade data.

We rank among the largest metallurgical coal producers in the United States. Based on internal estimates, we produced around 12% of total U.S. metallurgical coal supply, which was estimated to be around 65 million tons in 2022. Our metallurgical coal was sold to five North American customers and exported to 34 customers overseas in 18 countries in 2022.

All of our metallurgical coal is produced at operations in West Virginia. Approximately 50% of the metallurgical coal produced in the United States is produced in West Virginia. Carbon content, volatility, fluidity, coke strength after reaction (CSR), and other chemical and physical properties are among critical characteristics for metallurgical coal.

We produce coal used for electric power generation (thermal) from our mines located in Wyoming and Colorado. The European energy crisis, which was exacerbated by the Ukraine-Russia war, contributed to strong demand for our thermal coal products from international buyers in 2022. The European Union, which has traditionally been a

major market for Russian coals, imposed a ban on Russian coals as of August 2022. Limited global investments in thermal coal supply, weather events, a lack of qualified labor availability, and other factors limited the supply response, which resulted in record prices for domestic and international markets.

Much of our coal is sold at the mine where title and risk of loss transfer to the customer as coal is loaded into the railcar or truck. Customers are generally responsible for transportation - typically using third party carriers. There are, however, some agreements where we retain responsibility for the coal during delivery to the customer site or intermediate terminal. Our export coals usually change title and risk of loss as the coal is loaded on a vessel. Normally we contract for transportation services from the mine to the ocean loading port. On occasion, we retain title to the coal to the ocean receiving port.

In 2022, approximately 90% of our coal volumes were sold as thermal products with the remaining 10% sold as metallurgical products. However, due to the significantly higher value and selling price of our metallurgical coals compared to thermal coals, our metallurgical segment contributed around 58% of our total sales revenue in 2022.

We seek to establish long-term relationships with customers through exemplary customer service while operating safe and environmentally responsible mines. The commercial environment in which we operate is very competitive. We compete with domestic and international coal producers, traders or brokers, and non-coal based power producers, as well as with electric arc-based steel producers. We compete using price, coal quality, transportation, optionality, customer administration, reputation, and reliability.

We have an experienced and knowledgeable sales and marketing group. This group is dedicated to meeting customer needs, coordinating transportation, and managing risk.

Coal prices are tied to competing fuel sources as well as supply and demand patterns, which are influenced by many uncontrollable factors. For power generation, the price of coal is affected by the relative supply and demand of competitive coal, transportation, availability, weather, competing power generation fuels particularly natural gas, governmental subsidies of alternate energy sources, regulations and economic conditions. For metallurgical coal, the price of coal is affected by the supply and demand of competitive coal, transportation, the price of steel, the price of scrap, demand for steel, transportation rates, strength of the U.S. dollar, regulations, international trade disputes and economic conditions.

U.S. Coal Production. The United States is among the top four largest coal producers in the world. According to the U.S. Energy Information Administration (EIA), there are over 250 billion short tons of recoverable coal reserves in the United States. Current domestic recoverable coal reserves could supply the coal-fired generation fleet for the next 450 years, based on current demand.

The EIA subdivides United States coal production into three major areas: Western Region, Appalachia, and Interior Region. According to the preliminary information from EIA, total U.S. coal production increased by an estimated 15 million short tons in 2022, to around 595 million short tons.

The Western Region includes the Powder River Basin and the Western Bituminous region. According to the EIA, coal produced in the Western Region increased from approximately 330 million short tons in 2021 to around 345 million short tons in 2022. The Powder River Basin is located in northeastern Wyoming and southeastern Montana and is the largest producing region in the United States. Coal from this region is sub-bituminous coal with low sulfur content ranging from 0.2% to 0.9% and heating values ranging from 8,300 to 9,500 BTU/lb. Powder River Basin coal generally has a lower heat content than other regions and is produced from thick seams using surface recovery methods. 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/lb. Western Bituminous coal has certain quality characteristics, especially its higher heat content and low sulfur, that make this a desirable coal for domestic and international power producers.

Appalachia is divided into north, central and southern regions. According to the EIA, coal produced in the Appalachian region increased slightly from approximately 155 million short tons in 2021 to around 160 million short tons in 2022. Appalachian coal is located near the prolific eastern shale-gas producing regions. Central Appalachian thermal coal is disadvantaged for power generation because of the depletion of economically attractive reserves, increasing costs of production, and permitting issues. However, virtually all U.S. metallurgical coal is produced in Appalachia and the relative scarcity and high quality of this coal allows for a pricing premium over thermal coal. Appalachia, while still a major producer of thermal coal, is undergoing a shift towards heavier reliance on metallurgical coal production for both domestic and international use. This is especially the case in Central Appalachia.

Northern Appalachia includes Pennsylvania, Northern West Virginia, Ohio and Maryland. Coal from this region generally has a high heat value ranging from 10,300 to 13,500 BTU/lb and a sulfur content ranging from 0.8% to 4.0%. Central Appalachia includes Southern West Virginia, Virginia, Kentucky and Northern Tennessee. Coal mined from this region generally has a high heat value ranging from 11,400 to 13,200 BTU/lb and low sulfur content ranging from 0.2% to 2.0%. Southern Appalachia primarily covers Alabama and generally has a heat content ranging from 11,300 to 12,300 BTU/lb and a sulfur content ranging from 0.7% to 3.0%. Southern Appalachia mines are primarily focused on metallurgical markets.

The Interior Region includes the Illinois Basin and Gulf Lignite production in Texas and Louisiana, and a small producing area in Kansas, Oklahoma, Missouri and Arkansas. The Illinois Basin is the largest producing region in the Interior and consists of Illinois, Indiana and western Kentucky. According to the EIA, coal produced in the Interior Region decreased from approximately 95 million short tons in 2021 to around 90 million short tons in 2022. Coal from the Illinois Basin generally has a heat value ranging from 10,100 to 12,600 BTU/lb and has a 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 emissions control devices, such as scrubbers.

Coal Mining Methods

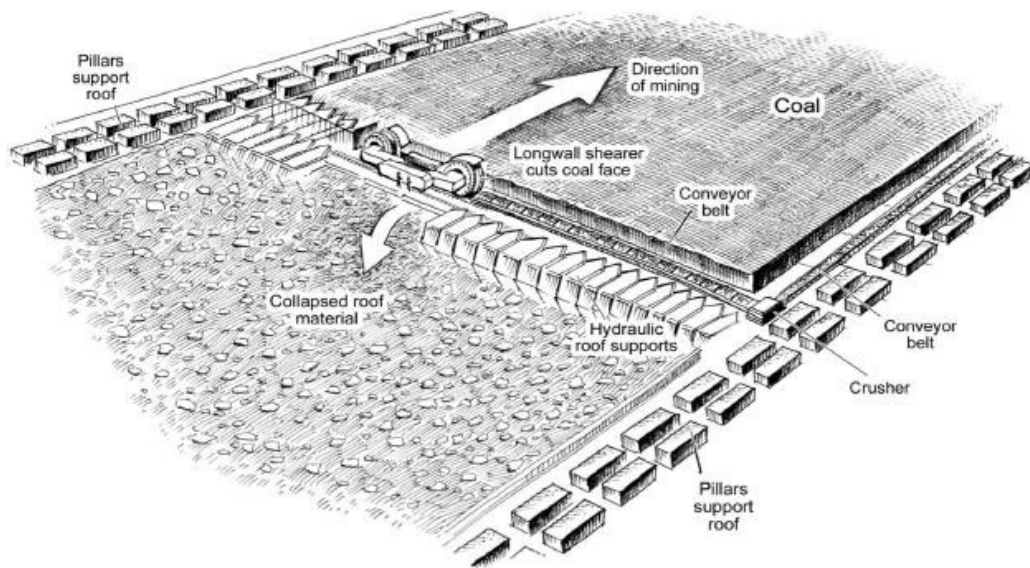
The geological characteristics of our coal reserves largely determine the coal mining method we employ. We use two primary methods of mining coal: underground mining and surface mining.

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 below under “Our Mining Operations-General.”

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

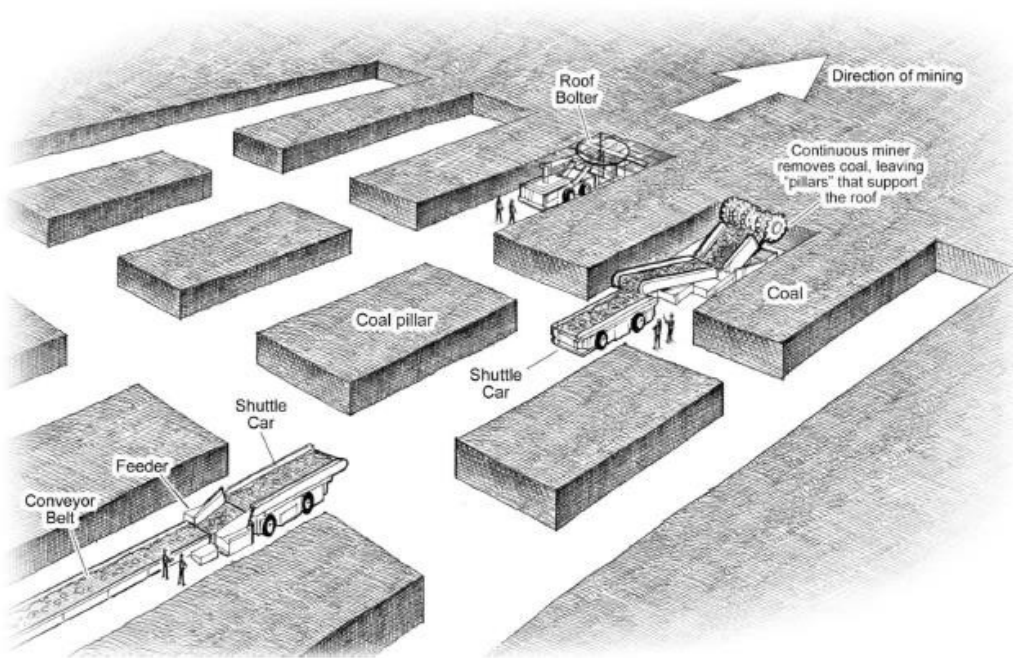
Longwall Mining. Longwall mining involves using a mechanical shearer to extract coal from long rectangular blocks of medium to thick seams. Ultimate seam recovery using longwall mining techniques can exceed 75%. In longwall mining, continuous miners are used to develop access to these long rectangular 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. 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 or larger blocks of thicker coal that has more variable geologic conditions. In room-and-pillar mining, a network of rooms is cut into the coal seam, leaving a series of pillars of coal to support the roof of the mine. Continuous miners are used to cut the coal and shuttle cars are used 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.

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 a wide range of particle sizes. All of our mining operations in the Appalachia 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.

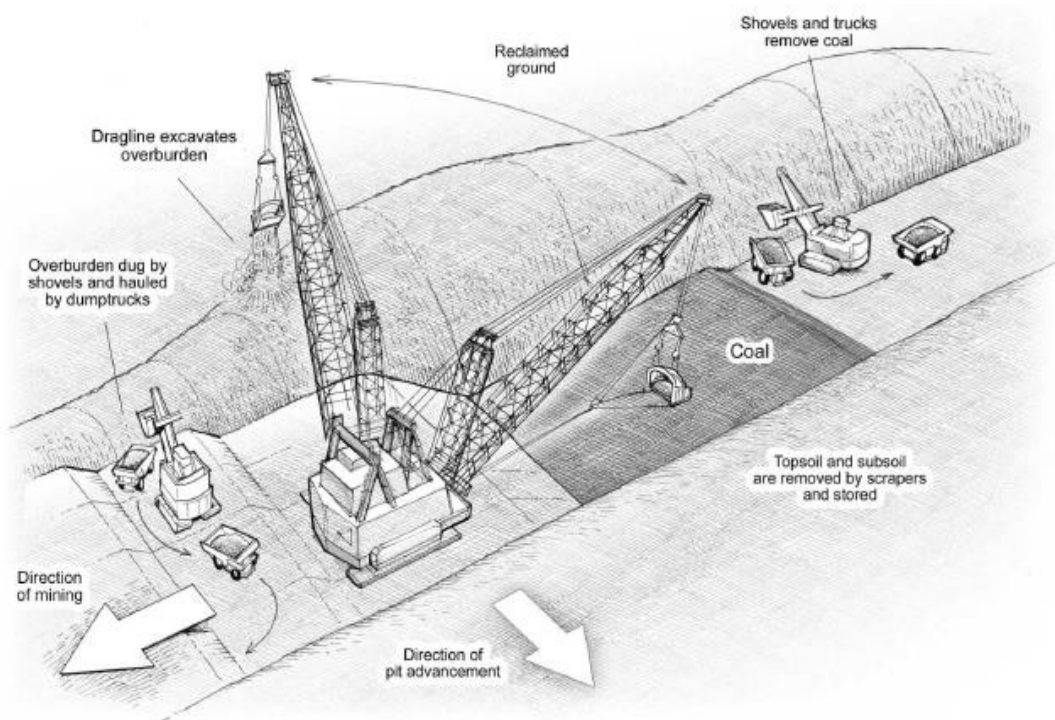
The treatments we employ at our preparation plants depend on the size of the raw coal. For coarse material, the separation process relies on the difference in the density between coal and waste rock and, for the very fine fractions, the separation process relies on the difference in surface chemical 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.”

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.” The majority of the thermal coal we produce comes 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:



Our Mining Operations

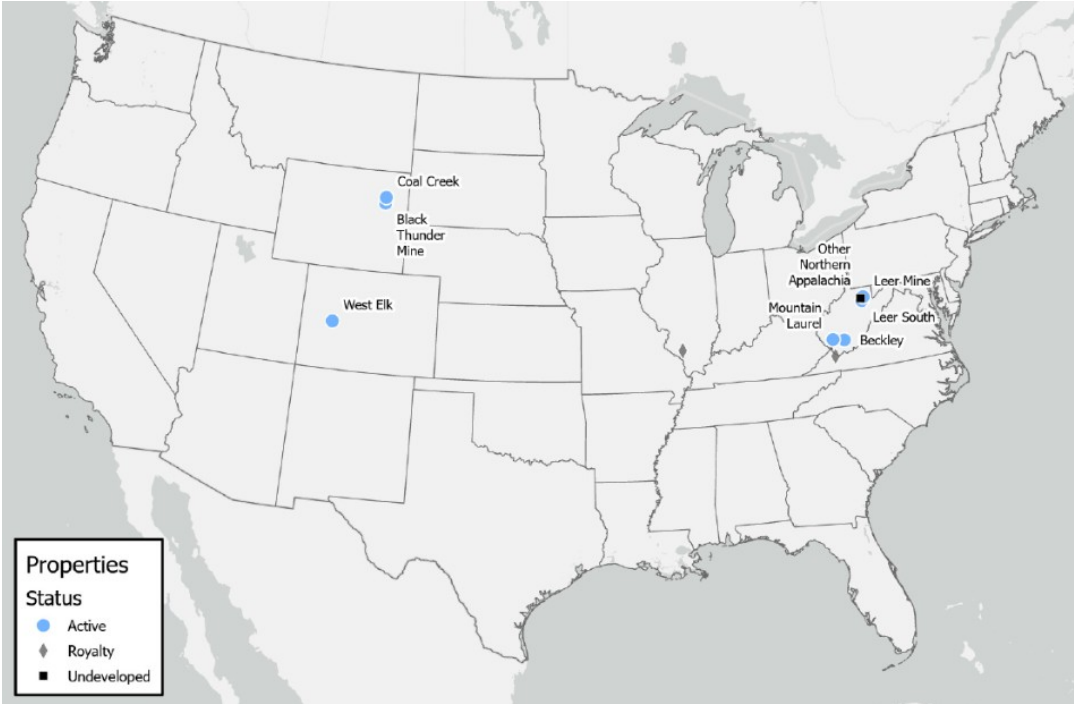
General. At December 31, 2022, we operated 7 active mines in the United States. The Company reports its results of operations primarily through the following reportable segments: Metallurgical (MET) segment, containing the Company's metallurgical operations in West Virginia, and the Thermal segment containing the Company's thermal operations in Wyoming and Colorado. For additional information about the operating results of each of our segments for the years ended December 31, 2022, 2021, and 2020, see Note 26 to the Consolidated Financial Statements, "Segment Information."

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 all 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.

In November of 2021, we sold our equity investment in Knight Hawk Holdings, LLC, which had been part of our Corporate, Other and Eliminations grouping. For further information on the sale of Knight Hawk Holdings, LLC, please see Note 4 to the Consolidated Financial Statements, "Divestitures."

In December of 2020, we sold our Viper operation, which had been part of our Other Thermal segment, to Knight Hawk Holdings, LLC. For further information on the sale of Viper to Knight Hawk Holdings, LLC, please see Note 4 to the Consolidated Financial Statements, "Divestitures."

The following map shows the locations of our active, royalty and undeveloped mining operations. Note that this is limited to those properties in which we have current mining operations or expect to have an economic benefit due to mining activity in the future:



The following table provides a summary of information regarding our active mining complexes as of December 31, 2022, including the total tons sold associated with these complexes for the years ended December 31, 2022, 2021, and 2020 and the total reserves associated with these complexes at December 31, 2022. 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 Company owns 100% of the active mining complexes below.

Mining Complex	Mines	Mining Equipment	Railroad	Tons Sold ⁽¹⁾			Total Cost of Property, Plant and Equipment at December 31, 2022 (\$ millions)	Total Recoverable Mineral Reserves (Million tons)
				2020	2021	2022		
Metallurgical:								
Leer	U	LW, CM	CSX	4.2	4.6	3.9	\$ 325.3	42.4
Leer South	U	LW, CM	CSX	0.7	0.8	2.2	664.7	66.6
Beckley	U	CM	CSX	1.0	1.1	0.9	105.3	19.6
Mountain Laurel	U	CM	CSX	0.9	1.0	0.8	75.2	16.7
Thermal:								
Black Thunder	S	D, S	UP/BN	50.2	60.2	62.3	230.5	480.0
Coal Creek	S	D, S	UP/BN	2.1	2.0	3.8	0.3	—
West Elk	U	LW, CM	UP	2.5	3.0	4.3	13.3	48.1
Totals				61.6	72.7	78.2	\$ 1,414.6	673.4

S = Surface mine

D = Dragline

UP = Union Pacific Railroad

U = Underground mine

S = Shovel/truck

CSX = CSX Transportation

LW = Longwall

BN = Burlington Northern-Santa Fe Railway

CM = Continuous miner

(1) Tons of coal we purchased from third parties that were not processed through our loadout facilities are not included in the amounts shown in the table above.

In October 2018, the Securities and Exchange Commission (“SEC”) adopted amendments to its current disclosure rules to modernize the mineral property disclosure requirements for mining registrants. The amendments include the adoption of S-K 1300, which will govern disclosure for mining registrants (the “SEC Mining Modernization Rules”).

Descriptions in this report of our mineral reserves and resources are prepared in accordance with S-K 1300, as well as similar information provided by other issuers in accordance with S-K 1300, may not be comparable to similar information that is presented elsewhere outside of this report. Please refer to the Technical Report Summaries (“TRS”) filed as Exhibits 96.1-96.3 to our Annual Report on Form 10-K for the period ended December 31, 2022 for additional information with respect to our material properties. Refer to Item 2. Properties for further discussion on the reserves and material properties.

Metallurgical

Leer. The Leer Complex is a longwall operation, located in Taylor County, West Virginia, includes approximately 42.4 million tons of coal reserves as of December 31, 2022 and is primarily sold as High-Vol A metallurgical quality coal in the Lower Kittanning seam, and is part of approximately 93,300 acres that is considered our Tygart Valley area. Substantially all of the reserves at Leer are owned rather than leased from third parties.

All the production is processed through a 1,400 ton-per-hour preparation plant and loaded on the CSX railroad. A 15,000-ton train can be loaded in less than four hours.

Leer South. The Leer South mining complex is a longwall operation in the Lower Kittanning seam with a preparation plant and a loadout facility located on approximately 26,000 acres in Barbour County, West Virginia. The 1,600 ton-per-hour preparation plant is located near the mine, and the loadout facility is served by the CSX railroad and connected to the plant by a 4,000 ton-per-hour conveyor system. The loadout facility is capable of loading a 15,000 ton unit train in less than four hours.

Coal quality is primarily High-Vol A metallurgical coal similar to our Leer Complex. The Leer South mining complex had approximately 66.6 million tons of proven and probable reserves at December 31, 2022. A significant portion of the reserves at Leer South are owned rather than leased from third parties.

Beckley. The Beckley mining complex is located on approximately 16,600 acres in Raleigh County, West Virginia. Beckley is extracting high quality, Low-Vol metallurgical coal in the Pocahontas No. 3 seam. The Beckley mining complex had approximately 19.6 million tons of proven and probable reserves at December 31, 2022.

Coal is conveyed from the mine to a 600-ton-per-hour preparation plant before shipping the coal via the CSX railroad. The loadout facility can load a 10,000-ton train in less than four hours.

Mountain Laurel. Mountain Laurel is an underground mining complex located on approximately 38,200 acres in Logan County and Boone County, West Virginia. Underground mining operations at the Mountain Laurel mining complex extracts High-Vol B metallurgical coal from the Alma and No. 2 Gas seams. Including the No. 2 Gas seam, the Mountain Laurel mining complex has approximately 16.7 million tons of proven and probable reserves at December 31, 2022.

We process all of the coal through a 1,400-ton-per-hour preparation plant before shipping the coal to our customers via the CSX railroad. The loadout facility can load a 15,000-ton train in less than four hours.

Thermal

Black Thunder. Black Thunder is a surface mining complex located on approximately 35,300 acres in Campbell County, Wyoming. The Black Thunder complex extracts thermal coal from the Upper Wyodak and Main Wyodak seams.

We control a significant portion of the coal reserves through federal and state leases. The Black Thunder mining complex had approximately 480 million tons of proven and probable reserves at December 31, 2022.

The Black Thunder mining complex currently consists of four active pit areas and two active loadout facilities. We ship all of the coal raw to our customers via the Burlington Northern Santa Fe and Union Pacific railroads. We do not process the coal mined at this complex. Each of the loadout facilities can load a 15,000-ton train in less than two hours.

Coal Creek. Coal Creek is a surface mining complex located on approximately 7,400 acres in Campbell County, Wyoming. The Coal Creek mining complex extracts thermal coal from the Wyodak-R1 and Wyodak-R3 seams.

The Coal Creek complex currently consists of one active pit area and a loadout facility. We ship all of the coal raw to our customers via the Burlington Northern Santa Fe and Union Pacific railroads. We do not process the coal mined at this complex. The loadout facility can load a 15,000-ton train in less than three hours.

In alignment with our desire to shrink our operational footprint and associated liabilities, we have committed to systematically reclaiming our Coal Creek operation as sales from the complex taper down.

West Elk. West Elk is an underground mining complex located on approximately 18,400 acres in Gunnison County, Colorado. The West Elk mining complex extracts thermal coal from the E seam. We are currently working on developing the B seam at the complex.

We control a significant portion of the coal reserves through federal and state leases. The West Elk mining complex had approximately 48.1 million tons of proven and probable reserves at December 31, 2022.

The West Elk complex currently consists of a longwall, continuous miner sections, a preparation plant, and a loadout facility. We ship most of the coal raw to our customers via the Union Pacific railroad. When required to improve the quality of some of our coal production, it is processed through the 800 ton-per-hour preparation plant. The loadout facility can load an 11,000-ton train in less than three hours.

Sales, Marketing and Trading

Overview. Coal prices are influenced by a number of factors and can vary materially by region. The price of coal within a region is influenced by general marketplace conditions, the supply and price of alternative fuels to coal (such as natural gas and subsidized renewables), production costs, coal quality, transportation costs involved in moving coal from the mine to the point of use and mine operating costs. For example, in thermal coal markets, higher heat and lower ash content generally result in higher prices, and higher sulfur and higher ash content generally result in lower prices within a given geographic region. In metallurgical coal markets, chemical properties within the coal and transportation costs determine price differences.

The cost of producing coal at the mine is also influenced by geologic characteristics such as seam thickness, overburden ratios and depth of underground reserves. It is generally less expensive to mine coal seams that are thick and located close to the surface than to mine thin underground seams. Within a particular geographic region, underground mining, which is the mining method we use in our Appalachian mines, is generally more expensive than surface mining, which is the mining method we use in the Powder River Basin. This is the case because of the higher capital costs relative to the reserve base, including costs for construction of extensive ventilation systems, and higher per unit labor costs due to lower productivity associated with underground mining.

Our sales, marketing and trading functions are principally based in St. Louis, Missouri and consist of sales and trading, transportation and distribution, quality control and contract administration personnel as well as revenue management. We also have sales representatives in our Singapore and London offices. In addition to selling coal produced from our mining complexes, from time to time we purchase and sell coal mined by others, some of which we blend with coal produced from our mines. We focus on meeting the needs and specifications of our customers rather than just selling our coal production.

Customers. The Company markets its metallurgical and thermal coal to domestic and foreign steel producers, domestic and foreign power generators, and other industrial facilities. For the year ended December 31, 2022, we derived approximately 17% of our total coal revenues from sales to our three largest customers, ArcelorMittal, Hyundai Steel Company and JERA Global Markets Pte. Ltd. and approximately 42% of our total coal revenues from sales to our 10 largest customers.

In 2022, we sold coal to domestic customers located in 28 different states. The locations of our mines enable us to ship coal to most of the major coal-fueled power plants in the United States.

In addition, in 2022 we exported coal to Europe, Asia, Central and South America. Revenue from exports to seaborne countries was \$2.3 billion, \$1.1 billion and \$0.5 billion for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022 and 2021, trade receivables related to metallurgical-quality coal sales totaled \$142.9 million and \$251.5 million, respectively, or 60% and 78% of total trade receivables, respectively. We do not have foreign currency exposure for our international sales as all sales are denominated and settled in U.S. dollars.

The Company's seaborne revenues by coal shipment destination for the year ended December 31, 2022, were as follows:

(In thousands)	
Europe	\$ 939,955
Asia	1,210,855
Central and South America	160,642
Total	<u>\$ 2,311,452</u>

Long-Term Coal Supply Arrangements

As is customary in the coal industry, we enter into fixed price, fixed volume term-based supply contracts, the terms of which are sometimes more than one year ("Long-Term"), with many of our customers. Multiple year contracts usually have specific and possibly different volume and pricing arrangements for each year of the contract. Long-term contracts allow customers to secure a supply for their future needs and provide us with greater predictability of sales volume and sales prices. In 2022, we sold approximately 68% of the tonnage (representing approximately 36% of the Company's revenues) of our coal under long-term supply arrangements. The majority of our supply contracts include a fixed price for the term of the agreement or a pre-determined escalation in price for each year. Some of our long-term supply agreements may include a variable pricing system. While most of our sales contracts are for terms of one to five years, some are as short as one month. At December 31, 2022, the average volume-weighted remaining term of our long-term contracts for metallurgical and thermal coal was approximately 2.6 years, with remaining terms ranging from one to five years. At December 31, 2022, remaining tons under long-term supply agreements, including those subject to price re-opener or extension provisions, were approximately 126.8 million tons.

We typically sell coal to North American customers under term arrangements through a "request-for-proposal" process. We also respond to private solicitations and generally do not know if a customer intends to buy the coal for which they solicited. The terms of our coal sales agreements are dictated by the availability and price of alternative fuels, general marketplace conditions, the quality of the coal we have available to sell, our mine operations (including operating costs), the length of contract, as well as negotiations with customers. Consequently, the terms of these contracts may vary to some extent by customer, including base price adjustment features, price re-opener terms, coal quality requirements, quantity parameters, permitted sources of supply, future regulatory changes, extension options, *force majeure*, termination, damages and assignment provisions. Our long-term supply contracts typically contain provisions to adjust the base price due to new governmental statutes, ordinances or regulations. We typically sell our metallurgical coal to non-North American customers based on various indices or agreements to mutually negotiate the price. These agreements generally are for one year and can reset pricing with each shipment. Additionally, some of our contracts contain provisions that allow for the recovery of costs affected by modifications or changes in the interpretations or application of any applicable statute by local, state or federal government authorities. These provisions only apply to the base price of coal contained in these supply contracts. In some circumstances, a significant adjustment in base price can lead to termination of the contract.

Certain of our contracts contain index provisions that change the price based on changes in market based indices or changes in economic indices or both. Certain of our contracts contain price re-opener provisions that may allow a party to commence a renegotiation of the contract price at a pre-determined time. Price re-opener provisions may automatically set a new price based on prevailing market price or, in some instances, require us to negotiate a new price, sometimes within a specified range of prices. In a limited number of agreements, if the parties do not agree on a new price, either party has an option to suspend the agreement for the pricing period not agreed to. In addition, certain of our contracts contain clauses that may allow customers to terminate the contract in the event of certain changes in environmental laws and regulations that impact their operations.

Customers are generally required to take their coal on a ratable basis but have been known to push sales out in low demand periods when contract prices are higher. Each of these situations must be dealt with on an individual basis.

Coal quality and volumes are stipulated in coal sales agreements. In most cases, the annual pricing and volume obligations are fixed, although in some cases the volume specified may vary depending on the customer consumption

requirements. Most of our coal sales agreements contain provisions requiring us to deliver coal within certain ranges for specific coal characteristics such as heat content (for thermal coal contracts), volatile matter (for metallurgical coal contracts), and for both types of contracts, sulfur, ash and moisture content. Failure to meet these specifications can result in economic penalties, suspension or cancellation of shipments or termination of the contracts.

Our coal sales agreements also typically contain *force majeure* provisions allowing temporary suspension of performance by us or our customers, during the duration of events beyond the control of the affected party, including events such as strikes, adverse mining conditions, mine closures or serious transportation problems that affect us or unanticipated plant outages that may affect the buyer. Our contracts also generally provide that in the event a *force majeure* circumstance exceeds a certain time period, the unaffected party may have the option to terminate the purchase or sale in whole or in part. Some contracts stipulate that this tonnage can be made up by mutual agreement or at the discretion of the buyer. Agreements between our customers and the railroads servicing our mines may also contain *force majeure* provisions.

In most of our thermal coal contracts, we have a right of substitution (unilateral or subject to counterparty approval), allowing us to provide coal from different mines, including third-party mines, as long as the replacement coal meets quality specifications and will be sold at the same equivalent delivered cost.

In some of our coal supply contracts, we agree to indemnify or reimburse our customers for damage to their or their rail carrier's equipment while on our property, which results from our or our agents' negligence, and for damage to our customer's equipment due to non-coal materials being included with our coal while on our property.

Trading. In addition to marketing and selling coal to customers through traditional coal supply arrangements, we seek to optimize our coal production and leverage our knowledge of the coal industry through a variety of other marketing, trading and asset optimization strategies. From time to time, we may employ strategies to use coal and coal-related commodities and contracts for those commodities in order to manage and hedge volumes and/or prices associated with our coal sales or purchase commitments, reduce our exposure to the volatility of market prices or augment the value of our portfolio of traditional assets. These strategies may include physical coal contracts, as well as a variety of forward, futures or options contracts, swap agreements or other financial instruments, in coal or other commodities such as natural gas and foreign currencies.

We maintain a system of complementary processes and controls designed to monitor and manage our exposure to market and other risks that may arise as a consequence of these strategies. These processes and controls seek to preserve our ability to profit from certain marketing, trading and asset optimization strategies while mitigating our exposure to potential losses.

Transportation. We generally sell coal to international customers at export terminals, and we are usually responsible for the cost of transporting coal to the export terminals. We transport our coal to Atlantic coast terminals, Pacific cost terminals or terminals along the Gulf of Mexico for transportation to international customers. Our international customers are generally responsible for paying the cost of ocean freight. We may also sell coal to international customers delivered to an unloading facility at the destination country.

We own a 35% interest in Dominion Terminal Associates LLP, a limited liability partnership that operates a ground storage-to-vessel coal transloading facility in Newport News, Virginia. The facility has a rated throughput capacity of 20 million tons of coal per year and ground storage capacity of approximately 1.7 million tons. The facility primarily serves international customers, as well as domestic coal users located along the Atlantic coast of the United States. From time-to-time, we may lease a portion of our port capacity to third parties.

We ship our coal to domestic customers by means of railcars, barges, or trucks, or a combination of these means of transportation. We generally sell coal used for domestic consumption free on board (f.o.b.) at the mine or nearest loading facility. Our domestic customers normally bear the costs of transporting coal by rail, barge or truck.

Historically, most domestic electricity generators have arranged long-term shipping contracts with rail, trucking or barge companies to assure stable delivery costs. Transportation can be a large component of a purchaser's total cost.

Although the purchaser pays the freight, transportation costs still are important to coal mining companies because the purchaser may choose a supplier largely based on cost of transportation. Transportation costs borne by the customer vary greatly based on each customer's proximity to the mine and our proximity to the loadout facilities. Trucks and overland conveyors haul coal over shorter distances, while barges, Great Lake carriers and ocean vessels move coal to export markets and domestic markets requiring shipment over the Great Lakes and several river systems.

Most coal mines are served by a single rail company, but much of the Powder River Basin is served by two rail carriers: the Burlington Northern-Santa Fe railroad and the Union Pacific railroad. We generally transport coal produced at our Appalachian mining complexes via the CSX railroad. Besides rail deliveries, some customers in the eastern United States rely on a river barge system or over-the-road trucks.

Competition

The coal industry is intensely competitive with alternative energy sources outside of the industry and between producing companies. The most important factors on which we compete are coal quality, delivered costs to the customer and reliability of supply. Our principal domestic coal-producing peers include Alpha Metallurgical Resources Inc.; Coronado Coal LLC; Corsa Coal Corp.; Eagle Specialty Materials LLC; Navajo Transitional Energy Company LLC; Peabody Energy Corp.; Ramaco Resources; and Warrior Met Coal, Inc. Some of these coal producers are larger than we are and may have greater financial resources and larger reserve bases than we do. We also compete directly with a number of smaller producers in each of the geographic regions in which we operate, as well as companies that produce coal from one or more foreign countries, such as Australia, Canada, Colombia, Indonesia, South Africa and Russia.

Our principal competitor in thermal coal is natural gas, other alternative fuels, and subsidized renewables. Specifically, coal competes directly with other fuels, such as natural gas, nuclear energy, hydropower, subsidized renewable, and petroleum, for steam and electrical power generation. Costs and other factors relating to these alternative fuels, such as safety and environmental considerations, as well as tax incentives and various mandates, affect the overall demand for coal as a fuel and the price we can charge for the coal. Rail rates for domestic coal can account for over two-thirds of the delivered cost of the product and is a cost that we cannot control. Rail rates and the performance of the railroads are generally a process controlled by our customers and meaningfully impacts our competitiveness with other producers and alternative fuel sources.

Suppliers

Principal supplies used in our business include petroleum-based fuels, explosives, tires, steel and other raw materials as well as spare parts and other consumables used in the mining process. We use third-party suppliers for a significant portion of our equipment rebuilds and repairs, drilling services and construction. We use sole source suppliers for certain parts of our business such as explosives and fuel, and preferred suppliers for other parts of our business such as original equipment suppliers, dragline and shovel parts and related services. We believe adequate substitute suppliers are available. For more information about our suppliers, you should see Item 1A, "Risk Factors-Increases in the costs of mining and other industrial supplies, including steel-based supplies, diesel fuel and rubber tires, or the inability to obtain a sufficient quantity of those supplies, could negatively affect our operating costs or disrupt or delay our production."

Environmental and Other Regulatory Matters

Federal, state and local authorities regulate the U.S. coal mining industry with respect to matters such as employee health and safety and the environment, including the protection of air quality, water quality, wetlands, special status species of plants and animals, land uses, cultural and historic properties and other environmental resources identified during the permitting process. Reclamation is required during production and after mining has been completed. Materials used and generated by mining operations must also be managed according to applicable regulations and law. These laws have, and will continue to have, a significant effect on our production costs and our competitive position.

Coal mining is one of the most regulated and inspected industrial activities in the United States. We endeavor to conduct our mining operations in compliance with applicable federal, state and local laws and regulations. However,

due in part to the extensive, comprehensive and changing regulatory requirements, violations during mining operations occur from time to time. We cannot assure you that we have been or will be at all times in complete compliance with such laws and regulations. Expenditures we incur to maintain compliance with all applicable federal and state laws have been and are expected to continue to be significant. Federal and state mining laws and regulations require us to obtain surety bonds to guarantee performance or payment of certain long-term obligations, including mine closure and reclamation costs, federal and state workers' compensation benefits, coal leases and other miscellaneous obligations. Compliance with these laws has substantially increased the cost of coal mining for domestic coal producers.

Future laws, regulations or orders, as well as future interpretations, changes in political policies and more rigorous enforcement of existing laws, regulations or orders, may require substantial increases in equipment and operating costs and delays, interruptions or a termination of operations, the extent to which we cannot predict. Future laws, regulations or orders may also cause coal to become a less attractive fuel source, thereby reducing coal's share of the market for fuels and other energy sources used to generate electricity. As a result, future laws, regulations or orders may adversely affect our mining operations, cost structure or our customers' demand for coal.

The following is a summary of the various federal and state environmental and similar regulations that have a material impact on our business:

Mining Permits and Approvals. Numerous governmental permits or approvals are required for mining operations. When we apply for these permits and approvals, we may be required to prepare and present to federal, state or local authorities' data pertaining to the effect or impact that any proposed production or processing of coal may have upon the environment. For example, in order to obtain a federal coal lease, an environmental impact statement must be prepared to assist the BLM in determining the potential environmental impact of lease issuance, including any collateral effects from the mining, transportation and burning of coal, which may in some cases include a review of impacts on climate change. The authorization, permitting and implementation requirements imposed by federal, state and local authorities may be costly and time consuming and may delay commencement or continuation of mining operations. In the states where we operate, the applicable laws and regulations also provide that a mining permit or modification can be delayed, refused or revoked if officers, directors, shareholders with specified interests or certain other affiliated entities with specified interests in the applicant or permittee have, or are affiliated with another entity that has, outstanding permit violations. Thus, past or ongoing violations of applicable laws and regulations could provide a basis to revoke existing permits and to deny the issuance of additional permits.

In order to obtain mining permits and approvals from federal and state regulatory authorities, mine operators must submit a reclamation plan for restoring, upon the completion of mining operations, the mined property to its prior condition or other authorized use. Typically, we submit the necessary permit applications several months or even years before we plan to begin mining a new area. Some of our required permits are becoming increasingly more difficult and expensive to obtain, and the application review processes are taking longer to complete and becoming increasingly subject to challenge, and political manipulation even after a permit has been issued.

Under some circumstances, substantial fines and penalties, including revocation or suspension of mining permits, may be imposed under the laws described above. Monetary sanctions and, in severe circumstances, criminal sanctions may be imposed for failure to comply with these laws.

Surface Mining Control and Reclamation Act. The Surface Mining Control and Reclamation Act, which we refer to as SMCRA, establishes mining, environmental protection, reclamation and closure standards for all aspects of surface mining as well as many aspects of underground mining. Mining operators must obtain SMCRA permits and permit renewals from the Office of Surface Mining, which we refer to as OSM, or from the applicable state agency if the state agency has obtained regulatory primacy. A state agency may achieve primacy if the state regulatory agency develops a mining regulatory program that is no less stringent than the federal mining regulatory program under SMCRA. All states in which we conduct mining operations have achieved primacy and issue permits in lieu of OSM, but are still subject to federal oversight.

SMCRA permit provisions include a complex set of requirements which include, among other things, coal prospecting; mine plan development; topsoil or growth medium removal and replacement; selective handling of

overburden materials; mine pit backfilling and grading; disposal of excess spoil; protection of the hydrologic balance; subsidence control for underground mines; surface runoff and drainage control; establishment of suitable post mining land uses; and revegetation. We begin the process of preparing a mining permit application by collecting baseline data to adequately characterize the pre-mining environmental conditions of the permit area. This work is typically conducted by third-party consultants with specialized expertise and includes surveys and/or assessments of the following: cultural and historical resources; geology; soils; vegetation; aquatic organisms; wildlife; potential for threatened, endangered or other special status species; surface and ground water hydrology; climatology; riverine and riparian habitat; and wetlands. The geologic data and information derived from the other surveys and/or assessments are used to develop the mining and reclamation plans presented in the permit application. The mining and reclamation plans address the provisions and performance standards of the state's equivalent SMCRA regulatory program, and are also used to support applications for other authorizations and/or permits required to conduct coal mining activities. Also included in the permit application is information used for documenting surface and mineral ownership, variance requests, access roads, bonding information, mining methods, mining phases, other agreements that may relate to coal, other minerals, oil and gas rights, water rights, permitted areas, and ownership and control information required to determine compliance with OSM's Applicant Violator System, including the mining and compliance history of officers, directors and principal owners of the entity.

Once a permit application is prepared and submitted to the regulatory agency, it goes through an administrative completeness review and a thorough technical review. Also, before a SMCRA permit is issued, a mine operator must submit a bond or otherwise secure the performance of all reclamation obligations. After the application is submitted, a public notice or advertisement of the proposed permit is required to be given, which begins a notice period that is followed by a public comment period before a permit can be issued. It is not uncommon for a SMCRA mine permit application to take over a year to prepare, depending on the size and complexity of the mine, and anywhere from six months to two years or even longer for the permit to be issued. The variability in time frame required to prepare the application and issue the permit can be attributed primarily to the various regulatory authorities' discretion in the handling of comments and objections relating to the project received from the general public and other agencies. Also, it is not uncommon for a permit to be delayed as a result of litigation related to the specific permit or another related company's permit.

In addition to the bond requirement for an active or proposed permit, the Abandoned Mine Land Fund, which was created by SMCRA, requires that a fee be paid on all coal produced. The proceeds of the fee are used to restore mines closed or abandoned prior to SMCRA's adoption in 1977, as well as fund other state and federal initiatives. For the first three quarters of 2022, the fee was \$0.28 per ton of coal produced from surface mines and \$0.12 per ton of coal produced from underground mines. As a result of the Infrastructure Investment and Jobs Act of 2021, which included the Abandoned Mine Land Reclamation Amendments of 2021, the fees decreased as of the calendar quarter beginning October 1, 2021. The current fee is \$0.224 per ton of coal produced from surface mines and \$0.096 per ton of coal produced from underground mines. In 2022, we recorded \$15.9 million of expense related to these reclamation fees.

Surety Bonds. Mine operators are often required by federal and/or state laws, including SMCRA, to assure, usually through the use of surety bonds, payment of certain long-term obligations including mine closure or reclamation costs, federal and state workers' compensation costs, coal leases and other miscellaneous obligations. Although surety bonds are usually non-cancelable during their term, many of these bonds are renewable on an annual basis and collateral requirements may change.

The costs of these bonds have widely fluctuated in recent years while the market terms of surety bonds have remained difficult for mine operators. These changes in the terms of the bonds have been accompanied at times by a decrease in the number of companies willing to issue surety bonds. As of December 31, 2022, we posted an aggregate of approximately \$457.7 million in surety bonds, cash, and letters of credit outstanding for reclamation purposes.

At December 31, 2022, the Company maintains a fund for asset retirement obligations and thus far has contributed \$136 million that will serve to defease the long-term asset retirement obligation for its thermal asset base.

For additional information, please see "Failure to obtain or renew surety bonds on acceptable terms could affect our ability to secure reclamation and coal lease obligations and, therefore, our ability to mine or lease coal, which could

have a material adverse effect on our business and results of operations,” contained in Item 1A, “Risk Factors—Risk Related to Our Operations,” for a discussion of certain risks associated with our surety bonds.

Mine Safety and Health. Stringent safety and health standards have been imposed by federal legislation since Congress adopted the Mine Safety and Health Act of 1969. The Mine Safety and Health Act of 1977 significantly expanded the enforcement of safety and health standards and imposed comprehensive safety and health standards on all aspects of mining operations. In addition to federal regulatory programs, all of the states in which we operate also have programs aimed at improving mine safety and health. Collectively, federal and state safety and health regulation in the coal mining industry is among the most comprehensive and pervasive systems for the protection of employee health and safety affecting any segment of U.S. industry.

Under the Black Lung Benefits Revenue Act of 1977 and the Black Lung Benefits Reform Act of 1977, each coal mine operator must secure payment of federal black lung benefits to claimants who are current and former employees and to a trust fund for the payment of benefits and medical expenses to claimants who last worked in the coal industry prior to July 1, 1973. The trust fund is funded by an excise tax on coal production. The Inflation Reduction Act of 2022 set the tax at the lower of \$1.10 per ton for coal mined in underground operations and \$0.55 per ton for coal mined in surface operations, in each case not to exceed 4.4% of the gross sales price. This excise tax does not apply to coal shipped outside the United States. In 2022, we recorded \$21.5 million of expense related to this excise tax.

On January 18, 2023, the Office of Workers’ Compensation Programs (“OWCP”) proposed revisions to regulations under the Black Lung Benefits Act (BLBA) governing authorization of self-insurers. The revisions seek to codify the practice of basing a self-insured operator’s security requirement on an actuarial assessment of its total present and future black lung liability. A material change to the regulations is the requirements that all self-insured operators must post security equal to 120% of their projected black lung liabilities. The proposed regulations were posted to the Federal Register on January 19, 2023 with written comments to be accepted within 60 days of this date. The revisions proposed by the OWCP were a material deviation from their bulletin issued in December 2020 that would have required the majority of coal operators to post security equal to 70% of their projected black lung liabilities. If the above regulation is codified into law, the Company will be required to post additional collateral to maintain its self-insured status. The Company is evaluating alternatives to self-insurance, including the purchase of commercial insurance to cover these claims. Additionally, the Company is assessing the availability of surety bond capacity within the markets, additional sources of liquidity, and other items to satisfy the proposed regulations.

Clean Air Act. The federal Clean Air Act and similar state and local laws that regulate air emissions affect coal mining directly and indirectly. Direct impacts on coal mining and processing operations include Clean Air Act permitting requirements and emissions control requirements. These include emissions of ozone precursors and particulate matter which may include controlling fugitive dust. The Clean Air Act also indirectly affects coal mining operations, for example, by extensively regulating the emissions of fine particulate matter measuring 2.5 micrometers in diameter or smaller, sulfur dioxide, nitrogen oxides, mercury and other compounds emitted by coal-fueled power plants and industrial boilers, which are the largest end-users of our coal. Already stringent regulation of emissions further tightened throughout the Obama Administration, such as the Mercury and Air Toxics Standard (MATS), finalized in 2011 and discussed in more detail below. In addition, the U.S. Environmental Protection Agency, which we refer to as the EPA, has issued regulations with respect to other emissions, such as greenhouse gases (GHGs), from new, modified, reconstructed and existing electric generating units, including coal-fired plants. Other GHG regulations apply to industrial boilers (see discussion of Climate Change, below). On January 20, 2021, the current administration issued an executive order directing all federal agencies to review and take action to address any federal regulations, orders, guidance documents, policies and any similar agency actions promulgated during the prior administration that may be inconsistent with the administration’s policies. As a result, it is unclear the degree to which certain recent regulatory developments may be modified or rescinded. The executive order also established an Interagency Working Group on the Social Cost of Greenhouse Gases (“Working Group”), which is called on to, among other things, develop methodologies for calculating the “social cost of carbon,” “social cost of nitrous oxide” and “social cost of methane.” The Working Group published a Technical Support Document in February 2021 seeking public comments by May 2021. Recommendations from the Working Group were due beginning June 1, 2021 and final recommendations no later than January 2022. The Working Group made initial recommendations in February 2021; final recommendations have not been released. Building on the Working Group’s interim values for social cost of greenhouse bases, the EPA released,

for public review in November 2022, a September 2022 draft report with updated social cost of carbon figures. Further regulation of air emissions, as well as uncertainty regarding the future course of regulation, could eventually reduce the demand for coal.

On January 27, 2021, the current administration issued an executive order focused on addressing climate change. Among other things, the executive order directed the Secretary of the Interior to pause new oil and natural gas leasing on public lands or in offshore waters pending completion of a comprehensive review of the federal permitting and leasing practices, consider whether to adjust royalties associated with coal, oil, and gas resources extracted from public lands and offshore waters, or take other appropriate action, to account for corresponding climate costs. In response to the executive order, the U.S. Department of the Interior suspended new oil and gas leases on federal land and in federal waters. The suspension was challenged in federal court, and in June 2021 a federal district court judge in Louisiana issued a preliminary injunction blocking the suspension. The executive order also directed the federal government to identify “fossil fuel subsidies” to take steps to ensure that, to the extent consistent with applicable law, federal funding is not directly subsidizing fossil fuels. In November 2021, the U.S. Department of the Interior issued a “Report On The Federal Oil And Gas Leasing Program,” which assesses the current state of oil and gas leasing on federal lands and proposes several reforms, including raising royalty rates and implementing stricter standards for entities seeking to purchase oil and gas leases.

Clean Air Act requirements that may directly or indirectly affect our operations include the following:

- *Acid Rain.* Title IV of the Clean Air Act, promulgated in 1990, imposed a two-phase reduction of sulfur dioxide emissions by electric utilities. Phase II became effective in 2000 and applies to all coal-fueled power plants with a capacity of more than 25-megawatts. Generally, the affected power plants have sought to comply with these requirements by switching to lower sulfur fuels, installing pollution control devices, reducing electricity generating levels or purchasing or trading sulfur dioxide emissions allowances. Although we cannot accurately predict the future effect of this Clean Air Act provision on our operations, we believe that implementation of Phase II has been factored into the pricing of the coal market.
- *Particulate Matter.* The Clean Air Act requires the EPA to set national ambient air quality standards, which we refer to as NAAQS, for certain pollutants associated with the combustion of coal, including sulfur dioxide, particulate matter, nitrogen oxides and ozone. Areas that are not in compliance with these standards, referred to as non-attainment areas, must take steps to reduce emissions levels. For example, NAAQS currently exist for particulate matter measuring 10 micrometers in diameter or smaller (PM10) and for fine particulate matter measuring 2.5 micrometers in diameter or smaller (PM2.5), and the EPA revised the PM2.5 NAAQS on December 14, 2012, making it more stringent. The states were required to make recommendations on nonattainment designations for the new NAAQS in late 2013. The EPA issued final designations for most areas of the country in 2012 and made some revisions in 2015. Individual states must now identify the sources of emissions and develop emission reduction plans. These plans may be state-specific or regional in scope. Under the Clean Air Act, individual states have up to 12 years from the date of designation to secure emissions reductions from sources contributing to the problem. In December 2020, the EPA issued a decision, following its review of the PM NAAQS, and decided to retain the 2012 PM NAAQS with no revisions. The EPA is currently reviewing that December 2020 decision to retain the 2012 PM NAAQS, and the EPA is expected soon to release its new proposal, following that review. Future regulation and enforcement of the new PM2.5 standard, as well as future revisions of PM standards, will affect many power plants, especially coal-fueled power plants, and all plants in non-attainment areas.
- *Ozone.* On October 26, 2015, the EPA published a final rule revising the existing primary and secondary NAAQS for ozone, reducing them to 70ppb on an 8-hour average. On November 17, 2016, the EPA issued a proposed implementation rule on non-attainment area classification and state implementation plans (SIPs). The EPA published a final rule in November 2017 that issued area designations with respect to ground-level ozone for approximately 35% of the U.S. counties, designating them as either “attainment/unclassifiable” or “unclassifiable.” In April 2018 and July 2018, the EPA issued ozone designations for all areas not addressed in the November 2017 rule. States with moderate or high nonattainment areas were required to submit SIPs by October 2021. Significant additional emission control

expenditures will likely be required at certain coal-fueled power plants to meet the new stricter NAAQS. Nitrogen oxides, which are a byproduct of coal combustion, are classified as an ozone precursor. As a result, emissions control requirements for new and expanded coal-fueled power plants and industrial boilers will continue to become more demanding in the years ahead. On December 6, 2018, the EPA issued a Final Rule implementing the 2015 Ozone NAAQS for nonattainment areas (“2015 Ozone Implementation Rule”). The 2015 Ozone Implementation Rule is notable for providing greater flexibility to States to consider international sources of pollution and other mechanisms for relief from strict application of the standard. With such flexibility, the effect on demand for coal will vary by state. By law, the EPA must review each NAAQS every five years. In December 2020, the EPA announced that it was retaining without revision the 2015 NAAQS for ozone. However, as noted above, on January 20, 2021, the current administration issued an executive order directing federal agencies to review and take action to address any federal regulations or similar agency actions promulgated during the prior administration that may be inconsistent with the current administration’s stated priorities. The EPA was specifically ordered to, among other things, propose a Federal Implementation Plan for ozone standards for California, Connecticut, New York, Pennsylvania and Texas by January 2022. In December 2021 and January 2022, EPA approved multiple revisions to ozone SIPs in Pennsylvania, New York, Connecticut, and a number of air quality districts in California; proceedings are ongoing in Texas and other districts in California.

- *NOx SIP Call.* The Nitrogen Oxides State Implementation Plan (NOx SIP) Call program was established by the EPA in October 1998 to reduce the transport of ozone on prevailing winds from the Midwest and South to states in the Northeast, which said that they could not meet federal air quality standards because of migrating pollution. The program was designed to reduce nitrous oxide emissions by one million tons per year in 22 eastern states and the District of Columbia. Phase II reductions were required by May 2007. As a result of the program, many power plants were required to install additional emission control measures, such as selective catalytic reduction devices. Installation of additional emission control measures has made it more costly to operate coal-fueled power plants, which could make coal a less attractive fuel.
- *Interstate Transport.* The EPA finalized the Clean Air Interstate Rule, which we refer to as CAIR, in March 2005. CAIR called for power plants in 28 Eastern states and the District of Columbia to reduce emission levels of sulfur dioxide and nitrous oxide, which could lead to non-attainment of PM2.5 and ozone NAAQS in downwind states (interstate transport), pursuant to a cap and trade program similar to the system now in effect for acid deposition control. In July 2008, in *State of North Carolina v. EPA* and consolidated cases, the D.C. Circuit disagreed with the EPA’s reading of the Clean Air Act and vacated CAIR in its entirety. In December 2008, the D.C. Circuit revised its remedy and remanded the rule to the EPA. The EPA proposed a revised transport rule on August 2, 2010 (75 Fed. Reg. 45209) to address attainment of the 1997 ozone NAAQS and the 2006 PM2.5 NAAQS. The rule was finalized as the Cross State Air Pollution Rule (CSAPR) on July 6, 2011, with compliance required for SO2 reductions beginning January 1, 2012 and compliance with NOx reductions required by May 1, 2012. Numerous appeals of the rule were filed and, on August 21, 2012, the D.C. Circuit vacated the rule, leaving the EPA to continue implementation of the CAIR. Controls required under the CAIR, especially in conjunction with other rules, may have affected the market for coal inasmuch as multiple existing coal fired units were being retired rather than having required controls installed.

The U.S. Supreme Court agreed to hear the EPA’s appeal of the decision vacating CSAPR and on April 29, 2014, issued an opinion reversing the August 21, 2012 D.C. Circuit decision, remanding the case back to the D.C. Circuit. The EPA then requested that the court lift the CSAPR stay and toll the CSAPR compliance deadlines by three years. On October 23, 2014, the D.C. Circuit granted the EPA’s request, and that court later dismissed all pending challenges to the rule on July 28, 2015 but it remanded some state budgets to the EPA for further consideration. CSAPR Phase 1 implementation began in 2015, with Phase 2 beginning in 2017. CSAPR generally requires greater reductions than under CAIR. As a result, some coal-fired power plants will be required to install costly pollution controls or shut down which may adversely affect the demand for coal. Finally, in October 2016, the EPA issued an update to the CSAPR to address interstate transport of air pollution under the more recent 2008 ozone NAAQS and the state budgets remanded by the D.C. Circuit. Consolidated judicial challenges to the rule are now pending, but

On August 10, 2017, the D.C. Circuit suspended briefing in the litigation after industry petitioners challenging the rule requested to delay proceedings so the EPA can determine whether to reconsider the revised CSAPR. On June 29, 2018, the EPA issued a proposed determination that the 2016 CSAPR Update Rule fully addresses states' interstate transport obligations under the 2008 ozone NAAQS. However, the EPA has also signaled in a variety of 2018 memoranda that states may have more flexibility to consider international emissions and higher thresholds in developing SIPs than under prior guidance. It is not clear how the combination of upholding the 2016 CSAPR Update Rule while allowing greater SIP flexibility will affect decisions to install controls or shut down units, and any resulting effects on the demand for coal. On September 13, 2019 the D.C. Circuit upheld most of the 2016 CSAPR Update Rule, but vacated a provision that allowed upwind states to continue to contribute significantly to downwind states' noncompliance beyond downwind states' statutory compliance deadlines. On October 15, 2020, EPA proposed the Revised CSAPR Update Rule in order to address 21 states' outstanding interstate pollution transport obligations for the 2008 NAAQS. On April 30, 2021, the EPA published the final rule, 86 Fed. Reg. 23,054, entitled the "Revised Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS." The Revised CSAPR Update Rule became effective on June 29, 2021, and was challenged by the "Midwest Ozone Group," a collection of utilities and industry entities. That case remains pending in the D.C. Circuit. If the CSAPR Update Rule is upheld, this may affect demand for coal.

On February 28, 2022, the EPA issued a proposal to impose a Federal Implementation Plan ("FIP") in 26 states to address interstate transport of ozone season NOx emissions and compliance with the 2015 Ozone NAAQS. The EPA's proposal includes stringent new NOx emissions budgets for fossil fuel-fired power plants in 25 states. If finalized, this rule may affect demand for coal.

- *Mercury.* In February 2008, the D.C. Circuit vacated the EPA's Clean Air Mercury Rule (CAMR), which was promulgated to reduce mercury emissions from coal-fired power plants and remanded it to the EPA for reconsideration. In response, the EPA announced an Electric Generating Unit (EGU) Mercury and Air Toxics Standard (MATS) on December 16, 2011. The MATS was finalized April 16, 2012, and required compliance for most plants by 2015. In addition, before the court decision vacating the CAMR, some states had either adopted the CAMR or adopted state-specific rules to regulate mercury emissions from power plants that are more stringent than the CAMR. MATS compliance, coupled with state mercury and air toxics laws and other factors have required many plants to install costly controls, re-fire with natural gas or retire, which may adversely affect the demand for coal.

MATS was challenged in the D.C. Circuit, which upheld the rule on April 15, 2013. Petitioners successfully obtained Supreme Court review, and on June 29, 2015, the Supreme Court issued a 5-4 decision striking down the final rule based on the EPA's failure to consider economic costs in determining whether to regulate. The case was remanded to the D.C. Circuit. The EPA began reconsideration of costs, and petitioners unsuccessfully sought a stay of the rule in the Supreme Court in February 2016. In April 2016, the EPA issued a MATS 2016 Supplemental Finding, a final finding that it is appropriate and necessary to set standards for emissions of air toxics from coal- and oil-fired power plants. On December 27, 2018, the EPA released a proposed Supplemental Cost Finding, concluding that direct regulation of air toxics from coal- and oil-fired power plants is not cost-justified, but proposing to leave the emissions standards and other requirements of the 2012 rule in place. On May 22, 2020, the EPA released a final Supplemental Finding, again concluding that it is not "appropriate and necessary" to regulate EGUs under section 112 of the CAA. The EPA also took final action on the residual risk and technology review (RTR) required by CAA section 112. The results from the RTR showed that emissions of hazardous air pollutants (HAPs) had been reduced such that residual risk is at acceptable levels, there are no developments in HAP emissions controls to achieve further cost-effective reductions beyond the current standards, and, therefore, that no changes to the MATS rule were warranted. However, in the January 20, 2021 Executive Order, the Biden Administration announced a review of the rule in conjunction with other climate-related regulations, and is considering revisiting the "appropriate and necessary" determination and reversing the Supplemental Finding. On January 31, 2022, the EPA proposed revoking the May 2020 finding and proposed finding that it remains "appropriate and necessary" to regulate HAPs from EGUs under section 112 after considering cost.

- *Regional Haze.* The EPA has initiated a regional haze program designed to protect and improve visibility at and around national parks, national wilderness areas and international parks, particularly those located in the southwest and southeast United States. Under the Regional Haze Rule, affected states were required to submit regional haze SIPs by December 17, 2007, that, among other things, were to identify facilities that would have to reduce emissions and comply with stricter emission limitations. The vast majority of states failed to submit their plans by December 17, 2007, and the EPA issued a Finding of Failure to Submit plans on January 15, 2009 (74 Fed. Reg. 2392). The EPA had taken no enforcement action against states to finalize implementation plans and was slowly dealing with the state Regional Haze SIPs that were submitted, which resulted in the National Parks Conservation Association commencing litigation in the D.C. Circuit on August 3, 2012, against the EPA for failure to enforce the rule (*National Parks Conservation Act v. EPA, D.C. Cir.*). Industry groups, including the Utility Air Regulatory Group intervened.

The EPA ultimately agreed in a consent decree with environmental groups to impose regional haze federal implementation plans (FIPs) or to take action on regional haze SIPs before the agency for 42 states and the District of Columbia. The EPA has completed those actions for all but several states in its first planning period (2008-2010). In many eastern states, the EPA has allowed states to meet “best available retrofit control technology” (BART) requirements for power plants through compliance with CAIR and CSAPR (a policy under pending litigation). Other states have had BART imposed on a case-by-case basis, and where the EPA found SIPs deficient, it disapproved them and issued FIPs. It is possible that the EPA may continue to increase the stringency of control requirements imposed under the Regional Haze Program as it moves toward the next planning period.

This program may result in additional emissions restrictions from new coal-fueled power plants whose operations may impair visibility at and around federally protected areas. This program may also require certain existing coal-fueled power plants to install additional control measures designed to limit haze-causing emissions, such as sulfur dioxide, nitrogen oxides, volatile organic chemicals and particulate matter. These limitations could affect the future market for coal. However, on January 18, 2018, the EPA announced that it was revisiting the 2017 Regional Haze Rule revisions, and announced an intent to commence a new rulemaking. On September 11, 2018, the EPA released a “Regional Haze Reform Roadmap” and reaffirmed its commitment to additional rulemaking.

On August 20, 2019, EPA issued guidance to states in preparing SIPs to meet the 2021 deadline, highlighting state flexibility. In September 2021, EPA issued a clarification memorandum, narrowing some of the flexibility identified in prior guidance. On August 30, 2022, the EPA published a notice of its final finding that 15 states have failed to submit SIPs that meet the requirements for the regional haze second planning period, triggering a two-year timeframe for the EPA to impose a FIP on those states or for states to take action that the EPA deems compliant. Regional haze litigation over specific implementation continues, and both evolving guidance and the litigation could affect demand for coal.

- *New Source Review.* A number of pending regulatory changes and court actions are affecting the scope of the EPA’s new source review program, which under certain circumstances requires existing coal-fueled power plants to install the more stringent air emissions control equipment required of new plants. One of these pending regulatory changes is the EPA’s November 15, 2021 proposed rule on “Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review.” The new source review program is continually revised and such revisions may impact demand for coal nationally.

Climate Change. Carbon dioxide, which is defined to be a greenhouse gas, is a by-product of burning coal. Global climate issues, including with respect to greenhouse gases such as carbon dioxide and the relationship that greenhouse gases may have with perceived global warming, continue to attract significant public and scientific attention. For example, the Fourth and Fifth Assessment Reports of the Intergovernmental Panel on Climate Change have expressed concern about the impacts of human activity, especially from fossil fuel combustion, on global climate issues.

As a result of the public and scientific attention, several governmental bodies increasingly are focusing on global climate issues and, more specifically, levels of emissions of carbon dioxide from coal combustion by power plants. Future regulation of greenhouse gas emissions in the United States could occur pursuant to future U.S. treaty obligations, statutory or regulatory changes at the federal, state or local level or otherwise.

Demand for coal also may be impacted by international efforts to reduce emissions of greenhouse gases. For example, in December 2015, representatives of 195 nations reached an agreement (the “Paris Agreement”) that will, for the first time, commit participating countries to lowering greenhouse gas emissions, as discussed further below. Further, the United States and a number of international development banks, such as the World Bank, the European Investment Bank and European Bank for Reconstruction and Development, have announced that they will no longer provide financing for the development of new coal-fueled power plants, subject to very narrow exceptions.

Although the U.S. Congress has considered various legislative proposals that would address global climate issues and greenhouse gas emissions, no such federal proposals have been adopted into law to date. In the absence of U.S. federal legislation on these topics, the EPA has been the primary source of federal oversight, although future regulation of greenhouse gases and global climate matters in the United States could occur pursuant to future U.S. treaty obligations, statutory or regulatory changes under the Clean Air Act, federal adoption of a greenhouse gas regulatory scheme or otherwise.

In 2007, the U.S. Supreme Court held that the EPA has authority under the Clean Air Act to regulate carbon dioxide emissions from automobiles and can decide against regulation only if the EPA determines that carbon dioxide does not significantly contribute to climate change and does not endanger public health or the environment. Although the Supreme Court’s holding did not expressly involve the EPA’s authority to regulate greenhouse gas emissions from stationary sources, such as coal-fueled power plants, the EPA since has determined on its own that it has the authority to regulate greenhouse gas emissions from power plants, and the EPA has published a formal determination that six greenhouse gases, including carbon dioxide, endanger both the public health and welfare of current and future generations.

In 2014, the EPA proposed a sweeping rule, known as the “Clean Power Plan,” to cut carbon emissions from existing electric generating units, including coal-fired power plants. A final version of the Clean Power Plan was adopted in August 2015. The final version of the Clean Power Plan aims to reduce carbon dioxide emissions from electrical power generation by 32% by 2030 relative to 2005 levels through reduction of emissions from coal-burning power plants and increased use of renewable energy and energy conservation methods. Under the Clean Power Plan, states are free to reduce emissions by various means and must submit emissions reduction plans to the EPA by September 2016 or, with an approved extension, September 2018. If a state has not submitted a plan by then, the Clean Power Plan authorizes the EPA to impose its own plan on that state. In order to determine a state’s goal, the EPA has divided the country into three regions based on connected regional electricity grids. States are to implement their plans by focusing on (i) increasing the generation efficiency of existing fossil fuel plants, (ii) substituting lower carbon dioxide emitting natural gas generation for coal-powered generation and (iii) substituting generation from new zero carbon dioxide emitting renewable sources for fossil fuel powered generation. States are permitted to use regionally available low carbon generation sources when substituting for in-state coal generation and coordinate with other states to develop multi-state plans. Following the adoption, 27 states sued the EPA, claiming that the EPA overstepped its legal authority in adopting the Clean Power Plan. In February 2016, the U.S. Supreme Court ordered the EPA to halt enforcement of the Clean Power Plan until a lower court rules on the lawsuit and until the Supreme Court determines whether or not to hear the case. In October 2017, the EPA commenced rulemaking proceedings to rescind the Clean Power Plan, and in December 2017, the EPA published an Advanced Notice of Proposed Rulemaking announcing an intent to commence a new rulemaking to replace the Clean Power Plan with an alternative framework for regulating carbon dioxide.

In a parallel litigation, 25 states and other parties filed lawsuits challenging the EPA’s final New Source Performance Standards rules, which we refer to as NSPS, for carbon dioxide emissions from new, modified, and reconstructed power plants under the Clean Air Act. One of the primary issues in these lawsuits is the EPA’s establishment of standards of performance based on technologies including carbon capture and sequestration, which we refer to as CCS. New coal plants cannot meet the new standards unless they implement CCS, which reportedly is not yet commercially available or technically feasible. In conjunction with the EPA’s proposal to rescind the Clean Power Plan,

the EPA also requested a stay of the NSPS litigation. The D.C. Circuit granted the request, and the litigation has been held in abeyance since then.

On June 19, 2019, the EPA finalized the Affordable Clean Energy (ACE) rule as a replacement for the Clean Power Plan. The ACE rule establishes emission guidelines for states to develop plans to address greenhouse gas emissions from existing coal-fired power plants. The ACE rule has several components: a determination of the best system of emission reduction for greenhouse gas emissions from coal-fired power plants, a list of “candidate technologies” states can use when developing their plans, a new preliminary applicability test for determining whether a physical or operational change made to a power plant may be a “major modification” triggering New Source Review, and new implementing regulations for emission guidelines under Clean Air Act section 111(d). On January 19, 2021, the D.C. Circuit Court of Appeals vacated the ACE rule and its implied repeal of the Clean Power Plan, remanding to the EPA for further proceedings. As the remand was proceeding, *West Virginia v. EPA* and three other consolidated cases, the Supreme Court agreed, in *West Virginia v. EPA* and three other consolidated cases, to revisit the EPA’s authority to regulate carbon emissions under Clean Air Act section 111(d) and considered the EPA’s authority to regulate emissions sector-wide rather than on individual sources under section 111(d). These issues implicate not only the ACE, but potentially a variety of other rules related to coal combustion. In June 2022, the Supreme Court ruled against the EPA, holding that the EPA’s attempt to force an overall shift in power generation from higher-emitting to lower-emitting sources exceeded the EPA’s statutory authority under the CAA. The EPA has not yet proposed a replacement rule.

In December 2015, 195 nations (including United States) signed the Paris Agreement, a long-term, international framework convention designed to address climate change over the next several decades. This agreement entered into force in November 2016 after more than 70 countries, including the United States, ratified or otherwise agreed to be bound by the agreement. The United States was among the countries that submitted its declaration of intended greenhouse gas reductions in early 2015, stating its intention to reduce U.S. greenhouse gas emissions by 26-28% by 2025 compared to 2005 levels. Under President Trump, the United States, formally exited the Agreement on November 4, 2020, but President Biden has recommitted the United States to the Paris Agreement. Having rejoined the Paris Agreement, the United States submitted its “Nationally Determined Contribution (“NDC”), or climate action plan, to the United Nations establishing a target of reducing the United States’ net greenhouse gas emissions by 50-52% below 2005 levels by 2030. The United States followed up on the establishment of its NDC by announcing a suite of measures to reduce greenhouse gas emissions at the 27th Conference of the Parties on the UN Framework Convention on Climate Change (“COP27”) held in Sharm el Sheik, Egypt, in November of 2022, including the development of an Energy Transition Accelerator to utilize carbon markets to promote deployment of renewable energy and support a transition away from fossil fuels. The COP27 announcements also included an update to the Methane Emissions Reduction Action Plan and an affirmation of progress under the “Global Methane Pledge” that aims to cut global methane pollution at least 30% by 2030 relative to 2020 levels, which was announced in the prior year. Over the long term, international participation in the Paris Agreement framework could reduce overall demand for coal which could have a material adverse impact on us. These effects could be more adverse to the extent the United States continues to participate in these reduction programs (whether via the Paris Agreement or otherwise).

Several U.S. states have enacted legislation establishing greenhouse gas emissions reduction goals or requirements or joined regional greenhouse gas reduction initiatives. Many states also have enacted legislation or regulations requiring electricity suppliers to use renewable energy sources to generate a certain percentage of power, provide financial incentives to electricity suppliers for using renewable energy sources or impose costs on emitters of greenhouse gases in the electric generation sector. For example, eleven northeastern and mid-Atlantic states currently are members of the Regional Greenhouse Gas Initiative, which is a mandatory cap-and-trade program established in 2005 to cap regional carbon dioxide emissions from power plants. Similarly, California and Quebec remain members of the Western Climate Initiative, which was formed in 2008 to establish a voluntary regional greenhouse gas reduction goal and develop market-based strategies to achieve emissions reductions, and those two jurisdictions have adopted their own greenhouse gas cap-and-trade regulations and a joint “cap and trade” emissions reduction program. Any particular state, or any of these or other regional group, may have or adopt in the future rules or policies that cause some users of coal to switch from coal to a lower carbon fuel. There can be no assurance at this time that any new carbon dioxide cap-and-trade-program, carbon tax or other regulatory or policy regime, if implemented by any one or more states or regions in

which our customers operate or at the federal level, will not affect the future market for coal in those states or regions and lower the overall demand for coal.

Clean Water Act. The federal Clean Water Act (sometimes shortened to CWA) and corresponding state and local laws and regulations affect coal mining operations by restricting the discharge of pollutants, including dredged and fill materials, into waters of the United States. The Clean Water Act provisions and associated state and federal regulations are complex and subject to amendments, legal challenges and changes in implementation. Recent court decisions and regulatory actions have created uncertainty over Clean Water Act jurisdiction and permitting requirements that could variously increase or decrease the cost and time we expend on Clean Water Act compliance.

The scope of waters that fall within the Clean Water Act's jurisdiction is expansive and may include features not commonly understood to be a stream or wetland. In June 2015, the EPA and the Army Corps of Engineers (the "Corps") issued a new rule defining the scope of "waters of the United States" (WOTUS) that are subject to regulation. The 2015 WOTUS rule was challenged by a number of states and private parties in various federal courts. In December 2017, the EPA and the Corps proposed a rule to repeal the 2015 WOTUS rule. The repeal took effect on December 23, 2019. In December 2018, the EPA and Corps also formally proposed a new rule revising the definition of WOTUS. The new rule -- the Navigable Waters Protection Rule ("NWPR") -- became effective on June 22, 2020 and substantially reduced the scope of waters that fall within the Clean Water Act's jurisdiction, in part by excluding ephemeral streams, which potentially qualified as "Waters of the United States" under the 2015 WOTUS rule. Numerous challenges to the NWPR were filed, and in 2021 under the new Biden administration, the EPA and the Corps asked the courts in the pending litigation to remand the NWPR for agency reconsideration but to maintain the effect of the NWPR in the interim. In August 2021, a federal district court in Arizona declined the request and vacated the NWPR without specifying whether its decision applied nationwide. However, the EPA and the Corps announced on September 3, 2021 that they would revert to the pre-2015 rule until further notice. On December 7, 2021, the EPA and the Corps announced a new proposed rule, which would largely retain the pre-2015 regulatory framework with the addition of other waters that meet the "relatively permanent" or "significant nexus" standards and the agencies finalized the rule on December 30, 2022. On January 24, 2022, the U.S. Supreme Court decided to hear a challenge to EPA's interpretation of WOTUS. The case was argued before the Supreme Court in October 2022 and a decision has not yet been issued.

Clean Water Act requirements that may directly or indirectly affect our operations include the following:

- **Water Discharge.** Section 402 of the Clean Water Act creates a process for establishing effluent limitations for discharges to streams that are protective of water quality standards through the National Pollutant Discharge Elimination System, which we refer to as the NPDES, or an equally stringent program delegated to a state regulatory agency. Regular monitoring, reporting and compliance with performance standards are preconditions for the issuance and renewal of NPDES permits that govern discharges into waters of the United States. Discharges that exceed the limits specified under NPDES permits can lead to the imposition of penalties, and persistent non-compliance could lead to significant penalties, compliance costs and delays in coal production. In addition, the imposition of future restrictions on the discharge of certain pollutants into waters of the United States could increase the difficulty of obtaining and complying with NPDES permits, which could impose additional time and cost burdens on our operations.
- Discharges of pollutants into waters that states have designated as impaired (i.e., as not meeting present water quality standards) are subject to Total Maximum Daily Load, which we refer to as TMDL, regulations. The TMDL regulations establish a process for calculating the maximum amount of a pollutant that a water body can receive while maintaining state water quality standards. Pollutant loads are allocated among the various sources that discharge pollutants into that water body. Mine operations that discharge into water bodies designated as impaired will be required to meet new TMDL allocations. The adoption of more stringent TMDL-related allocations for our coal mines could require more costly water treatment and could adversely affect our coal production.

The Clean Water Act also requires states to develop anti-degradation policies to ensure that non-impaired water bodies continue to meet water quality standards. The issuance and renewal of permits for the discharge of pollutants to waters that have been designated as "high quality" are subject to anti-degradation

review that may increase the costs, time and difficulty associated with obtaining and complying with NPDES permits.

Under the Clean Water Act, citizens may sue to enforce NPDES permit requirements. Beginning in 2012, multiple citizens' suits were filed in West Virginia against mine operators for alleged violations of NPDES permit conditions requiring compliance with West Virginia's water quality standards. Some of the lawsuits alleged violations of water quality standards for selenium, whereas others alleged that discharges of conductivity and sulfate were causing violations of West Virginia water quality standards that prohibit adverse effects to aquatic life. The suits sought penalties as well as injunctive relief that would limit future discharges of selenium, conductivity or sulfate through the implementation of expensive treatment technologies. The federal district court for the Southern District of West Virginia has ruled in favor of the citizen suit groups in multiple suits alleging violations of the water quality standard for selenium and in two suits alleging violations of water quality standards due to discharge of conductivity (one of which was upheld on appeal by the United States Court of Appeals for the Fourth Circuit in January 2017). In 2015, the West Virginia Legislature amended the West Virginia Water Pollution Control Act and associated rules to expressly prohibit the direct enforcement of water quality standards against permit holders. On March 27, 2019, the EPA approved these changes.

Citizens may also sue under the Clean Water Act when pollutants are being discharged without NPDES permits. Beginning in 2013, multiple citizens' suits were filed in West Virginia against landowners alleging ongoing discharges of pollutants, including selenium and conductivity, from valley fills at reclaimed mining sites. In each case, the reclamation bond had been released and the mining and NPDES permits had been terminated following the completion of reclamation. While it is difficult to predict the outcome of such suits, any determination that discharges from valley fills require NPDES permits could result in increased compliance costs following the completion of mining at our operations.

- *Dredge and Fill Permits.* Many mining activities, such as the development of refuse impoundments, fresh water impoundments, refuse fills, valley fills, and other similar structures, may result in impacts to waters of the United States, including wetlands, streams and, in certain instances, man-made conveyances that have a hydrologic connection to such streams or wetlands. Under the Clean Water Act, coal companies are required to obtain a Section 404 permit from the Corps, prior to conducting such mining activities. The Corps is authorized to issue general "nationwide" permits for specific categories of activities that are similar in nature and that are determined to have minimal adverse effects on the environment. Permits issued pursuant to Nationwide Permit 21, which we refer to as NWP 21, generally authorize the disposal of dredged and fill material from surface coal mining activities into waters of the United States, subject to certain restrictions. Since March 2007, permits under NWP 21 were reissued for a five-year period with new provisions intended to strengthen environmental protections. There must be appropriate mitigation in accordance with nationwide general permit conditions rather than less restricted state-required mitigation requirements, and permit holders must receive explicit authorization from the Corps before proceeding with proposed mining activities. Notwithstanding the additional environmental protections designed in the NWP 21, on July 15, 2009, the Corps proposed to immediately suspend the use of NWP 21 in six Appalachian states, including West Virginia, Kentucky and Virginia where the Company conducts operations. On June 17, 2010, the Corps announced that it had suspended the use of NWP 21 in the same six states although it remained for use elsewhere. In February 2012, the Corps proposed to reissue NWP 21, albeit with significant restrictions on the acreage and length of stream channel that can be filled in the course of mining operations. The Corps' decisions regarding the use of NWP 21 does not prevent the Company's operations from seeking an individual permit under § 404 of the CWA, nor does it restrict an operation from utilizing another version of the nationwide permit, NWP 50, authorized for small underground coal mines that must construct fills as part of their mining operations. On January 13, 2021, the Corps published a final rule modifying its NWP program. The final rule replaced several of the 2017 NWPs, including NWP 21 and NWP 50, and added several new NWPs. The Corps removed the provision in NWP 21 and NWP 50 requiring the permittee to "receive a written authorization" from the Corps before commencing the covered activity.

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act, which we refer to as RCRA, may affect coal mining operations through its requirements for the management, handling, transportation and disposal of hazardous wastes. Many mining wastes are excluded from the regulatory definition of hazardous wastes, and coal mining operations covered by SMCRA permits are by statute exempted from RCRA permitting. RCRA also allows the EPA to require corrective action at sites where there is a release of hazardous substances. In addition, each state has its own laws regarding the proper management and disposal of waste material. In June 2010, the EPA released a proposed rule to regulate the disposal of certain coal combustion residuals, which we refer to as CCR. The proposed rule set forth two very different options for regulating CCR under RCRA. The first option called for regulation of CCR as a hazardous waste under Subtitle C, which creates a comprehensive program of federally enforceable requirements for waste management and disposal. The second option utilized Subtitle D, which would give the EPA authority to set performance standards for waste management facilities and would be enforced primarily through citizen suits. The proposal left intact the so-called Beville exemption for beneficial uses of CCR. The EPA finalized the CCR rule on December 19, 2014, setting nationwide solid nonhazardous waste standards for CCR disposal. On April 17, 2015, the EPA finalized regulations under the solid waste provisions (Subtitle D) of RCRA and not the hazardous waste provisions (Subtitle C) which became effective on October 19, 2015. The final rule establishes national minimum criteria for existing and new CCR landfills, surface impoundments and lateral expansions, and also establishes structural integrity criteria for new and existing surface impoundments (including establishing requirements for owners and operators to conduct periodic structural integrity-related assessments). The criteria include location restrictions, design and operating criteria, groundwater monitoring and corrective action, closure requirements and post-closure care and recordkeeping, notification and internet posting requirements. While classification of CCR as a hazardous waste would have led to more stringent restrictions and higher costs, this regulation may still increase our customers' operating costs and potentially reduce their ability to purchase coal. In addition, contamination caused by the past disposal of CCR, including coal ash, could lead to citizen suit enforcement against our customers under RCRA or other federal or state laws and potentially reduce the demand for coal. In another development regarding coal combustion wastes, the EPA conducted an assessment of impoundments and other units that manage residuals from coal combustion and that contain free liquids following a massive coal ash spill in Tennessee in 2008. The EPA contractors conducted site assessments at many impoundments and is requiring appropriate remedial action at any facility that is found to have a unit posing a risk for potential failure. The EPA is posting utility responses to the assessment on its web site as the responses are received. After industry groups filed a suit in the D.C. Circuit, challenging the 2015 rule, former EPA Administrator Pruitt issued a letter on September 13, 2017 indicating the agency's decision to reconsider the rule in response to industry petitions. On August 22, 2018, the D.C. Circuit remanded the rule at the EPA's request. On August 28, 2020, the EPA issued a final revised rule that modifies standards regarding beneficial use and assessing environmental harm, and extends deadlines for regulated entities to come into compliance. Environmental groups sought to challenge the rule, but the petition was untimely and was voluntarily dismissed. Future regulations resulting from the EPA coal combustion refuse assessments may impact the ability of the Company's utility customers to continue to use coal in their power plants. In 2022, the EPA issued additional interpretation of its closure performance standards for CCR impoundments that are likely to impose additional expense for facility closures.

Comprehensive Environmental Response, Compensation and Liability Act. The Comprehensive Environmental Response, Compensation and Liability Act, which we refer to as CERCLA, and similar state laws affect coal mining operations by, among other things, imposing cleanup requirements for threatened or actual releases of hazardous substances that may endanger public health or welfare or the environment. Under CERCLA and similar state laws, joint and several liability may be imposed on waste generators, site owners and lessees and others regardless of fault or the legality of the original disposal activity. Although the EPA excludes most wastes generated by coal mining and processing operations from the hazardous waste laws, such wastes can, in certain circumstances, constitute hazardous substances for the purposes of CERCLA. In addition, the disposal, release or spilling of some products used by coal companies in operations, such as chemicals, could trigger the liability provisions of the statute. Thus, coal mines that we currently own or have previously owned or operated, and sites to which we sent waste materials, may be subject to liability under CERCLA and similar state laws. In particular, we may be liable under CERCLA or similar state laws for the cleanup of hazardous substance contamination at sites where we own surface rights.

Endangered Species. The Endangered Species Act and other related federal and state statutes protect species threatened or endangered with possible extinction. Protection of threatened, endangered and other special status species may have the effect of prohibiting or delaying us from obtaining mining permits and may include restrictions on timber

harvesting, road building and other mining or agricultural activities in areas containing the affected species. A number of species indigenous to our properties are protected under the Endangered Species Act or other related laws or regulations. Based on the species that have been identified to date and the current application of applicable laws and regulations, however, we do not believe there are any species protected under the Endangered Species Act that would materially and adversely affect our ability to mine coal from our properties in accordance with current mining plans. We have been able to continue our operations within the existing spatial, temporal and other restrictions associated with special status species. In its final rule published on December 16, 2020, the FWS adopted a regulatory definition of “habitat” for the first time, which could have important consequences for future designations of “critical habitat” under the Endangered Species Act. In October 2021, the Biden administration published rules that changed the definition of “habitat” and altered a policy that made it easier to exclude territory from critical habitat. Designation of critical habitat by the FWS can affect projects that require federal agency permits or funding, because section 7 of the Endangered Species Act requires federal agencies to ensure, through consultation with the FWS, that their actions are not likely to adversely modify or destroy designated critical habitat. Should more stringent protective measures be developed and applied to threatened, endangered or other special status species or to their critical habitat, then we could experience increased operating costs or difficulty in obtaining future mining permits.

Use of Explosives. Our surface mining operations are subject to numerous regulations relating to blasting activities. Pursuant to these regulations, we incur costs to design and implement blast schedules and to conduct pre-blast surveys and blast monitoring. In addition, the storage of explosives is subject to strict regulatory requirements established by four different federal regulatory agencies. For example, pursuant to a rule issued by the Department of Homeland Security in 2007, facilities in possession of chemicals of interest, including ammonium nitrate at certain threshold levels, must complete a screening review in order to help determine whether there is a high level of security risk such that a security vulnerability assessment and site security plan will be required.

Other Environmental Laws. We are required to comply with numerous other federal, state and local environmental laws in addition to those previously discussed. These additional laws include, for example, the Safe Drinking Water Act, the Toxic Substance Control Act and the Emergency Planning and Community Right-to-Know Act.

Human Capital Resources

At December 31, 2022, Arch and its subsidiaries currently employ more than 3,400 people that are non-unionized in the United States and four employees overseas. Management believes that it has good relations with its employees.

Arch’s responsible and respectful corporate culture has allowed it to attract and retain an experienced, talented and high-performing workforce. The Company and its subsidiaries had an average voluntary retention rate of 88% in 2022. Approximately 40% of the Company’s workforce had at least 10 years of Company service in 2022.

Health and Safety. Safety is a deeply engrained value at Arch. We have consistently led our large, integrated peers in safety performance, as measured by lost-time incident rate.

The Company averaged 0.57 lost-time incidents per 200,000 employee-hours worked at December 31, 2022 in comparison to a national average lost-time incident rate of 2.13 (which represents the national average through the third quarter of 2022).

Across the organization, employees engage in a proactive, behavior-based approach to safety. Every field employee participates in safety training on an ongoing basis, and nearly 100 percent of our field employees have been trained as safety observers. If an at-risk behavior or a barrier to safe behavior is identified, employees are empowered to engage and to apply their training to resolve the potentially unsafe condition or practice immediately.

Since launching the behavior-based program in 2007, Arch’s operating subsidiaries have recorded a total of 1.97 million safety observations and in so doing have created a deep, employee-driven safety culture. Most importantly, the process has resulted in the successful modification of at-risk behaviors and has served as a platform for reinforcing

positive behaviors. In addition, Arch operations conduct safety meetings in advance of every shift, to ensure that every employee begins every workday sharply focused on working safely.

Our safety focus is also evident in our response to the COVID-19 pandemic. We have instituted many policies and procedures, in alignment with CDC guidelines state and local mandates, to protect our employees during the COVID-19 outbreak. These policies and procedures include, but are not limited to, staggering shift times to limit the number of people in common areas at one time, limiting meetings and meeting sizes, wearing masks, vaccine incentives, continual cleaning and disinfecting of high touch and high traffic areas, including door handles, bath rooms, bath houses, access elevators, mining equipment, and other areas, limiting contractor access to our properties, limiting business travel, and instituting work from home for administrative employees. We continually evaluate our policies and procedures, in accordance with CDC, state, and local guidelines, and make any necessary adjustments to respond to the particular circumstances in the areas in which we operate.

Training and Development. We recognize the importance of furthering education and development of our employees through the various stages of their careers. To that end, we offer free access to thousands of courses that are designed for personal and career development through an online education platform. A number of these courses are tailored so employees can earn Continuing Education Units (CEU), Professional Development Hours (PDH), and Professional Engineering (PE) Units to fulfill accreditation requirements. Additionally, employees are eligible for a tuition reimbursement benefit through a program designed to encourage and support development of employee skills by providing financial assistance for an approved course of study. In the past five years, Arch's tuition reimbursement program totaled more than \$1 million. These programs reflect our view that ongoing employee development is good business as well as a valuable benefit that can help attract and retain talented and skilled people.

We also invest significantly in the development of our next generation of leaders. Over the past five years, we have designed and conducted ongoing multi-day leadership workshops designed to educate high-potential corporate and subsidiary employees about our strategic direction, financial position, asset base and corporate culture, as well as to enhance leadership skillsets. More than 450 high-potential employees have participated in those workshops, with the Company's senior management team and other senior leaders participating in the training sessions.

In addition, we hold a safety and environmental stewardship summit at our headquarters location in Saint Louis each year. More than 240 employees from all subsidiary mine sites in addition to the senior leadership team and corporate employees participate in this summit each year, which creates opportunities for sharing best practices across the operations while reinforcing the Company's deep commitment to excellence in these critical areas of performance.

Information about our Executive Officers

The following is a list of our executive officers, their ages as of February 16, 2023 and their positions and offices during the last five years:

Name	Age	Position
Paul T. Demzik	61	Mr. Demzik has served as our Senior Vice President and Chief Commercial Officer since January 2019. From June 2013 to January 2019, Mr. Demzik served as Head of Thermal Coal Trading with Anglo American Marketing Limited in London and served as President of Peabody COALTRADE, LLC from July 2005 to July 2012.
John T. Drexler	53	Mr. Drexler has served as our Senior Vice President and Chief Operating Officer since 2020. Mr. Drexler served as our Senior Vice President and Chief Financial Officer from 2008 to 2020 and our Vice President-Finance and Accounting from 2006 to 2008. From 2005 to 2006, Mr. Drexler served as our Director of Planning and Forecasting. Prior to 2005, Mr. Drexler held several other positions within our finance and accounting department. Mr. Drexler also served on the board of Knight Hawk Holdings, LLC.
John W. Eaves	65	Mr. Eaves has served as our Executive Chairman of the Board of Directors since retiring as Chief Executive Officer in 2020. Mr. Eaves was our Chief Executive Officer from 2012 to 2020. Mr. Eaves served as our Chairman of the Board from 2015 to 2016 and our President and Chief Operating Officer from 2006 to 2012. From 2002 to 2006, Mr. Eaves served as our Executive Vice President and Chief Operating Officer. Mr. Eaves currently serves on the board of the CF Industries Holdings, Inc. Mr. Eaves was previously a Director of Advanced Emissions Solutions, Inc., The National Association of Manufacturers, The National Mining Association, and former Chairman of the National Coal Council.
Matthew C. Giljum	51	Mr. Giljum has served as our Chief Financial Officer since 2020. Mr. Giljum served as our Vice President of Finance and Treasurer from 2015 to 2020. Prior to that role, he served as the Company's Vice President of Finance, as well as a number of other positions of increasing responsibility in the Company's finance department.
Rosemary L. Klein	55	Ms. Klein has served as our Senior Vice President - Law, General Counsel and Secretary since October 2020. Prior to that she served as special counsel in the Company's legal department since 2015. Prior to joining the Company in 2015, Ms. Klein served as general counsel and corporate secretary - and held other senior leadership roles - at several multinational, publicly held corporations, including Solutia Inc. and Spartech Corporation.
Paul A. Lang	62	Mr. Lang has served as our President and Chief Executive Officer since 2020. Mr. Lang served as our President and Chief Operating Officer since April 2015 and has served as our Executive Vice President and Chief Operating Officer since April 2012 and as our Executive Vice President-Operations from August 2011 to April 2012. Mr. Lang served as Senior Vice President-Operations from 2006 through August 2011, as President of Western Operations from 2005 through 2006 and President and General Manager of Thunder Basin Coal Company from 1998 to 2005. Mr. Lang is a member of the Board of The National Mining Association and the Board of Trustees of Missouri University of Science and Technology. Mr. Lang has also served as Director of Knight Hawk Holdings, LLC and served on the development board of the Mining Department of the Missouri University of Science & Technology, and is the former chairman of the University of Wyoming's School of Energy Resources Council.
Deck S. Slone	59	Mr. Slone has served as our Senior Vice President-Strategy and Public Policy since June 2012. Mr. Slone served as our Vice President-Government, Investor and Public Affairs from 2008 to June 2012. Mr. Slone served as our Vice President-Investor Relations and Public Affairs from 2001 to 2008. In the past Mr. Slone served as the chairman of the National Coal Council, the co-chair of the Carbon Utilization Research Council, and the Chair of the National Mining Association's Energy Policy Task Force.
John A. Ziegler, Jr.	56	Mr. Ziegler has served as our Senior Vice President & Chief Administrative Officer since January 2019. Mr. Ziegler served as our Chief Commercial Officer since March 2014. Mr. Ziegler served as our Vice President-Human Resources from April 2012 to March 2014. From October 2011 to April 2012, Mr. Ziegler served as our Senior Director-Compensation and Benefits. From 2005 to October 2011 Mr. Ziegler served as Vice President-Contract Administration, President of Sales, then finally Senior Vice President, Sales and Marketing and Marketing Administration. Mr. Ziegler joined Arch in 2002 as Director-Internal Audit. Prior to joining Arch Resources, Mr. Ziegler held various finance and accounting positions with bioMerieux and Ernst & Young.

Available Information

We file annual, quarterly and current reports, and amendments to those reports, proxy statements and other information with the Securities and Exchange Commission. You may access and read our filings without charge through the SEC's website, at *sec.gov*.

We also make the documents listed above available without charge through our website, *archrsc.com*, as soon as practicable after we file or furnish them with the SEC. You may also request copies of the documents, at no cost, by telephone at (314) 994-2700 or by mail at Arch Resources, Inc., 1 CityPlace Drive, Suite 300, St. Louis, Missouri, 63141 Attention: Senior Vice President-Strategy and Public Policy. The information on our website is not part of this Annual Report on Form 10-K.

GLOSSARY OF SELECTED MINING TERMS

Certain terms that we use in this document are specific to the coal mining industry and may be technical in nature. The following is a list of selected mining terms and the definitions we attribute to them.

Bituminous coal	Coal used primarily to generate electricity and to make coke for the steel industry with a heat value ranging between 10,500 and 15,500 Btus per pound.
Btu	A measure of the energy required to raise the temperature of one pound of water one degree of Fahrenheit.
Coking coal	Coal used to produce coke, the primary source of carbon used in steelmaking.
Compliance coal	Coal which, when burned, emits 1.2 pounds or less of sulfur dioxide per million Btus, requiring no blending or other sulfur dioxide reduction technologies in order to comply with the requirements of the Clean Air Act.
Continuous miner	A machine used in underground mining to cut coal from the seam and load it onto conveyors or into shuttle cars in a continuous operation.
Dragline	A large machine used in surface mining to remove the overburden, or layers of earth and rock, covering a coal seam. The dragline has a large bucket, suspended by cables from the end of a long boom, which is able to scoop up large amounts of overburden as it is dragged across the excavation area and redeposit the overburden in another area.
Hard coal	Coking coal of gross calorific value greater than 5700 kcal/kg on an ash free but moist basis and further disaggregated into anthracite, coking coal and other bituminous coal.
High-Vol A	A coking coal used in steel production with a volatile matter content between 31% and 34.5% on a dry basis.
High-Vol B	A coking coal used in steel production with a volatile matter content between 34.5% and 38% on a dry basis.
Indicated mineral resource	Indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.
Inferred mineral resource	Inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project, and may not be converted to a mineral reserve.
Lignite Coal	Coal with the lowest carbon content and a heat value ranging between 4,000 and 8,300 Btus per pound.
Longwall mining	One of two major underground coal mining methods, generally employing two rotating drums pulled mechanically back and forth across a long face of coal.
Low-sulfur coal	Coal which, when burned, emits 1.6 pounds or less of sulfur dioxide per million Btus.
Low-Vol	A coking coal used in steel production with a volatile matter content between 16% and 23% on a dry basis.

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Measured mineral resource	Measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in S-K 1300, in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.
Metallurgical coal	Coal used in steel production either as coking coal or pulverized coal injection (PCI).
Mid-Vol	A coking coal used in steel production with a volatile matter greater than 22% but less than 31% on a dry basis.
Preparation plant	A facility used for crushing, sizing and washing coal to remove impurities and to prepare it for use by a particular customer.
Probable mineral reserves	Probable mineral reserve is the economically mineable part of an indicated and, in some cases, a measured mineral resource.
Proven mineral reserves	Proven mineral reserve is the economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.
Pulverized coal injection coal (PCI)	Coal that is introduced directly into the blast furnace as a source of energy and carbon in the steelmaking process.
Reclamation	The restoration of land and environmental values to a mining site after the coal is extracted. The process commonly includes “recontouring” or shaping the land to its approximate original appearance, restoring topsoil and planting native grass and ground covers.
Qualified Person	Qualified Person or “QP” is an individual who is 1) a mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant; and 2) an eligible member or license in good standing of a recognized professional organization at the time of the technical report summary (TRS) is prepared.
Reserves	Reserves or mineral reserve is an estimate of tonnage and grade or quality of indicated and measured mineral resources that, in the opinion of the qualified person, can be the basis of an economically viable project. More specifically, it is the economically mineable part of a measured or indicated mineral resource, which includes diluting materials and allowances for losses that may occur when the material is mined or extracted.
Resources	Resources or mineral resources is a concentration or occurrence of material of economic interest on the earth’s crust in such form, grade or quality, and quantity that there are reasonable prospects for economic extraction. A mineral resource is a reasonable estimate of mineralization, taking into account relevant factors such as cut-off grade, likely mining dimensions, location or continuity, that, with the assumed and justifiable technical and economic conditions, is likely to, in whole or in part, become economically extractable. It is not merely an inventory of all mineralization drilled or sampled.
Room-and-pillar mining	One of two major underground coal mining methods, utilizing continuous miners creating a network of “rooms” within a coal seam, leaving behind “pillars” of coal used to support the roof of a mine.
Subbituminous coal	Coal used primarily to generate electricity with a heat value ranging between 8,300 and 13,000 Btus per pound.
Technical Report Summary (TRS)	A technical report summary or “TRS” report provides a statement a company’s coal reserves and has been prepared by a qualified person “QP” in accordance with the United States Securities and Exchange Commission (SEC), Regulation S-K 1300 for Mining Property Disclosure.

ITEM 1A. RISK FACTORS.

Our business involves certain risks and uncertainties. In addition to the risks and uncertainties described below, we may face other risks and uncertainties, some of which may be unknown to us and some of which we may deem immaterial. The following review of important risk factors should not be construed as exhaustive and should be read in conjunction with other cautionary statements that are included herein or elsewhere. If one or more of these risks or uncertainties occur, our business, financial condition or results of operations may be materially and adversely affected.

Summary Risk Factors

Our business is subject to a number of risks, including risks that may prevent us from achieving our business objectives or may adversely affect our business, financial condition, results of operations, cash flows. These risks are discussed more fully below and include, but are not limited to, risks related to:

Risks Related to Our Operations and Industry

- The loss of availability, reliability and cost-effectiveness of transportation facilities and fluctuations in transportation costs;
- Inflationary pressures and availability of mining and other industrial supplies;
- A decline in coal prices;
- Volatile economic and market conditions;
- Operating risks related to our coal mining operations that are beyond our control;
- The effects of foreign and domestic trade policies;
- Competition from alternative fuel sources or subsidized renewables, including with respect to transportation, could put downward pressure on coal prices;
- Our customers are continually evaluating alternative steel production technologies;
- Changes in purchasing patterns in the coal industry;
- The loss of, or a significant reduction in, purchases by our largest customers;
- Disruptions in the quantities of coal purchased from other third parties;
- International growth in our sales adds new and unique risks to our business;
- Our ability to collect payments from our customers;
- Failure to obtain or renew surety bonds or insurance;
- We may not have adequate insurance coverage for some business risks;
- Inaccuracies in our estimates of our coal reserves;
- A defect in title or the loss of a leasehold interest in certain properties or surface rights;
- We may incur losses as a result of certain marketing and asset optimization strategies;
- Any decrease in the coal consumption of electric power generators could result in less demand and lower prices for thermal coal;
- If we or our service providers sustain cyber-attacks or other security incidents that disrupt our operations or involve unauthorized access to proprietary, confidential or personally identifiable information;
- Our inability to acquire additional coal reserves or our inability to develop coal reserves;
- We may not be able to pay dividends or repurchase shares of our common stock in accordance with our announced intent or at all;
- Our ability to operate our business effectively could be impaired if we lose key personnel or fail to attract qualified personnel;
- The COVID-19 pandemic;

Risks Related to Environmental, Other Regulations and Legislation

- Extensive environmental regulations, including existing and potential future regulatory requirements relating to air emissions, affect our customers and could reduce the demand for coal as a fuel source;
- Increased pressure from political and regulatory authorities, along with environmental activist groups, and lending and investment policies adopted by financial institutions and insurance companies to address concerns about the environmental impacts of coal combustion;
- Increased attention to environmental, social or governance (“ESG”) matters could adversely impact our business and the value of the company.
- Our failure to obtain and renew permits necessary for our mining operations could negatively affect our business;
- Federal or state regulatory agencies have the authority to order certain of our mines to be temporarily or permanently closed under certain circumstances;
- Extensive environmental regulations impose significant costs on our mining operations, and future regulations could materially increase those costs or limit our ability to produce and sell coal;
- If the assumptions underlying our estimates of reclamation and mine closure obligations are inaccurate;
- Our operations may impact the environment or cause exposure to hazardous substances, and our properties may have environmental contamination;
- Changes in the legal and regulatory environment could complicate or limit our business activities, increase our operating costs or result in litigation;

Risks Related to Income Taxes

- Our ability to use net operating losses is subject to a current limitation and may be subject to additional limitations in the future.
- U.S. tax legislation may materially adversely affect our financial condition, results of operations and cash flows;

Risks Related to Our Operations and Industry

The loss of availability, reliability and cost-effectiveness of transportation facilities and fluctuations in transportation costs could affect the demand for our coal or impair our ability to supply coal to our customers.

We depend upon third party transportation systems, including rail, barge, and truck, as well as seaborne vessels and port facilities, to deliver coal to our customers. Disruptions in transportation services due to weather-related problems, mechanical difficulties, labor shortages, mismanagement by the service providers, strikes, lockouts, bottlenecks, route closures, natural disasters and health crises, such as the COVID-19 pandemic, and other events beyond our control, could impair our ability to supply coal to our customers. Decreased performance levels and the lack of reliability from these third-party transportation providers, over longer periods of time could cause our customers to look to other sources for their coal needs. In addition, increases in transportation costs, including the price of fuel, could make coal a less competitive source of energy when compared to alternative fuels or could make coal produced in one region of the United States less competitive than coal produced in other regions of the United States or abroad.

Poor rail service, particularly from the western railroads, could lead to continued demand destruction as domestic utilities have had to curtail some of their coal generation and enter a coal conservation mode. This failure to provide adequate rail service has diminished the historic reliability of the coal-fired power plants, and continues to add uncertainty into the market.

If we experience disruptions in our transportation services or if transportation costs increase significantly and we are unable to find alternative transportation providers, our coal mining operations may be disrupted, we could experience a delay or halt of production or our profitability could decrease significantly. In addition, a growing portion of our coal sales in recent years has been into export markets, and we are actively seeking additional international customers. Our ability to maintain and grow our export sales revenue and margins depends on several factors, including the existence of

sufficient and cost-effective export terminal capacity for the shipment of coal to foreign markets and the ability of third-party transportation providers to adequately provide a cost-effective service. At present, there is limited terminal capacity for the export of coal into foreign markets. Our access to existing and future terminal capacity may be adversely affected by, among other factors, regulatory and permit requirements, environmental and other legal challenges, public perceptions and resulting political pressures, foreign and domestic trade policies, operational issues at terminals and competition among domestic coal producers for access to limited terminal capacity. If we are unable to maintain terminal capacity, or are unable to access additional future terminal capacity for the export of our coal on commercially reasonable terms, or at all, our results could be materially and adversely affected.

From time to time we enter into “take or pay” contracts for rail and port capacity related to our export sales. These contracts require us to pay for a minimum quantity of coal to be transported on the railway or through the port, regardless of whether we sell and ship any coal. If we fail to acquire sufficient export sales to meet our minimum obligations under these contracts, we are still obligated to make payments to the railway or port facility, which could have a negative impact on our cash flows, profitability and results of operations.

Inflationary pressures for mining and other industrial supplies, including steel-based supplies, diesel fuel and rubber tires, or the inability to obtain a sufficient quantity of those supplies, could negatively affect our operating costs or disrupt or delay our production.

Inflation rates in the U.S. have increased to levels not seen in several decades, which could result in decreased demand for our products, increased operating costs, increased interest rates and constrained liquidity, reduced government spending and volatility in financial markets. Our coal mining operations use significant amounts of steel, diesel fuel, explosives, rubber tires and other mining and industrial supplies. The cost of roof control supplies, including roof bolts and plates, we use in our underground mining operations depends on the price of steel. We also use significant amounts of diesel fuel, explosives and tires for trucks and other heavy machinery, particularly at our Black Thunder mining complex. Future increases in costs for supplies that are used directly or indirectly in the normal course of our business and increases in other operating costs, such as increases in steel prices, freight rates, labor and other materials and supplies may negatively impact our profitability.

Due to the decline in the mining industry, there has been a corresponding decrease in the number of providers of mining equipment and supplies. If we are unable to procure these equipment and supplies, our coal mining operations may be disrupted or we could experience a delay or halt in our production. Any of the foregoing events could materially and adversely impact our business, financial condition, results of operations and cash flows.

Coal prices are subject to change based on a number of factors and can be volatile. If there is a decline in prices, it could materially and adversely affect our profitability and the value of our coal reserves.

Our profitability and the value of our coal reserves depend upon the prices we receive for our coal. The contract prices we may receive in the future for coal depend upon factors beyond our control, including the following:

- the domestic and foreign demand for coal, which depends significantly on the demand for steel and electricity;
- overall global economic activity and growth and the unknown geopolitical consequences of the Russian invasion of Ukraine and other macro issues;
- competition for production of steel from non-coal sources including, electric arc furnaces, which may limit demand for coking coal;
- the quantity and quality of coal available from our peers and alternative sources of fuel;
- competition for subsidized renewable energy production;
- domestic and foreign air emission standards for coal-fueled power plants and blast furnaces and the ability to meet these standards;
- adverse weather, climatic or other natural conditions, including unseasonable weather patterns;
- domestic and foreign economic conditions, including economic slowdowns and the exchange rates of U.S. dollars for foreign currencies;

- domestic and foreign legislative, regulatory and judicial developments, environmental regulatory changes or changes in energy policy and energy conservation measures that could adversely affect the coal industry, such as legislation limiting carbon emissions or providing for increased funding and incentives for alternative energy sources;
- the imposition of tariffs, quotas, trade barriers and other trade protection measures;
- the proximity to, capacity of, and cost of transportation and port facilities; and
- technological advancements, including those related to hydrogen-based steel production alternative energy sources, those intended to convert coal-to-liquids or gas.

Declines in the prices we receive for our future coal sales contracts, could materially and adversely affect us by decreasing our profitability, cash flows, liquidity and the value of our coal reserves.

Volatile economic and market conditions have affected and in the future may continue to affect our revenues and profitability.

Global economic downturns have negatively impacted, and in the future could negatively impact, our revenues and profitability. Our profitability depends, in large part, on conditions in the markets that we serve, which fluctuate in response to various factors beyond our control. The prices at which we sell our coal are largely dependent on prevailing market prices. We have experienced significant price volatility at times during the past several years.

Economic conditions, including those caused by the continuing effects of the COVID-19 pandemic, rising inflation and interest rates, the continued conflict between Russia and Ukraine, and supply chain disruptions have led to extreme volatility of prices. If there are further downturns in economic conditions, our and our customers' businesses, financial condition and results of operations could be adversely affected. There can be no assurance that our cost control actions and capital discipline, or any other actions that we may take, will be sufficient to offset any adverse effect these conditions may have on our business, financial condition or results of operations.

Our coal mining operations are subject to operating risks that are beyond our control, which could result in materially increased operating expenses and decreased production levels and could materially and adversely affect our profitability.

We conduct underground and surface mining operations. Certain factors beyond our control, including those listed below, could disrupt our coal mining operations, adversely affect production and shipments and increase our operating costs:

- poor mining conditions resulting from geological, hydrologic or other conditions that may cause production challenges, instability of highwalls or spoil piles or cause damage to nearby infrastructure or mine personnel;
- a major incident at the mine site that causes all or part of the operations of the mine to cease for some period of time;
- mining, processing and plant equipment failures and unexpected maintenance problems;
- adverse weather and natural disasters, such as heavy rains or snow, flooding and other natural events affecting operations, transportation or customers, and public health crises, such as the COVID-19 pandemic;
- the unavailability of raw materials, equipment (including heavy mobile equipment) or other critical supplies such as motors, tires, explosives, fuel, lubricants and other consumables of the type, quantity and/or size needed to meet production expectations;
- unexpected or accidental surface subsidence from underground mining;
- disputes over access and subsidence rights;
- accidental mine water discharges, fires, gas inundations, explosions or similar mining accidents;
- actions of state and federal authorities that regulate the operations;
- delays, closures, or labor unavailability by third parties that transport coal shipments or other products; and
- competition and/or conflicts with other natural resource extraction activities and production within our operating areas, such as coalbed methane extraction or oil and gas development.

If any of these conditions or events occurs, our coal mining operations may be disrupted and we could experience a delay or halt of production or shipments or our operating costs could increase significantly. In addition, if our insurance coverage is limited or excludes certain of these conditions or events, then we may not be able to recover, or recover fully, for losses incurred as a result of such conditions or events, some of which may be substantial.

The effects of foreign and domestic trade policies, actions or disputes on the level of trade among the countries and regions in which we operate could negatively impact our business, financial condition or results of operations.

Trade barriers such as tariffs imposed by the United States could potentially lead to trade disputes with other foreign governments and adversely impact global economic conditions. For instance, as a result of a near term ban on Australian coal exports to China, traders and buyers have diverted cargoes into other markets around the world, including India and Europe which has disrupted the traditional trading routes for metallurgical coal. Further, in March 2018, the United States imposed a 25% tariff on all imported steel into the United States citing national security interests, which resulted in certain foreign countries imposing offsetting tariffs in retaliation. In December 2021, the Biden Administration revised the 25% tariff with the European Union to a tariff-rate quota on imports greater than a certain tonnage amount, and continued the original Section 232 tariffs, under the Trade Expansion Act of 1962, as amended, with respect to all other importers of steel into the United States. Continued or worsening United States-China trade tensions may result in additional tariffs or other protectionist measures that could materially, adversely affect foreign demand for our coal.

In addition, potential changes to international trade agreements, trade policies, trade concessions or other political and economic arrangements may benefit coal producers operating in countries other than the United States. We may not be able to compete on the basis of price or other factors with companies that, in the future, benefit from favorable foreign trade policies or other arrangements.

We face risks related to the ongoing Russia-Ukraine war that began in February 2022. The extent and duration of the military conflict involving Russia and Ukraine, resulting sanctions and future market or supply disruptions in the region, are impossible to predict, but could be significant and may have a severe adverse effect on the region. Globally, various governments, such as the European Union, have banned imports from Russia including commodities such as natural gas and coal. These events significantly impacted coal markets by disrupting previously existing trading patterns. The resulting volatility, including market expectations of potential changes in coal prices and inflationary pressures on steel products, may significantly affect prices for our coal or the availability and cost of supplies and equipment.

Competition, including with respect to transportation, could put downward pressure on coal prices and, as a result, materially and adversely affect our revenues and profitability.

We have significant competition with producers of other fuels, such as natural gas and subsidized renewables. Despite the recent uptick, natural gas pricing has declined significantly in recent years and has historically been the main basis for setting the price of our domestic thermal product. Historically, declines in the price of natural gas have caused demand for coal to decrease and have adversely affected the price of our coal. Sustained periods of low natural gas prices have, coupled with social policy decisions, have also contributed to utilities phasing out or closing existing coal-fired power plants, and could reduce or eliminate construction of any new coal-fired power plants. This longer-term trend has, and could continue to have, a material adverse effect on demand and prices for our coal. Moreover, the construction of new pipelines and other natural gas distribution channels may increase competition within regional markets and thereby decrease the demand for and price of our thermal coal.

In addition to other fuel sources, we compete with numerous other domestic and foreign coal producers for domestic and international sales. Overcapacity and increased production within the coal industry, both domestically and internationally, and decelerating steel demand have at times, and could in the future, materially reduce coal prices and therefore materially reduce our revenues and profitability. In addition, our ability to ship our coal to international customers depends on port capacity, which is limited, and has come under heightened pressure recently, as a

consequence of the COVID-19 pandemic. Increased competition within the coal industry for international sales could result in us not being able to obtain throughput capacity at port facilities, or the rates for such throughput capacity could increase to a point where it is not economically feasible to export our coal.

Our customers are continually evaluating alternative steel production technologies, which may reduce demand for our product.

Our principle product is a premium High-Vol metallurgical coal for blast furnace steel producers. Premium High-Vol metallurgical coal generally commands a significant price premium over other forms of coal because of its value in use in blast furnaces for steel production. Premium High-Vol metallurgical coal is a scarce commodity and has specific physical and chemical properties that can impact the efficiency of blast furnace operation. Alternative technologies are continually being investigated and developed with a view to reducing production costs or for other reasons, such as minimizing environmental or social impact. If competitive technologies emerge or are increasingly utilized that use other materials in place of our product or that diminish the required amount of our product, such as electric arc furnaces or pulverized coal injection processes, demand and price for our metallurgical coal might fall. Many of these alternative technologies are designed to use lower quality coals or other sources of carbon instead of higher cost High-Vol metallurgical coal. While conventional blast furnace technology has been the most economic large-scale steel production technology for several decades, and while emergent technologies typically take many years to commercialize, there can be no assurance that, over the longer -term, competitive technologies not reliant on High-Vol metallurgical coal could emerge which could reduce demand and price premiums for High-Vol metallurgical coal.

Our profitability depends upon the coal supply agreements we have with our customers. Changes in purchasing patterns in the coal industry could make it difficult for us to extend our existing coal supply agreements or to enter into new agreements in the future.

The success of our businesses depends on our ability to retain our current customers, renew our existing customer contracts and solicit new customers. Our ability to do so generally depends on a variety of factors, including the quality and price of our products, our ability to market these products effectively, our ability to deliver on a timely basis and the level of competition that we face. If current customers do not honor current contract commitments, or if they terminate agreements or exercise *force majeure* provisions allowing for the temporary suspension of their performance, our revenues will be adversely affected. Changes in the coal industry may cause some of our customers not to renew, extend or enter into new coal supply agreements or to enter into agreements to purchase fewer tons of coal or on different terms or prices than in the past. In addition, uncertainty caused by federal and state regulations, including under the U.S. Clean Air Act, could deter our customers from entering into coal supply agreements. Also, the availability and price of competing fuels, such as natural gas, as well as the use of tax incentives and public policy for renewable energy sources to deter coal consumption could influence the volume of coal a customer is willing to purchase under contract.

Our coal supply agreements typically contain *force majeure* provisions allowing the parties to temporarily suspend performance during specified events beyond their control. Most of our coal supply agreements also contain provisions requiring us to deliver coal that satisfies certain quality specifications, such as heat value, sulfur content, ash content, volatile matter, hardness and ash fusion temperature, among others. These provisions in our coal supply agreements could result in negative economic consequences to us, including price adjustments, having to purchase replacement coal in a higher-priced open market, the rejection of deliveries or, in the extreme, contract termination. Our profitability may be negatively affected if we are unable to seek protection during adverse economic conditions or if we incur financial or other economic penalties as a result of these provisions of our coal supply agreements. For more information about our long-term coal supply agreements, you should see the section entitled “Long-Term Coal Supply Arrangements” under Item 1.

The loss of, or a significant reduction in, purchases by our largest customers could adversely affect our profitability.

For the year ended December 31, 2022, we derived approximately 17% of our total coal revenues from sales to our three largest customers and approximately 42% of our total coal revenues from sales to our ten largest customers. If any of those customers, particularly any of our three largest customers, were to significantly reduce the quantities of coal it purchases from us, or if we are unable to sell coal to those customers on terms as favorable to us, it may have an adverse impact on the results of our business.

Disruptions in the quantities of coal purchased from other third parties could temporarily impair our ability to fill customer orders or increase our operating costs.

From time to time, we purchase coal from third parties that we sell to our customers. Operational difficulties at mines operated by third parties from whom we purchase coal, changes in demand from other coal producers and other factors beyond our control could affect the availability, pricing, and quality of coal purchased by us. Disruptions in the quantities of coal purchased by us could impair our ability to fill our customer orders or require us to purchase coal from other sources in order to satisfy those orders. If we are unable to fill a customer order or if we are required to purchase coal from other sources at higher prices and / or lower quality, in order to satisfy a customer order, we could lose existing customers and our operating costs could increase.

International growth in our sales adds new and unique risks to our business.

We have sales offices in Singapore and the United Kingdom. In addition, our international offices sell our coal to new customers and customers in new countries, which may present uncertainties and new risks. A majority of our metallurgical coal sales consist of sales to international customers, and we expect that international sales will continue to account for a larger portion of our revenue. A number of foreign countries in which we sell our metallurgical coal implicate additional risks and uncertainties due to the different economic, cultural and political environments. Such risks and uncertainties include, but are not limited to:

- longer sales-cycles and time to collection;
- tariffs and international trade barriers and export license requirements, including any that might result from the current global trade uncertainties;
- different and changing legal and regulatory requirements;
- potential liability under the U.S. Foreign Corrupt Practices Act of 1977, as amended, or comparable foreign regulations;
- government currency controls;
- fluctuations in foreign currency exchange and interest rates;
- political and economic instability, changes, hostilities and other disruptions (including as a result of the COVID-19 pandemic and the Russia-Ukraine conflict); and
- unexpected changes in diplomatic and trade relationships.

Negative developments in any of these factors in the foreign markets into which we sell our metallurgical coal could result in a reduction in demand for metallurgical coal, the cancellation or delay of orders already placed, difficulty in collecting receivables, higher costs of doing business and/or non-compliance with legal and regulatory requirements, each or any of which could materially adversely impact our cash flows, results of operations and profitability.

Our ability to collect payments from our customers could be impaired if their creditworthiness deteriorates, and our financial position could be materially and adversely affected by the bankruptcy of any of our significant customers.

Our ability to receive payment for coal sold and delivered depends on the continued creditworthiness of our customers. If we determine that a customer is not creditworthy, we may be able to withhold delivery under the customer's coal sales contract. If this occurs, we may decide to sell the customer's coal on the spot market, which may be at prices lower than the contracted price, or we may be unable to sell the coal at all. Furthermore, the bankruptcy of any of our significant customers could materially and adversely affect our financial position.

In addition, our customer base may change with deregulation as utilities sell their power plants to their non-regulated affiliates or third parties that may be less creditworthy, thereby increasing the risk we bear for customer payment default. Some power plant owners may have credit ratings that are below investment grade, or may become below investment grade after we enter into contracts with them. Furthermore, our metallurgical customers operate in a highly competitive and cyclical industry where their creditworthiness could deteriorate rapidly. In addition, competition with other coal suppliers could force us to extend credit to customers and on terms that could increase the risk of payment default. Customers in other countries may also be subject to other pressures and uncertainties that may affect their ability to pay, including trade barriers, exchange controls and local economic and political conditions.

Failure to obtain or renew surety bonds on acceptable terms could affect our ability to secure reclamation and coal lease obligations and, therefore, our ability to mine or lease coal.

Federal and state laws require us to obtain surety bonds or post other financial security to secure performance or payment of certain long-term obligations, such as mine closure or reclamation costs, federal and state workers' compensation and black lung benefits costs, coal leases and other obligations. The amount of security required to be obtained can change as the result of new federal or state laws, as well as changes to the factors used to calculate the bonding or security amounts. We may have difficulty procuring or maintaining our surety bonds. Our bond issuers may demand higher fees or additional collateral, including letters of credit or other terms less favorable to us upon those renewals.

Because we are required by state and federal law to have these surety bonds or other acceptable security in place before mining can commence or continue, our failure to maintain surety bonds, letters of credit or other guarantees or security arrangements would materially and adversely affect our ability to mine or lease metallurgical coal. That failure could result from a variety of factors, including lack of availability, higher expense or unfavorable market terms, the exercise by third-party surety bond issuers of their right to refuse to renew the sureties and restrictions on availability of collateral for current and future third-party surety bond issuers under the terms of our financing arrangements.

As of December 31, 2022, we had approximately \$545.9 million in surety bonds backed by \$68.0 million of letters of credit outstanding. Any further issuances of letters of credit to satisfy the increased collateral demands or any replacement surety bonds would immediately reduce the borrowing capacity under our credit facilities. At December 31, 2022, the Company established a fund for asset retirement obligations and thus far has contributed \$136 million that will serve to defease the long-term asset retirement obligation for its thermal asset base.

We may not have adequate insurance coverage for some business risks.

Our operations are generally subject to a number of hazards and risks that could result in personal injury or damage to, or destruction of, equipment, property or facilities. Depending on the nature and extent of a loss, the insurance that we maintain to address risks that are typical in our businesses may not be adequate or available to fully protect or reimburse us, or our insurance coverage may be limited, canceled or otherwise terminated. Insurance against some risks, such as liabilities for environmental pollution, or certain hazards or interruption of certain business activities, may not be available at an economically reasonable cost, or at all. Even if available, we may self-insure where we determine it is most cost effective to do so. As a result, despite the insurance coverage that we carry, accidents or other negative developments involving our production, mining, processing or transportation activities causing losses in excess of policy limits, or losses arising from events not covered under insurance policies, could have a material adverse effect on our financial condition and cash flows. The risk of increased insurance costs may have greater impact where the

adverse event results in us asserting an insurance claim, the cost of which our insurers may seek to recoup during a future insurance renewal through increased premiums or limitations on coverage.

Inaccuracies in our estimates of our coal reserves could result in decreased profitability from lower than expected revenues or higher than expected costs.

Our future performance depends on, among other things, the accuracy of our estimates of our proven and probable coal reserves. We base our estimates of reserves on engineering, economic and geological data assembled, analyzed and reviewed by internal and third-party engineers and consultants. We update our estimates of the quantity and quality of proven and probable coal reserves annually to reflect the production of coal from the reserves, updated geological models and mining recovery data, the tonnage contained in new lease areas acquired and estimated costs of production and sales prices. There are numerous factors and assumptions inherent in estimating the quantities and qualities of, and costs to mine, coal reserves, including many factors beyond our control, including the following:

- quality of the coal;
- geological and mining conditions, which may not be fully identified by available exploration data and / or may differ from our experiences in areas where we currently mine;
- the percentage of coal ultimately recoverable;
- the assumed effects of regulation, including the issuance of required permits, taxes, including severance and excise taxes, and royalties, and other payments to governmental agencies;
- assumptions concerning the timing for the development of the reserves;
- assumptions concerning physical access to the reserves; and
- assumptions concerning equipment and productivity, future coal prices, operating costs, including for critical supplies such as fuel, tires and explosives, capital expenditures and development and reclamation costs.

As a result, estimates of the quantities and qualities of economically recoverable coal attributable to any particular group of properties, classifications of reserves based on risk of recovery, estimated cost of production and estimates of future net cash flows expected from these properties, as prepared by different engineers, or by the same engineers at different times, may vary materially due to changes in the above factors and assumptions. Actual production recovered from identified reserve areas and properties, and revenues and expenditures associated with our mining operations, may vary materially from estimates. Any inaccuracy in our estimates related to our reserves could result in decreased profitability from lower than expected revenues and/or higher than expected costs.

A defect in title or the loss of a leasehold interest in certain properties or surface rights could limit our ability to mine our coal reserves or result in significant unanticipated costs.

We conduct a significant part of our coal mining operations on properties that we lease. A title defect or the loss of a lease or surface rights could adversely affect our ability to mine the associated coal reserves. We may not verify title to our leased properties or associated coal reserves until we have committed to developing those properties or coal reserves. We may not commit to develop properties or coal reserves until we have obtained necessary permits and completed exploration. As such, the title to properties that we intend to lease or coal reserves that we intend to mine may contain defects prohibiting our ability to conduct mining operations. Similarly, our leasehold interests may be subject to superior property rights of other third parties. In order to conduct our mining operations on properties where these defects exist, we may incur unanticipated costs. In addition, some leases require us to produce a minimum quantity of coal and require us to pay minimum production royalties. Our inability to satisfy those requirements may cause the leasehold interest to terminate, which could negatively impact our business, financial condition, results of operations and cash flows.

We may incur losses as a result of certain marketing and asset optimization strategies.

We seek to optimize our coal production and leverage our knowledge of the coal industry through a variety of marketing and asset optimization strategies. We maintain a system of complementary processes and controls designed to monitor and control our exposure to market and other risks as a consequence of these strategies. These processes and controls seek to balance our ability to profit from certain marketing and asset optimization strategies against our exposure to potential losses. Our risk monitoring and mitigation techniques, and accompanying judgments cannot anticipate every potential outcome or the timing of such outcomes. In addition, the processes and controls that we use to manage our exposure to market and other risks resulting from these strategies involve assumptions about the degrees of correlation or lack thereof among prices of various assets or other market indicators. These correlations may change significantly in times of market turbulence or other unforeseen circumstances. As a result, we may experience volatility in our earnings as a result of our marketing and asset optimization strategies.

Any decrease in the coal consumption of electric power generators could result in less demand and lower prices for thermal coal, which could materially and adversely affect our revenues and results of operations.

Thermal coal accounted for 90% of our coal sales by volume and 42% of the coal sales revenue during 2022. The majority of these sales were to electric power generators. The amount of coal consumed for electric power generation is affected primarily by the overall demand for electricity, the availability, quality and price of competing fuels (particularly natural gas) for power generation and governmental regulations which may dictate an alternate source of fuel regardless of economics. Overall economic activity and the associated demand for power by industrial users can have significant effects on overall electricity demand and can be impacted by a number of factors. An economic slowdown can significantly slow the growth of electricity demand and could result in reduced demand for coal. Weather patterns also greatly affect electricity demand. Extreme temperatures, both hot and cold, cause increased power usage and, therefore, increase generating requirements from all sources. Mild temperatures, on the other hand, result in lower electrical demand, which allows generators to choose the source of power generation that is most cost efficient.

Other sources of generation have the potential to displace coal-fueled generation, particularly from older, less efficient coal-powered generators and this has occurred to date. We expect that the new power plants constructed in the United States, to meet increasing demand for electricity generation, will not be fueled by coal, given the relative cost and permitting difficulties now associated with coal as compared to other sources of energy. State and federal mandates for increased use of electricity from renewable energy sources also have an impact on the market for our coal. Several states have enacted legislative mandates requiring electricity suppliers to use renewable energy sources to generate a certain percentage of power. There have been numerous proposals to establish a similar uniform national standard, although none of these proposals have been enacted to date; however, the Biden Administration has set a goal of a carbon pollution-free power sector by 2035. Additionally, many utilities have established their own emissions reduction goals, which may lead to the phase-out of coal-fired plants in favor of other energy sources. The costs of certain renewable energy sources have become increasingly competitive to coal, and possible advances in technologies and incentives, such as tax credits, to enhance the economics of renewable energy sources, could make these sources even more competitive. Any reduction in the amount of coal consumed by electric power generators could reduce the price of coal that we mine and sell, thereby reducing our revenues and materially and adversely affecting our business and results of operations.

We have seen coal consumption impacted by poor rail service at our western mines and have seen customers forced to go into coal conservation mode. Poor rail service not only impacts our shipments, but also could have a negative impact to the generating stations due to decreased reliability and higher costs.

If we or our service providers sustain cyber-attacks or other security incidents that involve unauthorized access to proprietary, confidential or personally identifiable information, or operational disruptions, we could be exposed to significant liability, reputational harm, loss of revenue, increased costs and material risks to our business and results.

We are dependent on information technology systems (“IT systems”) to operate our business and to comply with regulatory, legal and tax requirements. Some of these IT systems are owned and operated by us, but we also rely on many third-parties, such as services providers and others in the supply chain, for critical products and services, including but not limited to software and hardware. In addition, in the ordinary course of our business, we and various third parties generate, collect, process, transmit and store data, such as proprietary business information and personally identifiable information.

As our dependence on digital technologies has increased, the risk of cyber incidents, including both deliberate attacks and unintentional events, also has increased. A cyber-attack may involve persons gaining unauthorized access to our IT systems or systems maintained on our behalf for purposes of gathering, monitoring, releasing, misappropriating or corrupting proprietary or confidential or personal information, or causing operational disruption. In addition, certain cyber incidents, such as surveillance and advanced persistent threats (referred to as “APTs”), may remain undetected for an extended period of time. We are in an industry and business involving energy-related assets, that is at a relatively greater risk of cyber-attacks by sophisticated adversaries, such as nation state actors, as compared to other targets in the United States.

We and certain of our service providers have, experienced and expect to continue to experience cyberattacks and other security incidents. To date, we have not experienced any material losses relating to such attacks or incidents. However, our IT systems and those of third parties are vulnerable to malicious and intentional cyberattacks involving malware and viruses, accidental or inadvertent incidents, the exploitation of security vulnerabilities or “bugs” in software or hardware, among other scenarios. Both the frequency and magnitude of cyberattacks is expected to increase and attackers are becoming more sophisticated. As a result, we may be unable to anticipate, detect or prevent future attacks, particularly as the methodologies utilized by attackers change frequently or are not recognized until launched, and we may be unable to investigate or remediate incidents because attackers are increasingly using techniques and tools designed to circumvent controls, to avoid detection, and to remove or obfuscate forensic evidence. The COVID-19 pandemic has presented additional operational and cybersecurity risks due to continued work-from-home arrangements that have facilitated increased risk of social engineering events (for example phishing) and of the exploitation of vulnerabilities inherent in many non-corporate networks.

While we and our service providers have implemented various security controls and measures, cyberattacks and other security incidents could result in unauthorized access to our facilities or to information we are trying to protect, or cause significant operational or supply chain disruptions (for example, due to ransomware or denial-of-service attacks). Failure of our or our service providers’ IT systems, whether caused maliciously or inadvertently, may lead to unauthorized physical access to one or more of our facilities or locations, or electronic access to, or corruption or destruction or loss of, proprietary, confidential, or personally identifiable information and could result in, among other things, unfavorable publicity and reputational damage, litigation (including class actions), disruptions to our operations, loss of customers and financial obligations that may not be covered by our insurance for damages, regulatory investigations and enforcement, fines or penalties related to the theft, release or misuse of information, any or all of which could have a material adverse impact on our results of operations, financial condition or cash flow. In addition, as cyber threats continue to evolve, we may be required to expend significant additional resources to modify or enhance our protective measures or to investigate and remediate any system vulnerabilities or for compliance purposes. This is particularly the case given fast evolving legislative and regulatory changes to data privacy, data security and data protection laws globally. Any losses, costs or liabilities directly or indirectly related to cyberattacks or similar incidents may not be covered by, or may exceed the coverage limits of, any or all of our applicable insurance policies.

Our inability to acquire additional coal reserves or our inability to develop coal reserves in an economically feasible manner may adversely affect our business.

Our profitability depends substantially on our ability to mine and process, in a cost-effective manner, coal reserves that possess the quality characteristics desired by our customers. As we mine, our coal reserves deplete. As a result, our future success depends upon our ability to obtain, through acquisition or development of owned reserves, coal that is economically recoverable. If we fail to acquire or develop additional coal reserves, our existing reserves will eventually be depleted. We may not be able to obtain replacement reserves when we require them. Even if available, replacement reserves may not be available at favorable prices, or we may not be capable of mining those reserves at costs that are comparable with our existing coal reserves. In certain locations, leases for oil, natural gas and coalbed methane reserves are located on, or adjacent to, some of our reserves, potentially creating conflicting interests between us and lessees of those interests. Other lessees' rights relating to these mineral interests could prevent, delay or increase the cost of developing our coal reserves. These lessees may also seek damages from us based on claims that our coal mining operations impair their interests.

Our ability to obtain coal reserves in the future could also be limited by the availability of cash we generate from our operations or available financing, restrictions under our existing or future financing arrangements, competition from other coal producers, limited opportunities or the inability to acquire coal properties on commercially reasonable terms. Increased opposition from non-governmental organizations and other third parties may also lengthen, delay or adversely impact the acquisition process. If we are unable to acquire replacement reserves, our future production may decrease significantly and our operating results may be negatively affected. In addition, we may not be able to mine future reserves as profitably as we do at our current operations.

We may not be able to pay dividends or repurchase shares of our common stock in accordance with our announced intent or at all.

The Board of Directors' determinations regarding fixed or variable dividends and share repurchases will depend on a variety of factors, including our net income, cash flow generated from operations or other sources, liquidity position and potential alternative uses of cash, such as acquisitions and organic growth opportunities, as well as economic conditions and expected future financial results.

Our ability to declare future dividends and make future share repurchases will depend on our future financial performance, which in turn depends on the successful implementation of our strategy and on financial, competitive, regulatory, technical and other factors, general economic conditions, demand and selling prices for our products, working capital adjustments, decisions related to the amount and timing of contributions to the thermal reclamation fund and other factors specific to our industry, many of which are beyond our control. Therefore, our ability to generate cash depends on the performance of our operations and could be limited by decreases in our profitability or increases in costs, regulatory changes, capital expenditures, debt servicing requirements or an increase in collateral requirements.

The frequency and amount of dividends, if any, may vary significantly from amounts paid in previous periods. The Company can provide no assurance that it will continue to pay fixed or variable dividends or repurchase shares. Any failure to pay dividends or repurchase shares of our common stock could negatively impact our reputation, lessen investor confidence in us, and cause the market price of our common stock to decline.

Our ability to operate our business effectively could be impaired if we lose key personnel or fail to attract qualified personnel.

We manage our business with a number of key personnel, the loss of whom could have a material adverse effect on us, absent the completion of an orderly transition. Efficient mining using modern techniques and equipment requires skilled laborers with mining experience and proficiency as well as qualified managers and supervisors. The demand for skilled employees sometimes causes a significant constriction of the labor supply resulting in higher labor costs. When coal producers compete for skilled miners, recruiting challenges can occur and employee turnover rates can increase,

which negatively affect operating efficiency and costs. If a shortage of skilled workers exists and we are unable to train or retain the necessary number of miners, it could adversely affect our productivity, costs and ability to expand production.

Our executive officers and other key personnel have significant experience in the coal business and the loss of certain of these individuals could harm our business. Moreover, there may be a limited number of persons with the requisite experience and skills to serve in our senior management positions. There can be no assurance that we will continue to be successful in attracting and retaining a sufficient number of qualified personnel in the future or that we will be able to do so on acceptable terms. The loss of key management personnel could harm our ability to successfully manage our business functions, prevent us from executing our business strategy and have a material adverse effect on our results of operations and cash flows.

The COVID-19 pandemic has adversely affected, and will continue to adversely affect, our business, financial condition, liquidity and results of operations.

The COVID-19 pandemic has resulted in a global health crisis that has adversely affected businesses, economies and financial markets worldwide. The full impact of COVID-19 is unknown and continues to rapidly evolve. While the outbreak appeared to be trending downward, particularly as vaccination rates increased, new variants of COVID-19 continue emerging, including the highly transmissible Delta variant and the newly discovered Omicron variant (currently a “variant of concern”), spreading throughout the United States and globally and causing significant uncertainty.

The COVID-19 outbreak materially and adversely affected our business operations and financial condition due to the pandemic causing a deteriorating market outlook, global economic recession and weakened company liquidity. Although demand for coal and coal prices has recovered from the lows of 2020 through the second quarter of 2021, these conditions caused or exacerbated by the pandemic may lead to continued volatility of coal prices, severely limited liquidity and credit availability and declining valuations of assets, which have adversely affected, and will continue to affect, our business, financial condition, liquidity and results of operations.

Risks Related to Environmental, Other Regulations and Legislation

Extensive environmental regulations, including existing and potential future regulatory requirements relating to air emissions, affect our customers and could reduce the demand for coal as a fuel source and cause coal prices and sales of our coal to materially decline.

Coal contains impurities, including but not limited to sulfur, mercury, chlorine and other elements or compounds, many of which are released into the air when coal is combusted. The operations of our customers are subject to extensive environmental regulation particularly with respect to air emissions. For example, the federal Clean Air Act and similar state and local laws extensively regulate the amount of sulfur dioxide, particulate matter, nitrogen oxide, and other compounds emitted into the air from electric power plants, which are the largest end-users of our coal. A series of more stringent requirements relating to particulate matter, ozone, haze, mercury, sulfur dioxide, nitrogen oxide and other air pollutants may be developed and implemented. For instance, the Clean Power Plan promulgated under the Obama administration, would have severely limited emissions of carbon dioxide which would adversely affect our ability to sell coal. However, in April 2017, the EPA announced that it was initiating a review of the Clean Power Plan consistent with President Trump’s Executive Order 13783, and, in October 2017, the EPA published a proposed rule to formally repeal the Clean Power Plan. In June 2019, the EPA issued the final Affordable Clean Energy rule, which revised the agency’s interpretation of Clean Air Act section 111(d). In January 2021, the D.C. Circuit Court of Appeals vacated the Affordable Clean Energy rule and its implied repeal of the Clean Power Plan, remanding to the EPA for further proceedings. The Supreme Court then heard the case and decided against the EPA and the Clean Power Plan, holding that the EPA’s attempt to force an overall shift in power generation from higher-emitting to lower-emitting sources exceeded the EPA’s statutory authority. The EPA has not yet initiated a new rulemaking.

In addition, the change in presidential administration has resulted in a further shift in policy by the EPA. As explained above, in December 2015, the United States and 195 other countries (entered into the “Paris Agreement”) during the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change, a long-term,

international framework convention designed to address climate change over the next several decades. The Trump administration formally withdrew the United States from the Paris Agreement, effective November 2020. However, President Biden has recommitted the United States to the Paris Agreement and the United States has officially submitted to the United Nations a Nationally Determined Contribution of reducing its net greenhouse gas emissions by 50-52% below 2005 levels by 2030. Since then, the United States and other signatories to the Paris Agreement have taken further steps toward reducing greenhouse gas emissions and addressing climate change, as further discussed above. The impacts of these orders, pledges, agreements and any legislation or regulation promulgated to fulfill the United States' commitments under the Paris Agreement, the UN Framework Convention on Climate Change, or other international conventions cannot be predicted at this time. However, any efforts to control and/or reduce greenhouse gas emissions by the United States or other countries that have also pledged "Nationally Determined Contributions," or concerted conservation efforts that result in reduced electricity consumption, could adversely impact coal prices, our ability to sell coal and, in turn, our financial position and results of operations.

In addition, a January 21, 2021 executive order from the Biden administration directed all federal agencies to review and take action to address any federal regulations, orders, guidance documents, policies and any similar agency actions promulgated during the prior administration that may be inconsistent with the administration's policies. The executive order also established an Interagency Working Group on the Social Cost of Greenhouse Gases ("Working Group"), which is called on to, among other things, develop methodologies for calculating the "social cost of carbon," "social cost of nitrous oxide" and "social cost of methane." The Working Group published a Technical Support Document with interim values and initial recommendations in February 2021. Building on the Working Group's interim values for social cost of greenhouse gases, the EPA released for public review, in November 2022, a September 2022 draft report with a social cost of carbon of \$190 per metric ton of carbon dioxide emitted in 2020 at a 2% discount rate. That figure is intended to be used to guide federal decisions on the costs and benefits of various policies and approvals, although such efforts have been the subject of a series of judicial challenges. At this time, we cannot determine whether the administration's efforts on social cost or other interagency climate efforts will lead to any particular actions that give rise to a material adverse effect on our business, financial condition and results of operations. The Biden administration issued another executive order on January 27, 2021, that was specifically focused on addressing climate change. Further regulation of air emissions at the federal level, as well as uncertainty regarding the future course of federal regulation, could reduce demand for coal and negatively impact our financial position and results of operations.

In March 2021, the Biden Administration announced a framework for the "Build Back Better" agenda. The proposed framework included policies to address climate change across the federal government through the tax code, an energy efficiency and clean energy standard, and research and development, among other areas of focus.

"Build Back Better" has been on two tracks in Congress, with a bipartisan "infrastructure" bill that has passed in the Senate and House of Representatives and was signed into law on November 15, 2021, which includes climate provisions focused on transportation and resiliency and an expected multi-trillion-dollar budget social spending bill that is being advanced under the reconciliation process to address additional priorities, including the climate impacts of energy production. On August 16, 2022, President Biden signed into law the Inflation Reduction Act, which was originally introduced as an amendment to the Build Back Better Act, which will provide incentives and programs to a range of renewable energy, decarbonization, and energy efficiency projects. A Clean Electricity Standard, or similar program, remains a goal of the Biden Administration, despite an unclear political path forward, and we are closely monitoring both legislative and executive agency action.

We are also subject to state and local regulations, which may be more stringent than federal rules. For example, certain United States cities and states have announced their intention to satisfy their proportionate obligations under the Paris Agreement. In addition, almost one-half of states have taken measures to track and reduce emissions of greenhouse gases, and some states have elected to participate in voluntary regional cap-and-trade programs like the Regional Greenhouse Gas Initiative in the northeastern United States. Many State and local governments have also passed legislation and/or regulations requiring electricity suppliers to use renewable energy sources to generate a certain percentage of power, or provide financial incentives to electricity suppliers for using renewable energy sources. State and local governments may pass additional laws mandating the use of alternative energy sources, such as wind power

and solar energy, or imposing additional costs on the use of coal for electricity generation which may decrease demand for our coal products. State and local commitments and regulations could have a material adverse effect on our business, financial condition and results of operations.

Considerable uncertainty is associated with these air emissions initiatives, and the content of regulatory requirements in the United States and other countries continues to evolve and develop, which could require significant emissions control expenditures for many coal-fueled power plants. As a result, these power plants may switch to other fuels that generate fewer of these emissions, may install more effective pollution control equipment that reduces the need for low sulfur coal, or may cease operations, possibly reducing future demand for coal and a reduced need to construct new coal-fueled power plants. Any switching of fuel sources away from coal, closure of existing coal-fired plants or reduced construction of new plants could have a material adverse effect on demand for, and prices received for, our coal. Alternatively, less stringent air emissions limitations, particularly related to sulfur, to the extent enacted, could make low sulfur coal less attractive, which could also have a material adverse effect on the demand for and prices received for our coal.

You should see Item 1, “Environmental and Other Regulatory Matters” for more information about the various governmental regulations affecting the market for our products.

Increased pressure from political and regulatory authorities, along with environmental and climate change activist groups, and lending and investment policies adopted by financial institutions and insurance companies to address concerns about the environmental impacts of coal combustion, including climate change, may potentially materially and adversely impact our future financial results, liquidity and growth prospects.

Global climate issues continue to attract significant public and scientific attention. For example, the Assessment Reports of the Intergovernmental Panel on Climate Change have expressed concern about the impacts of human activity, especially from fossil fuel combustion, on the global climate. As a result of the public and scientific attention, several governmental bodies increasingly are focusing on climate issues and, more specifically, levels of emissions of carbon dioxide from coal combustion by power plants. Although the Supreme Court held that the EPA did not have the statutory authority to issue the Clean Power Plan, there remains considerable political will for laws and regulations restricting emissions, including emissions from our industry and the industries of our customers. As such, the final status of any regulatory requirements is uncertain.

Future regulation of greenhouse gas emissions in the United States could occur pursuant to future treaty obligations, statutory or regulatory changes at the federal, state or local level or otherwise. The enactment of laws or the passage of regulations regarding greenhouse gas emissions from the combustion of coal by the U.S., some of its states or other countries, or other actions to limit emissions have resulted in, and may continue to result in, electricity generators switching from coal to other fuel sources or coal-fueled power plant closures. Further, policies limiting available financing for the development of new coal-fueled power plants could adversely impact the global demand for coal in the future. You should see Item 1, “Environmental and Other Regulatory Matters-Climate Change” for more information about governmental regulations relating to greenhouse gas emissions.

There have been recent efforts by members of the general financial and investment communities, such as investment advisors, sovereign wealth funds, public pension funds, universities and other groups, to divest themselves and to promote the divestment of securities issued by companies involved in the fossil fuel extraction market, such as coal producers. In California, for example, legislation was signed into law in October 2015 requiring California’s state pension funds to divest investments in companies that generate 50% or more of their revenue from coal mining. Also, in December 2017, the Governor of New York announced that the New York Common Fund would immediately cease all new investments in entities with “significant fossil fuel activities,” and the World Bank announced that it would no longer finance upstream oil and gas after 2019, except in “exceptional circumstances.” Other activist campaigns have urged banks to cease financing coal-driven businesses. As a result, numerous banks, other financing sources and insurance companies have taken actions to limit available financing and insurance coverage for the development of new coal-fueled power plants and coal mines and utilities that derive a majority of their revenue from thermal coal. However,

various states have enacted, or are considering enacting, laws to sanction, or require public funds to divest from, financial institutions that restrict investments in fossil fuel companies based off of extra-regulatory environmental or social factors, or to require such institutions to provide “fair access” to financial services to companies regardless of industry. While similar regulations had been developed by the federal government under the Trump Administration, the Biden Administration has either suspended or repealed such rulemakings. For example, in November 2022, the Department of Labor published a final rule clarifying that consideration of environmental, social, and governance (“ESG”) factors in investment decisions is permissible for ERISA fiduciaries. As such, the final status of efforts to divest or promote the divestment from the fossil fuel extraction market is unclear, but any such efforts may adversely affect the demand for and price of our securities and impact our access to the capital and financial markets.

Additionally, in March 2022, the SEC proposed new rules relating to the disclosure of a range of climate-related risks and other information. To the extent this rule is finalized as proposed, we and/or our customers could incur increased costs related to the assessment and disclosure of climate-related information. Enhanced climate disclosure requirements could also accelerate any trend by certain stakeholders and capital providers to restrict or seek more stringent conditions with respect to their financing of certain carbon intensive sectors.

Any future laws, regulations or other policies of the nature described above may adversely impact our business in material ways. The degree to which any particular law, regulation or policy impacts us will depend on several factors, including the substantive terms involved, the relevant time periods for enactment and any related transition periods. We routinely attempt to evaluate the potential impact on us of any proposed laws, regulations or policies, which requires that we make several material assumptions. From time to time, we determine that the impact of one or more such laws, regulations or policies, if adopted and ultimately implemented as proposed, may result in materially adverse impacts on our operations, financial condition or cash flow. In general, it is likely that any future laws, regulations or other policies aimed at reducing greenhouse gas emissions will negatively impact demand for our coal.

Increased attention to environmental, social or governance (“ESG”) matters could adversely impact our business and the value of the company.

Increasing attention to climate change, societal expectations on companies to address climate change, investor and societal expectations regarding voluntary ESG disclosures, and consumer demand for alternative forms of energy may result in negative views with respect to ESG that could result in a low ESG score or similar sustainability score, could harm the perception of our Company by certain investors, or could result in the exclusion of our securities from consideration by those investors.

Certain financial institutions, including banks and insurance companies, have taken actions to limit available financing, insurance and other services to entities that produce or use fossil fuels. Additionally, some investors and financial institutions use ESG or sustainability scores, ratings and benchmarking studies provided by various organizations that assess corporate performance and governance related to environmental and social matters, including climate change, in making their financing and voting decisions. Companies in the energy industry, and in particular those focused on coal, natural gas or petroleum extraction and refining, often have lower ESG or sustainability scores compared to companies in other industries. These lower scores may have adverse consequences including, but not limited to:

- restricting our ability to access capital and financial markets in the future or increasing our cost of capital;
- reducing the demand and price for our securities;
- increasing the cost of borrowing;
- causing a decline in our credit ratings;
- reducing the availability, and/or increasing the cost of, third-party insurance;
- increasing our retention of risk through self-insurance; and
- making it more difficult to obtain surety bonds, letters of credit, bank guarantees or other financing.

ESG expectations, including both the matters in focus and the management of such matters, continue to evolve rapidly. For example, in addition to climate change, there is increasing attention on topics such as diversity and inclusion, human rights, and human and natural capital, in companies’ own operations as well as their supply chains. In addition,

perspectives on the efficacy of ESG considerations continue to evolve, and we cannot currently predict how regulators', investors' and other stakeholders' views on ESG matters may affect the regulatory and investment landscape and affect our business, financial condition, and results of operations. While we may publish voluntary disclosures regarding ESG matters or take other actions from time to time, in an effort to improve the ESG profile of our operations or products, we cannot guarantee that these efforts will have the desired effect. For example, our voluntary disclosures may include statements based on assumptions, estimates or third-party information we currently believe to be reasonable but which may subsequently be considered to be erroneous or misinterpreted. If we do not, or are perceived to not, adapt or comply with investor or stakeholder expectations and standards on ESG matters, we may suffer from reputational damage and our business, financial condition and results of operations could be materially and adversely affected. Any reputational damage associated with ESG factors may also adversely impact our ability to recruit and retain employees and customers. In addition, we anticipate that there may be increased levels of regulation, disclosure-related and otherwise, with respect to ESG matters, which will likely lead to increased compliance costs, as well as scrutiny that could heighten all of the risks identified in this risk factor. Such ESG matters may also affect our suppliers or customers, which could augment or cause additional impacts to our business or operations.

Our failure to obtain and renew permits necessary for our mining operations could negatively affect our business.

Mining companies must obtain numerous permits that impose strict regulations on various environmental and operational matters in connection with coal mining. These include permits issued by various federal, state and local agencies and regulatory bodies. The permitting rules, and the interpretations of these rules, are complex, change frequently and are often subject to discretionary interpretations by the regulators, all of which may make compliance more difficult or impractical, and may possibly preclude the continuance of ongoing operations or the development of future mining operations. The public, including non-governmental organizations, anti-mining groups and individuals, have certain statutory rights to comment upon and submit objections to requested permits and environmental impact statements prepared in connection with applicable regulatory processes, and otherwise engage in the permitting process, including bringing citizens' lawsuits to challenge the issuance of permits, the validity of environmental impact statements or the performance of mining activities. Accordingly, required permits may not be issued or renewed in a timely fashion or at all, or permits issued or renewed may be conditioned in a manner that may restrict our ability to efficiently and economically conduct our mining activities, any of which could materially reduce our production, cash flow and profitability.

Federal or state regulatory agencies have the authority to order certain of our mines to be temporarily or permanently closed under certain circumstances, which could materially and adversely affect our ability to meet our customers' demands.

Federal or state regulatory agencies have the authority, under certain circumstances following significant health and safety incidents, such as fatalities, to order a mine to be temporarily or permanently closed. If this occurred, we may be required to incur capital expenditures to re-open the mine. In the event that these agencies order the closing of our mines, our coal sales contracts generally permit us to issue *force majeure* notices which suspend our obligations to deliver coal under these contracts. However, our customers may challenge our issuances of *force majeure* notices. If these challenges are successful, we may have to purchase coal from third-party sources, if it is available, to fulfill these obligations, incur capital expenditures to re-open the mines and/or negotiate settlements with the customers, which may include price or commitment reductions, extensions of time for delivery or terminations of customers' contracts. Any of these actions could have a material adverse effect on our business and results of operations.

Extensive environmental regulations impose significant costs on our mining operations, and future regulations could materially increase those costs or limit our ability to produce and sell coal.

The coal mining industry is subject to increasingly strict regulation by federal, state and local authorities with respect to environmental matters such as:

- limitations on land use;
- mine permitting and licensing requirements;
- reclamation and restoration of mining properties after mining is completed and required surety bonds or other instruments to secure those reclamation and restoration obligations;
- management of materials generated by mining operations;
- the storage, treatment and disposal of wastes;
- remediation of contaminated soil and groundwater;
- air quality standards;
- water pollution;
- protection of human health, plant-life and wildlife, including endangered or threatened species;
- protection of wetlands;
- the discharge of materials into the environment;
- the effects of mining on surface water and groundwater quality and availability; and
- the management of electrical equipment containing polychlorinated biphenyls.

The costs, liabilities and requirements associated with the laws and regulations related to these and other environmental matters may be costly and time-consuming and may delay commencement or continuation of exploration or production operations. Failure to comply with these laws and regulations may result in the assessment of administrative, civil and criminal penalties, the imposition of cleanup and site restoration costs and liens, the issuance of injunctions to limit or cease operations, the suspension or revocation of permits and other enforcement measures that could have the effect of limiting production from our operations. We may incur material costs and liabilities resulting from claims for damages to property or injury to persons arising from our operations. If we are pursued for sanctions, costs and liabilities in respect of these matters, our mining operations and, as a result, our profitability could be materially and adversely affected.

New legislation or administrative regulations or new judicial interpretations or administrative enforcement of existing laws and regulations, including proposals related to the protection of the environment that would further regulate and tax the coal industry, may also require us to change operations significantly or incur increased costs, which could have a material adverse effect on our financial condition and results of operations. Please refer to the section entitled “Environmental and Other Regulatory Matters” in Item 1 for more information about the various governmental regulations affecting us.

If the assumptions underlying our estimates of reclamation and mine closure obligations are inaccurate, our costs could be greater than anticipated.

SMCRA and counterpart state laws and regulations establish operational, reclamation and closure standards for all aspects of surface mining, as well as most aspects of underground mining. We base our estimates of reclamation and mine closure liabilities on permit requirements, engineering studies and our engineering expertise related to these requirements. Our management and engineers periodically review these estimates. Actual costs can vary from our original estimates if our assumptions are incorrect, major operational changes are implemented, or if governmental regulations change significantly. We are required to record new obligations as liabilities at fair value under U.S. GAAP. In estimating fair value, we consider the estimated current costs of reclamation and mine closure and applied inflation rates, together with third-party profit, as required. The third-party profit is an estimate of the approximate markup that would be charged by contractors for work performed on our behalf. The resulting estimated reclamation and mine closure obligations could change significantly if actual amounts change significantly from our assumptions, which could have a material adverse effect on our results of operations and financial condition.

Our operations may impact the environment or cause exposure to hazardous substances, and our properties may have environmental contamination, which could result in material liabilities to us.

Our operations currently use hazardous materials and generate hazardous wastes from time to time. We could become subject to claims for toxic torts, natural resource damages and other damages as well as for the investigation and cleanup of soil, surface water, groundwater, and other media. Such claims may arise, for example, out of conditions at sites that we currently own or operate, as well as at sites that we previously owned or operated, or at sites that we may acquire. Under certain federal and state environmental laws, our liability for such conditions may be joint and several with other owners/operators, so that we may be held responsible for more than our share of the contamination or other damages, or even for the entire share. Liability under these laws is generally strict. Accordingly, we may incur liability without regard to fault or to the legality of the conduct giving rise to the conditions.

We maintain extensive coal refuse areas and slurry impoundments at a number of our mining complexes. Such areas and impoundments are subject to extensive regulation. Slurry impoundments can fail, which could release large volumes of coal slurry into the surrounding environment. Structural failure of an impoundment can result in extensive damage to the environment and natural resources, such as bodies of water that the coal slurry reaches, as well as liability for related personal injuries and property damages, and injuries to wildlife. Some of our impoundments overlie mined-out areas, which can pose a heightened risk of failure and of damages arising out of failure. If one of our impoundments were to fail, we could be subject to substantial claims for the resulting environmental contamination and associated liability, as well as for fines and penalties.

Drainage flowing from or caused by mining activities can be acidic with elevated levels of dissolved metals, a condition referred to as “acid mine drainage,” which we refer to as AMD. The treating of AMD can be costly. Although we do not currently face material costs associated with AMD, it is possible that we could incur significant costs in the future.

These and other similar unforeseen impacts that our operations may have on the environment, as well as exposures to hazardous substances or wastes associated with our operations, could result in costs and liabilities that could materially and adversely affect our business, financial condition and results of operations.

Changes in the legal and regulatory environment could complicate or limit our business activities, increase our operating costs or result in litigation.

The conduct of our businesses is subject to various laws and regulations administered by federal, state and local governmental agencies in the United States. These laws and regulations may change, sometimes dramatically, as a result of political, economic or social events or in response to significant events. Environmental and other non-governmental organizations and activists, many of which are well funded, continue to exert pressure on regulators and other government bodies to enact more stringent laws and regulations. For instance, increasing attention to global climate change has resulted in an increased possibility of governmental investigations and, potentially, private litigation against us and our customers. For example, claims have been made against certain energy companies alleging that greenhouse gas emissions constitute a public nuisance or that such companies have been aware of the adverse effects of greenhouse gas emissions for some time but failed to adequately disclose such impacts to consumers or investors. While our business is not a party to any such litigation, we could be named in actions making similar allegations. Moreover, the proliferation of successful climate change litigation could adversely impact demand for coal and ultimately have a material adverse effect on our business, financial condition and results of operations. Changes in the legal and regulatory environment in which we operate may impact our results, increase our costs or liabilities, complicate or limit our business activities or result in litigation. Such legal and regulatory environment changes may include changes in such items as: the processes for obtaining or renewing permits; federal Lease By Application (“LBA”) programs; costs associated with providing healthcare benefits to employees; health and safety standards; accounting standards; disclosure requirements; taxation requirements; competition laws; and trade policies, including policies concerning tariffs, quotas, trade barriers and other trade protection measures.

Risks Related to Income Taxes

Our ability to use net operating losses is subject to a current limitation, and may be subject to additional limitations in the future.

The ability to use our net operating losses (“NOLs”) in existence immediately prior to our emergence from bankruptcy in 2016 has been limited by the “ownership change” under Section 382 of the Internal Revenue Code (the “Code”) that occurred as a result of such emergence (the “Emergence Ownership Change”). NOLs generated after the Emergence Ownership Change are generally not subject to limitations, except as noted below.

For U.S. federal income tax purposes, NOLs generated in taxable years beginning after December 31, 2017 are not subject to expiration; however, such NOLs are limited to offsetting 80% of our U.S. federal taxable income in any taxable year beginning after December 31, 2022.

If we undergo an additional “ownership change” under Section 382 of the Code (very generally defined as a greater than 50% change, by value, in equity ownership by certain shareholders or groups of shareholders over a rolling three-year period), such ownership change may impose further limitations on our ability to use any NOLs in existence immediately prior to such ownership change. We may experience ownership changes as a result of subsequent shifts in our stock ownership. Future legal or regulatory changes could also limit our ability to utilize our NOLs. To the extent we are not able to offset future taxable income with our NOLs, our net income and cash flows may be adversely affected.

U.S. tax legislation may materially adversely affect our financial condition, results of operations and cash flows.

Our consolidated effective income tax rate could be materially adversely affected by changing tax laws and regulations (such as the recent enactment of the Inflation Reduction Act which, among other changes, introduced a 15% corporate minimum tax on certain United States corporations and a 1% excise tax on certain stock repurchases by United States corporations) or the interpretation thereof, the practices of tax authorities in jurisdictions in which we operate, and the resolution of issues arising from tax audits or examinations and any related interest or penalties.

We are unable to predict what tax reforms may be proposed or enacted in the future or what effect such changes would have on our business, but such changes, to the extent they are brought into tax legislation, regulations, policies or practices in jurisdictions in which we operate, could adversely affect our future results of operations, reduce post-tax returns to our stockholders and increase the complexity, burden and cost of tax compliance.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES.

Disclosure of Mineral Reserves and Resources

In October 2018, the Securities and Exchange Commission (“SEC”) adopted amendments to its current disclosure rules to modernize the mineral property disclosure requirements for mining registrants. The amendments include the adoption of S-K 1300, which will govern disclosure for mining registrants (the “SEC Mining Modernization Rules”). The SEC Mining Modernization Rules replace the historical property disclosure requirements for mining registrants that were included in the SEC’s Industry Guide 7 and better align disclosure with international industry and regulatory practices.

Descriptions in this report of our mineral deposits are prepared in accordance with S-K 1300, as well as similar information provided by other issuers in accordance with S-K 1300, may not be comparable to similar information that is presented elsewhere outside of this report. Leer, Leer South, and Black Thunder were considered material properties. Please refer to the Technical Report Summaries filed as exhibits hereto for additional information with respect to our material properties and Material Mining Properties section below.

The qualified persons that have reviewed and approved the scientific and technical information contained in this annual report are identified in the footnotes to the tables summarizing the mineral reserves and resources estimates below. Our coal reserve estimates at December 31, 2022 were prepared by our engineers and geologists and reviewed by Weir International, Inc. and Marshall Miller and Associates, Inc., which are third party mining and geological consultants. Internally qualified personnel were used for all non-material properties and selected resources.

Refer to Item 1. Business “Our Mining Operations” for further discussion regarding our active mining complexes as of December 31, 2022, including the total tons sold associated with these complexes, mining type, mining equipment, location, existing infrastructure, total cost of property, plant and equipment of each mining complex.

Presentation of information concerning Mineral Reserves

The estimates of proven and probable reserves at our mines and the estimates of mine life included in this annual report have been prepared by the qualified persons referred to herein, and in accordance with the technical definitions established by the SEC. Under S-K 1300:

- Proven mineral reserves are the economically mineable part of a measured mineral resource and can only result from conversion of a measured mineral resource.
- Probable mineral reserves are the economically mineable part of an indicated and, in some cases, a measured mineral resource.
- Indicated mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of adequate geological evidence and sampling. The level of geological certainty associated with an indicated mineral resource is sufficient to allow a qualified person to apply modifying factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Because an indicated mineral resource has a lower level of confidence than the level of confidence of a measured mineral resource, an indicated mineral resource may only be converted to a probable mineral reserve.
- Inferred mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling. The level of geological uncertainty associated with an inferred mineral resource is too high to apply relevant technical and economic factors likely to influence the prospects of economic extraction in a manner useful for evaluation of economic viability. Because an inferred mineral resource has the lowest level of geological confidence of all mineral resources, which prevents the application of the modifying factors in a manner useful for evaluation of

economic viability, an inferred mineral resource may not be considered when assessing the economic viability of a mining project, and may not be converted to a mineral reserve.

- Measured mineral resource is that part of a mineral resource for which quantity and grade or quality are estimated on the basis of conclusive geological evidence and sampling. The level of geological certainty associated with a measured mineral resource is sufficient to allow a qualified person to apply modifying factors, as defined in S-K 1300, in sufficient detail to support detailed mine planning and final evaluation of the economic viability of the deposit. Because a measured mineral resource has a higher level of confidence than the level of confidence of either an indicated mineral resource or an inferred mineral resource, a measured mineral resource may be converted to a proven mineral reserve or to a probable mineral reserve.

We periodically revise our reserves and resources estimates when we have new geological data, economic assumptions or mining plans. During 2022, we performed an analysis of our reserves and resources estimates for certain operations, which is reflected in new estimates as of December 31, 2022. Reserves and resource estimates for each operation assume that we either have or expect to obtain all the necessary rights and permits to mine, extract and process mineral reserves or resources at each mine. Certain figures in the tables, discussions and notes have been rounded. For a description of risks relating to our estimates of mineral reserves and resources, see our “Risk Factors” within Item 1A.

Our Properties

The following table provides a summary of information regarding our active mining complexes as of December 31, 2022:

<u>Mine⁽¹⁾</u>	<u>Location</u>	<u>Ownership</u>	<u>Operator</u>	<u>Stage of Development</u>	<u>Mine Type</u>	<u>Processing Plant</u>
Leer ⁽²⁾	Taylor County, WV	100%	ICG Tygart Valley	Production	Underground	Yes
Leer South ⁽³⁾	Barbour County, WV	100%	Wolf Run Mining LLC	Production	Underground	Yes
Beckley	Raleigh County, WV	100%	ICG Beckley LLC	Production	Underground	Yes
Mountain Laurel	Logan County, WV	100%	Mingo Logan LLC	Production	Underground	Yes
Black Thunder ⁽⁴⁾	Campbell County, WY	100%	Thunder Basin Coal Company L.L.C.	Production	Surface	No
Coal Creek	Campbell County, WY	100%	Thunder Basin Coal Company L.L.C.	Production	Surface	No
West Elk	Gunnison County, CO	100%	Mountain Coal Company L.L.C.	Production	Underground	Yes

- (1) The Mineral Reserve estimates with respect to our mines have been prepared by the qualified persons referred to herein. Refer to Item 1. Business “Our Mining Operations” on the title process. Refer to Item 1. Business “Environmental and Other Regulatory Matters” for discussion on the permitting process.
- (2) Subpart 1300 of Regulation S-K definitions were followed for Mineral Reserves. The qualified person for Mineral Reserves is Weir Consulting, an independent mining firm. Mineral reserves are estimated at average sales price per short ton FOB mine of \$110.18 and average cash cost per short ton of \$59.94. Refer to Exhibit 96.1 Technical Report Summary for Leer Mine – S-K 1300 Report.
- (3) Subpart 1300 of Regulation S-K definitions were followed for Mineral Reserves. The qualified person for Mineral Reserves is Marshall Miller & Associates, an independent mining firm. Mineral reserves are estimated at average sales price per short ton FOB mine of \$98.59 and average cash cost per short ton of \$52.39. Refer to Exhibit 96.1 Technical Report Summary for Leer South Mine – S-K 1300 Report.
- (4) Subpart 1300 of Regulation S-K definitions were followed for Mineral Reserves. The qualified person for Mineral Reserves is Weir Consulting, an independent mining firm. Mineral reserves are estimated at average sales price per short ton FOB mine of \$14.67 and average cash cost per short ton of \$12.46. Refer to Exhibit 96.1 Technical Report Summary for Black Thunder Mine – S-K 1300 Report.

At December 31, 2022, we owned or controlled, primarily through long-term leases, approximately 28,292 acres of coal land in Ohio, 952 acres of coal land in Maryland, 10,095 acres of coal land in Virginia, 303,263 acres of coal land in West Virginia, 81,450 acres of coal land in Wyoming, 234,087 acres of coal land in Illinois, 33,047 acres of coal land in Kentucky, 362 acres of coal land in Montana, 248 acres of coal land in Pennsylvania, and 19,018 acres of coal land in Colorado. In addition, we also owned or controlled through long-term leases smaller parcels of property in Alabama, Indiana, Washington, Arkansas, California, Utah and Texas. We lease approximately 57,863 acres of our coal land from the federal government and approximately 15,318 acres of our coal land from various state governments. Certain of our preparation plants or loadout facilities are located on properties held under leases which expire at varying dates over the next 30 years. Most of the leases contain options to renew. Our remaining preparation plants and loadout facilities are located on property owned by us or for which we have a special use permit.

Our executive headquarters occupies leased office space at 1 CityPlace Drive, in St. Louis, Missouri. Our subsidiaries currently own or lease the equipment utilized in their mining operations. You should see Item 1, “Our Mining Operations” for more information about our mining operations, mining complexes and transportation facilities.

Our Coal Reserves

We estimate that we owned or controlled approximately 0.9 billion tons of recoverable mineral reserves and 1.2 billion tons of measurable and indicated resources at December 31, 2022. Our coal reserve estimates at December 31, 2022 were prepared by our engineers and geologists and reviewed by Weir International, Inc., a mining and geological consultant. Our coal reserve estimates are based on data obtained from our drilling activities and other available geologic data. Our coal reserve estimates are periodically updated to reflect past coal production and other geologic and mining data. Acquisitions or sales of coal properties will also change these estimates. Changes in mining methods or the utilization of new technologies may increase or decrease the recovery basis for a coal seam.

Our coal reserve estimates include reserves that can be economically and legally extracted or produced at the time of their determination. In determining whether our reserves meet this standard, we take into account, among other things, our potential inability to obtain a mining permit, the possible necessity of revising a mining plan, changes in estimated future costs, changes in future cash flows caused by changes in costs required to be incurred to meet regulatory requirements and obtaining mining permits, variations in quantity and quality of coal, and varying levels of demand and their effects on selling prices. We use various assumptions in preparing our estimates of our coal reserves. You should see “Inaccuracies in our estimates of our coal reserves could result in decreased profitability from lower than expected revenues or higher than expected costs” contained in Item 1A, “Risk Factors.”

The following table shows our estimates of Mineral Reserves as of December 31, 2022 prepared in accordance with Subpart 1300 of Regulation S-K.

**Total Mineral Reserves
(Tons in millions)**

Product / Region / Mine	Representative Coal Quality	Recoverable Mineral Reserves (million tons)		Total
		Proven	Probable	
Metallurgical Coal				
Central Appalachia				
Beckley	1	17.2	2.4	19.6
Mountain Laurel	3	9.2	7.5	16.7
VA, Royalty	2	0.6	—	0.6
Total Central Appalachia		27.0	9.9	36.9
Northern Appalachia				
Leer	3	15.3	27.1	42.4
Leer South	3	49.7	16.9	66.6
Other Northern Appalachia	3	47.7	31.0	78.7
Total Northern Appalachia		112.7	75.0	187.7
Total Metallurgical Coal		139.7	84.9	224.6
Thermal Coal				
Colorado	4	43.5	4.6	48.1
Illinois Basin, Royalty	5	141.0	34.0	175.0
Wyoming				
Black Thunder	6	475.0	5.0	480.0
Total Wyoming		475.0	5.0	480.0
Total Thermal Coal		659.5	43.6	703.1
Total Coal		799.2	128.5	927.7

-
- (1) Low-Vol
 - (2) Mid-Vol
 - (3) High-Vol
 - (4) 11,500 BTU/lbs.; 0.92 lbs. SO₂/MMBTU
 - (5) 11,200 BTU/lbs.; 4.95 lbs. SO₂/MMBTU
 - (6) 8900 BTU/lbs.; 0.67 lbs. SO₂/MMBTU
 - (7) The Mineral Reserve estimates with respect to our mines have been prepared by the qualified persons referred to herein.

The following table shows our estimates of Mineral Resources as of December 31, 2022 prepared in accordance with Subpart 1300 of Regulation S-K.

**Total Mineral Resources
(Tons in millions)**

Product / Region / Mine	Representative Coal Quality	In-Place Mineral Resources (million tons)			
		Measured	Indicated	Measured ± Indicated	Inferred
Metallurgical Coal					
Central Appalachia					
Mountain Laurel	3	2.5	17.6	20.1	22.7
VA, Royalty	2	16.3	—	16.3	—
Total Central Appalachia		18.8	17.6	36.4	22.7
Northern Appalachia					
Leer	3	2.8	11.7	14.5	4.9
Leer South	3	8.9	4.0	12.9	—
Other Northern Appalachia	3	82.9	110.0	192.9	0.9
Total Northern Appalachia		94.6	125.7	220.3	5.8
Total Metallurgical Coal		113.4	143.3	256.7	28.5
Thermal Coal					
Illinois Basin					
Macoupin County, IL	4	—	170.6	170.6	—
Other Illinois Basin	5	21.4	106.0	127.4	56.2
Total Illinois Basin		21.4	276.6	298.0	56.2
Wyoming					
Black Thunder	6	200.0	5.0	205.0	—
Coal Creek	7	129.1	1.2	130.3	—
Other Campbell County	8	266.0	10.4	276.4	—
Total Wyoming		595.1	16.6	611.7	—
Total Thermal Coal		616.5	293.2	909.7	56.2
Total Coal		729.9	436.5	1,166.4	84.7

- (1) Low-Vol
- (2) Mid-Vol
- (3) High-Vol
- (4) 11,565 BTU/lbs, 9.7 lbs. SO₂/MMBTU
- (5) 10,200 - 11,900 BTU/lbs; 6.1 - 9.7 lbs. SO₂/MMBTU
- (6) 8985 BTU/lbs.; 0.6 lbs. SO₂/MMBTU
- (7) 8175 BTU/lbs.; 0.8 lbs. SO₂/MMBTU
- (8) 8200 - 9100 BTU/lbs.; 0.6 - 0.9 lbs. SO₂/MMBTU
- (9) The estimation of Mineral Resources involves assumptions about future commodity prices and technical mining matters. Resources are not mineral reserves and do not have demonstrated economic viability.

Federal and state legislation controlling air pollution affects the demand for certain types of coal by limiting the amount of sulfur dioxide which may be emitted as a result of fuel combustion and encourages a greater demand for low-sulfur coal. All of our identified coal reserves have been subject to preliminary coal seam analysis to test sulfur content. Of these reserves, approximately 58% consist of compliance coal, or coal which emits 1.2 pounds or less of sulfur dioxide per million Btus upon combustion, while an additional approximately 11% could be sold as low-sulfur coal. The balance is classified as high-sulfur coal. Most of our reserves are suitable for the domestic steam coal markets. A substantial portion of the low-sulfur and compliance coal reserves at a number of our Appalachian mining complexes may also be used as metallurgical coal.

The carrying cost of our coal reserves at December 31, 2022 was \$244.0 million, consisting of \$4.6 million of prepaid royalties and a net book value of coal lands and mineral rights of \$239.4 million.

Our coal reserve and resource estimates are updated periodically to reflect coal production, acquisitions and dispositions of mineral interests, new drilling, mine or geological data, and changes in regulations, market conditions or other economic factors. As coal seams in the United States have been mined for many years and are well established, we do not conduct material exploration activity. However, we periodically conduct drilling of additional core holes to provide additional geological evidence as part of our routine mine permitting and planning processes. The following is a summary of the changes in our coal reserves and resources for the year-ended December 31, 2022:

Change in Coal Reserves (Tons in millions)

Mine	Coal Reserves	Acquired/Leased	Production	Change in Mine Plan	Other	Coal Reserves
Product / Region / Mine						
Metallurgical Coal						
Central Appalachia						
Beckley	17.6	2.8	(1.0)	-	0.2	19.6
Mountain Laurel	17.8	-	(0.7)	(0.3)	(0.1)	16.7
VA, Royalty	0.7	-	(0.1)	-	-	0.6
Total Central Appalachia	36.1	2.8	(1.8)	(0.3)	0.1	36.9
Northern Appalachia						
Leer	44.4	-	(4.0)	0.1	1.9	42.4
Leer South	64.5	3.3	(2.3)	1.0	0.1	66.6
Other Northern Appalachia	78.5	0.2	-	-	-	78.7
Total Northern Appalachia	187.4	3.5	(6.3)	1.1	2.0	187.7
Total Metallurgical Coal	223.5	6.3	(8.1)	0.8	2.1	224.6
Thermal Coal						
Colorado	51.9	-	(4.3)	-	0.5	48.1
Illinois Basin, Royalty	178.6	-	(3.2)	-	(0.4)	175.0
Wyoming						
Black Thunder	545.0	-	(62.3)	-	(2.7)	480.0
Total Wyoming	545.0	-	(62.3)	-	(2.7)	480.0
Total Thermal Coal	775.5	-	(69.8)	-	(2.6)	703.1
Total Coal	999.0	6.3	(77.9)	0.8	(0.5)	927.7

Change in Coal Resources (Tons in millions)

<u>Mine</u>	<u>Coal Resources</u>	<u>Acquired/Leased</u>	<u>Production</u>	<u>Change in Mine Plan</u>	<u>Other</u>	<u>Coal Resources</u>
<u>Product / Region / Mine</u>						
Metallurgical Coal						
Central Appalachia						
Mountain Laurel	43.3	-	-	-	(0.5)	42.8
VA, Royalty	10.3	-	-	-	6.0	16.3
Total Central Appalachia	53.6	-	-	-	5.5	59.1
Northern Appalachia						
Leer	18.9	-	-	-	0.5	19.4
Leer South	12.9	-	-	-	-	12.9
Other Northern Appalachia	196.6	-	-	-	(2.8)	193.8
Total Northern Appalachia	228.4	-	-	-	(2.3)	226.1
Total Metallurgical Coal	282.0	-	-	-	3.2	285.2
Thermal Coal						
Illinois Basin						
Macoupin County, IL	170.6	-	-	-	-	170.6
Other Illinois Basin	183.6	-	-	-	-	183.6
Total Illinois Basin	354.2	-	-	-	-	354.2
Wyoming						
Black Thunder	205.0	-	-	-	-	205.0
Coal Creek	134.7	-	(4.4)	-	-	130.3
Other Campbell County	276.4	-	-	-	-	276.4
Total Wyoming	616.1	-	(4.4)	-	-	611.7
Total Thermal Coal	970.3	-	(4.4)	-	-	965.9
Total Coal	1,252.3	-	(4.4)	-	3.2	1,251.1

Material Mining Properties

The information that follows relating our material properties: Leer, Leer South, Black Thunder – is derived from, and in some instances is an extract from, the technical report summaries (“TRSs”) relating to such properties prepared in compliance with Item 601(b)(96) and subpart 1300 of Regulation S-K. Portions of the following information are based on assumptions, qualifications and procedures that are not fully described herein. Reference should be made to the full text of the TRSs, incorporated herein by reference and made a part of this Annual Report on Form 10-K.

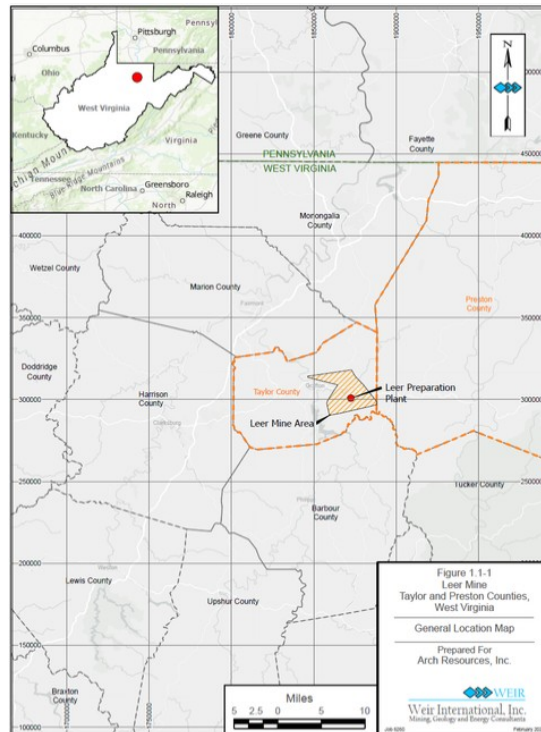
The following table shows our estimates of Mineral Reserves as of December 31, 2022 prepared in accordance with Subpart 1300 of Regulation S-K for our material mining properties:

Product / Region / Mine	Recoverable Mineral Reserves (As-Received)				Percentage Change	Notes
	Proven	Probable	2022 Total	2021 Total		
(million tons)						
Metallurgical Coal						
Northern Appalachia						
Leer	15.3	27.1	42.4	44.4	(4.5)%	1,2
Leer South	49.7	16.9	66.6	64.5	3.3%	1,2
Thermal Coal						
Wyoming						
Black Thunder	475.0	5.0	480.0	545.0	(11.9)%	1,2

- (1) Year 2022 production
- (2) Modifications to Life of Mine Plan

Leer

Leer is located at approximately 39° 19' 59.8584" N Latitude and 79° 57' 30.7584" W Longitude, which is approximately 25 miles south of Morgantown, West Virginia, primarily in Taylor County, with minimal extension into Preston County, within the Northern West Virginia coal field of the NAPP Region of the United States. The USGS 7.5-minute quadrangle map sheets are Fairmont East, Gladesville, Grafton, and Thornton.



Leer is a permitted underground longwall mine that commenced production of metallurgical coal in the fourth quarter of 2011. The longwall mining method has been successfully utilized in the Northern Appalachia Region, and in other coal producing regions of the United States, since the 1960s. Longwall mining has the highest mining recovery of modern-day underground mining methods. Longwall mining includes room and pillar continuous mining to develop main entries, longwall headgates and tailgates, and retreat mining production panels.

Leer is mining the Lower Kittanning Seam and parting interval within the seam utilizing continuous miners to develop longwall panels to be mined using a longwall mining system. Leer is primarily sold as High-Vol A, and is part of approximately 93,300 acres that is considered our Tygart Valley area. Leer develops longwall districts (sets of adjacent longwall panels) with alphabetic designations.

Prior to the development of Leer, there was very little mining that occurred on the property. A small underground coal mine operated by the Thornton Fire Brick Company was located in the Upper Freeport Seam to the southeast of Thornton, West Virginia. This mine was located off of Three Fork Creek and operated in the early 1900s. The Thornton Fire Brick Company also operated a surface mine or “clay pit” near Thornton, West Virginia, mining fireclay for brickmaking in the early 1900s. Available maps show an underground mine, of limited extent, in the Lower Kittanning

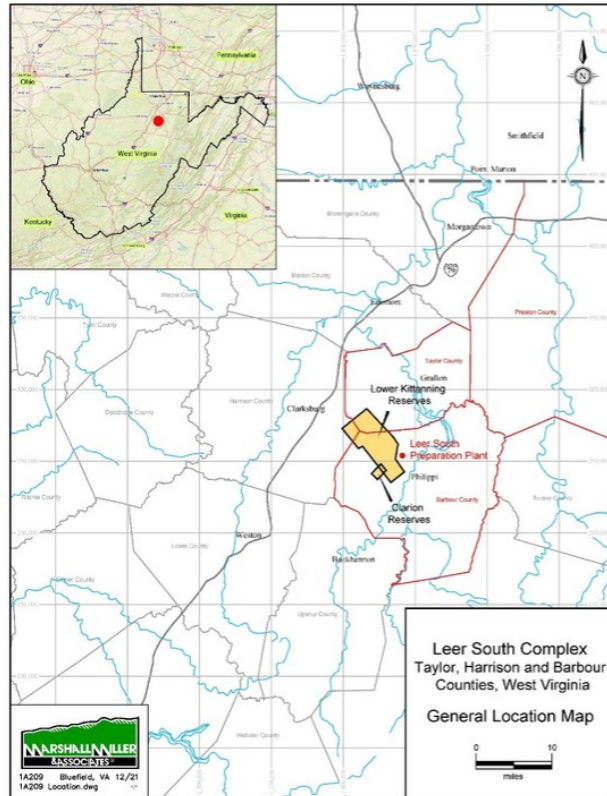
Seam to the south of Leer on the east side of Frog Run. Available data shows this as Sterling Coal Company's Cecil coal mine, with mining shown to have occurred in the early 1900s.

Leer's surface facilities are located within the Leer permit area, near central area of the mid-north boundary of the permit. The surface facilities include mine administration, engineering and operations offices, coal preparation plant, rail loadout, mine maintenance facilities, warehouse facilities, parking lots, preparation plant waste disposal, settling ponds, and Leer slope portal access. The total disturbed area for the Leer surface facilities is approximately 200 acres.

All the production is processed through a 1,400 ton-per-hour preparation plant and loaded on the CSX railroad. A 15,000-ton train can be loaded in less than four hours. Sources of electrical power, water, supplies, and materials are readily available. Electrical power is provided to the mines and facilities by regional utility companies. Water is supplied by public water services, surface impoundments, or water wells. Leer is projected to employ a maximum of 508 personnel over the life of mine plan and Leer employed approximately 520 personnel at the end of 2022. The hourly labor force remains non-union and no change in this labor arrangement is anticipated in the short term. The total cost of Leer and its associated plant and equipment as of December 31, 2022 is approximately \$325.3 million.

Leer South

Leer South is located at approximately 39° 11' 55.0572" N Latitude and 80° 3' 33.5088" W Longitude, which is approximately located near Barbour, Harrison, and Taylor Counties in West Virginia. Leer South office is located north of the town of Philippi, the county seat of Barbour County, West Virginia. The nearest cities are Clarksburg and Bridgeport, approximately 17 miles to the northwest. The city of Buckhannon is located 26 miles to the south of the mine. Charleston, the state capital of West Virginia, is located approximately 136 miles southwest of the Property.



Leer South consists of the newly commenced longwall Leer South operation in the Lower Kittanning seam, existing Sentinel underground mine in the Clarion seam, a preparation plant and a loadout facility located on approximately 26,000 acres in Barbour County, West Virginia.

Arch has obtained all mining and discharge permits to operate its mine and processing, loadout, and related support facilities. A significant portion of the reserves at Leer South are owned rather than leased from third parties. Since 1974, the Property has been controlled by various mining companies including (in chronological order: Republic Steel Corporation, Old Ben Coal Company, Black Diamond Energy Inc., Anker Mining Company (Anker), International Coal Group (ICG), and Arch. Mine development in the Clarion seam was started by ICG in 2006, and expansion into the Lower Kittanning seam was begun by Arch in 2018.

Due to its coal reserve and seam characteristics, Leer South operates using longwall (in the Lower Kittanning) methods and continuous mining (in the Clarion seam) methods. Resource and reserve models were therefore generated

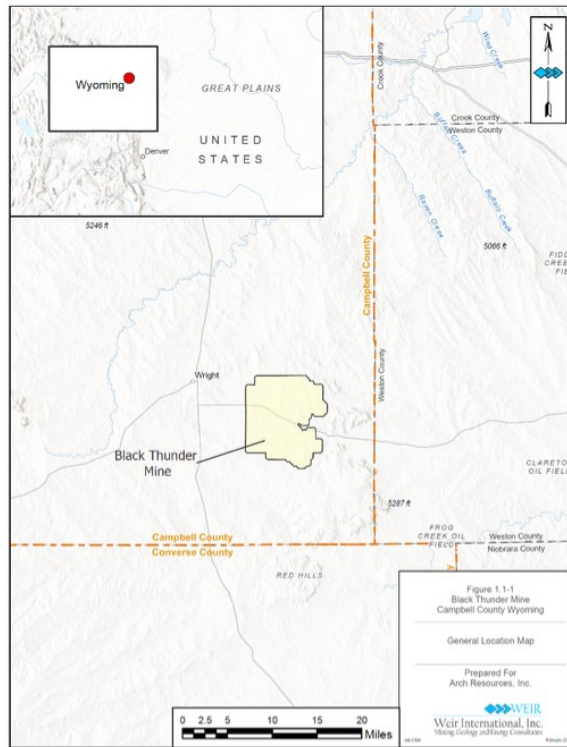
with both longwall and continuous-mining constraints in mind for Leer South's underground resources. The mines produce coal that is suitable for the high-volatile metallurgical coal markets.

Underground infrastructure has recently been upgraded to accommodate the addition of longwall mining in the Lower Kittanning Seam. Highlights include: The belt haulage has been upgraded on the main slope, belt infrastructure has been upgraded to accommodate increased tonnages from all Lower Kittanning sections to the main slope. A rail system has been added as a transport method for personnel, equipment, and supplies. Three slopes have been driven from the Clarion Seam to the overlying Lower Kittanning Seam. A coal storage bunker system has been constructed at the Lower Kittanning Seam interface. A ventilation shaft has been added to supply intake air from the Clarion workings and return air to the surface. A power upgrade has occurred including a new 138,000-volt substation and tap to the utility. A bath house addition constructed adjacent to the existing facility to accommodate the larger workforce. A bleeder shaft and fan has been installed to support the initial longwall mining district in the Lower Kittanning seam. Plant and coal handling facilities were upgraded to handle longwall volumes and include a 1,600 ton-per-hour preparation plant located near the mine, as well as a loadout facility served by the CSX railroad and connected to the plant by a 4,000 ton-per-hour conveyor system. The loadout facility is capable of loading a 15,000 ton unit train in less than four hours. The total cost of Leer South and its associated plant and equipment as of December 31, 2022 is approximately \$664.7 million. Sources of electrical power, water, supplies, and materials are readily available. Electrical power is provided to the mines and facilities by regional utility companies. Water is supplied by public water services, surface impoundments, or water wells. A total of approximately 600 non-unionized salary and hourly employees are assigned to Leer South.

Black Thunder

Black Thunder is located at approximately 43° 41' 49.8012" N Latitude and 105° 17' 20.3496" W Longitude, which is approximately 50 miles south of Gillette, Wyoming in Campbell County, within the PRB coal producing region of the United States. The United States Geological Survey (USGS) 7.5-minute quadrangle map sheets, upon which the Black Thunder can be found, are Hilight, Open A Ranch, Reno Reservoir, Piney Canyon NW, Teckla and Piney Canyon SW. The Black Thunder permit area includes approximately 35,300 acres of controlled mineral property.

Black Thunder surface facilities are located within the Black Thunder permit area, near the central area of the mid-north boundary of the permit. The surface facilities include mine administration, engineering, and operations offices, mine roads, laydown areas, ponds, crushers, rail loadouts, mine maintenance facilities, warehouse facilities, parking lots. The total disturbed area for Black Thunder surface facilities is approximately 3,230 acres. The coal, backfill, and topsoil stockpiles represent approximately 5,300 additional acres of disturbed area.



We control a significant portion of the coal reserves through federal and state leases. All of the leases have a production royalty rate of 12.5 percent of the Gross Sales Price (GSP). The leases have a minimum royalty that must be paid annually in order to maintain the lease, with the exception of one lease, which has a one-time minimum royalty payment.

Prior to the development of Black Thunder, there was no mining that occurred on the property. Black Thunder is a surface coal mine utilizing draglines and truck/shovel mining equipment for overburden removal. The mine was opened by Atlantic Richfield Company (ARCO) in 1977 and has been operated under Thunder Basin Coal Company, LLC since that time. In 1998, Arch purchased all of ARCO's domestic coal operations, which included the Thunder Basin Coal Company, Black Thunder. In 2004, Arch purchased the adjacent North Rochelle Mine from Triton Coal Company and merged it into Black Thunder. The former North Rochelle Mine facilities and reserves were subsequently sold to Peabody

Coal Company in 2006. In 2009, Arch purchased the adjacent Jacobs Ranch Mine from Rio Tinto Coal and merged it into Black Thunder, which created a mining complex that produced 116.2 million tons of coal in 2010.

Black Thunder currently consists of four active pit areas and two active loadout facilities. We ship all of the coal raw to our customers via the Burlington Northern Santa Fe and Union Pacific railroads. We do not process the coal mined at this complex. Each of the loadout facilities can load a 15,000-ton train in less than two hours.

Mine facilities built by Atlantic Richfield Company included a rail spur and loadout loop, a loadout with two 12,500-ton silos, a 100,000-ton slot storage barn, two crusher locations, a coal analysis lab, maintenance shop, warehouse, bathhouse, reclamation shop, and an administrative building. Initial pit development was conducted with truck/shovel mining equipment, but ARCO subsequently added three draglines by the time the mine was acquired by Arch. The Jacobs Ranch Mine also constructed mine facilities similar to those constructed by ARCO, however, as time progressed and mining moved farther west, these facilities, including the loadout, have been idled. The Jacobs Ranch Mine was historically one of the larger truck/shovel mines until a Bucyrus-Erie 2570W dragline with a 121 cubic yard bucket was brought on-line in 2006. Water is supplied by public water services, surface impoundments, or water wells. Black Thunder staffing includes approximately 1,010 non-unionized employees and will range from 1,078 employees to 259 employees once the mine is near the end of life. The total cost of Black Thunder and its associated plant and equipment as of December 31, 2022 is approximately \$230.5 million.

Internal Control Disclosure

Quality control procedures followed by Arch geologists are clearly defined. These procedures include the field geologist to be on site wherever drilling is occurring. On completion of a core run, the core is logged and the samples are sealed in plastic sample bags. These samples do not leave the geologists possession once they have been removed from the core barrel. The geologist is required to keep a written detailed log of each drill hole. Rock quality designation logs are to be prepared for roof and floor start for all underground mineable seams. The geologist's seam thickness measurements are checked against the geophysical logs for thickness accuracy and to confirm core recovery. In order to keep the chain of custody clear, the core samples are stored in a locked facility, that only Arch geologists have access to, until the core is delivered to the laboratory for analysis.

In our exploration and mineral resource and reserve estimation efforts, we utilize an American National Standards Institute (ANSI) certified third party laboratory, which has in-house quality control and assurance procedures. Once in possession of the samples, the laboratory standard sample preparation and security procedures are followed. After the sample has been tested, reviewed, and accepted, the disposal of the sample is done in accordance with local, state and EPA approved methods.

Weir International, Inc. (WEIR), an independent mining and geology engineering firm, has reviewed Arch's procedures and determined the sample preparation, security and analysis procedures used for the drill hole samples meet coal industry standards and practices for quality testing, with laboratory results suitable to use for geological modeling, mineral resource estimation and economic evaluation.

Year-end reserve estimates are and will continue to be reviewed by our Chief Executive Officer and other senior management, and revisions are communicated to our board of directors. Inaccuracies in our estimates of our coal reserves could result in decreased profitability from lower than expected revenue or higher than expected costs. Actual production recovered from identified reserve areas and properties, and revenue and expenditures associated with our mining operations, may vary materially from estimates.

Title to Coal Property

Title to coal properties held by lessors or grantors to us and our subsidiaries and the boundaries of properties are normally verified at the time of leasing or acquisition. However, in cases involving less significant properties and consistent with industry practices, title and boundaries are not completely verified until such time as our independent operating subsidiaries prepare to mine such reserves. If defects in title or boundaries of undeveloped reserves are discovered in the future, control of and the right to mine such reserves could be adversely affected. You should see "A

defect in title or the loss of a leasehold interest in certain property or surface rights could limit our ability to mine our coal reserves or result in significant unanticipated costs” contained in Item 1A, “Risk Factors” for more information.

At December 31, 2022, approximately 33% of our coal reserves were held in fee, with the balance controlled by leases, most of which do not expire until the exhaustion of mineable and merchantable coal. Under current mining plans, substantially all reported leased reserves will be mined out within the period of existing leases or within the time period of assured lease renewals. Royalties are paid to lessors either as a fixed price per ton or as a percentage of the gross sales price of the mined coal. The majority of the significant leases are on a percentage royalty basis. In some cases, a payment is required, payable either at the time of execution of the lease or in annual installments. In most cases, the prepaid royalty amount is applied as a credit against future production royalty obligations.

From time to time, lessors or sublessors of land leased by our subsidiaries have sought to terminate such leases on the basis that such subsidiaries have failed to comply with the financial terms of the leases or that the mining and related operations conducted by such subsidiaries are not authorized by the leases. Some of these allegations relate to leases upon which we conduct operations material to our consolidated financial position, results of operations and liquidity, but we do not believe any pending claims by such lessors or sublessors have merit or will result in the termination of any material lease or sublease.

We leased approximately 72,541 acres of property to other coal operators in 2022. We received royalty income of \$6.0 million during 2022 from the mining of approximately 3.1 million tons, \$5.2 million during 2021 from the mining of approximately 2.9 million tons and \$5.7 million during 2020 from the mining of approximately 1.7 million tons on those properties. We have included reserves at properties leased by us to other coal operators in the reserve figures set forth in this report.

ITEM 3. LEGAL PROCEEDINGS.

We are involved in various claims and legal actions arising in the ordinary course of business, including employee injury claims. After conferring with counsel, it is the opinion of management that the ultimate resolution of these claims, to the extent not previously provided for, will not have a material effect on our consolidated financial condition, results of operations or liquidity.

ITEM 4. MINE SAFETY DISCLOSURES.

The statement concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95 to this Annual Report on Form 10-K for the period ended December 31, 2022.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Our common stock is listed on the New York Stock Exchange ("NYSE") under the symbol "ARCH" and has been trading since October 5, 2016 upon our emergence from bankruptcy. No prior established public trading market existed for this newly issued common stock prior to this date. Based upon information provided by our transfer agent, as of January 31, 2022, we had 5 stockholders of Class A common stock and 1 stockholder of Class B common stock on record. As many of our shares are held by brokers and other institutions on behalf of shareholders, we are unable to estimate the total number of beneficial holders of our common stock represented by these record holders.

Holders of our common stock are entitled to receive dividends when they are declared by our Board of Directors. We paid dividends on our common stock totaling \$456.4 million in 2022, or \$25.11 per share. There is no assurance as to the amount or payment of dividends in the future because they will be subject to ongoing Board review and authorization will be based on a number of factors, including business and market conditions, the Company's future financial performance and other capital priorities.

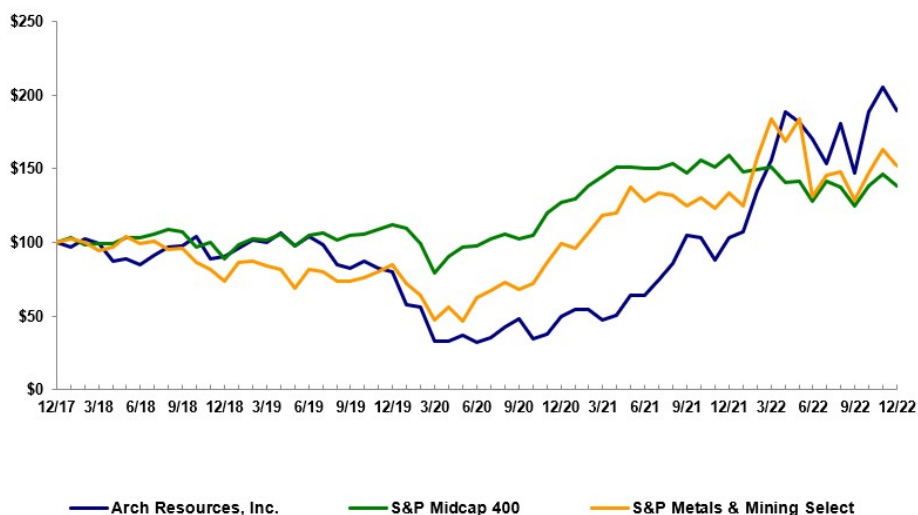
Stockholder Return Performance Presentation

The following graph compares the cumulative five year total return of holders of Arch Resources, Inc.'s common stock with the cumulative total returns of the S&P Midcap 400 index and the S&P Metals and Mining Select Industry index. The graph assumes that the value of the investment in our common stock, the S&P Midcap 400 index, and the S&P Metals and Mining Select Industry index (including reinvestment of dividends) was \$100 on December 31, 2017 and tracks it through December 31, 2022.

In 2020, the Dow Jones US Coal Index was discontinued. To mitigate the impact of these fluctuations and provide more consistency to the performance graph disclosure year after year, in 2022, we elected to replace the Dow Jones US Coal Index with the S&P Metals Mining Select Industry Index for disclosure purposes.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Arch Resources, Inc., the S&P Midcap 400 Index, and the S&P Metals & Mining Select Index



*\$100 invested on 12/31/17 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

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	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22
Arch Resources, Inc.	100.00	90.71	80.16	49.43	103.45	189.73
S&P Midcap 400	100.00	88.92	112.21	127.54	159.12	138.34
S&P Metals and Mining Select Industry	100.00	73.95	84.91	98.87	133.95	151.98

The stock price performance included in this graph is not necessarily indicative of future stock price performance.

Issuer Purchases of Equity Securities

During the second quarter of 2022, the Board of Directors increased the remaining outstanding authorization for share repurchases to \$500 million. The timing of any future share purchases, and the ultimate number of shares of our common stock to be purchased, will depend on a number of factors, including business and market conditions, our future financial performance, and other capital priorities. The shares will be acquired in the open market or through private transactions in accordance with Securities and Exchange Commission requirements. The share repurchase program has no termination date, but may be amended, suspended or discontinued at any time and does not commit us to repurchase

shares of our common stock. The actual number and value of the shares to be purchased will depend on the performance of our stock price and other market conditions.

During 2022, the Company repurchased 1,118,457 shares at an average price of \$141.97 for an aggregate purchase price of approximately \$158.8 million. As of December 31, 2022, the Company had repurchased 11,206,835 shares at an average share price of \$87.99 per share for an aggregate purchase price of approximately \$986.1 million since inception of the stock repurchase program, and the remaining authorized amount for stock repurchases under this program is approximately \$341.2 million.

A summary of our common stock repurchases during the three months ended December 31, 2022 is set forth in the table below:

<u>Date</u>	<u>Total Number Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans</u>	<u>Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plan (in thousands)</u>
October 1 through October 31, 2022	157,234	\$ 139.90	157,234	\$ 420,505
November 1 through November 30, 2022	263,634	\$ 151.90	263,634	\$ 380,459
December 1 through December 31, 2022	268,725	\$ 146.05	268,725	\$ 341,211
Total	<u>689,593</u>	<u>\$ 146.89</u>	<u>689,593</u>	

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.

Overview

Our results for the year ended December 31, 2022 benefited from strong global metallurgical and thermal coal markets. The year was impacted by numerous events, particularly the Russian invasion of Ukraine, the related European energy crisis, the continued suspension of purchases of Australian coal by China, and general inflationary pressure followed by tighter monetary policies from many nations' central banks designed to curb inflation. These events continue to evolve and impact our business environment. Global economic growth was negatively impacted, particularly in Europe, but supply constraints supported global metallurgical and thermal coal markets.

On February 24, 2022, Russia invaded Ukraine. Among the many humanitarian and economic impacts from the invasion, the significant disruption in global coal and energy supplies has had a significant upward impact on both coking and thermal coal indices. Russia was the third largest coal supplier to the international markets in 2021, and bans on the import of Russian coal by the European Union, the United Kingdom, Japan, and other nations continue to disrupt previously existing trading patterns, creating logistical issues, and pressuring availability of supply to these markets. In particular, the European Union's ban on importation of Russian coal, which became effective on August 10, 2022, and the related restriction of Russian natural gas supplies into Europe, has contributed to historically high thermal coal prices in the international markets. During the second half of 2022, reduced global demand for finished steel products led to declines in coking coal indices from the historical highs reached in the first half of the year. However, supply constraints and support from thermal coal markets, partially offset the reduction in demand for coking coal. Coking coal indices fluctuated over the second half of 2022, but remained above long-term historical averages. At times during the second half of 2022, values of certain indices for high quality thermal coal exceeded values of coking coal indices. This inversion of the historical price relationship allowed us to direct some coking quality products into thermal markets on economically favorable terms. As always, we plan to direct our products to the markets that offer us the greatest value, while honoring all of our existing commitments.

As expected, the December 30, 2021 explosion at the Curtis Bay Terminal, one of two United States East Coast terminals we utilize to export our coking coal product overseas, coupled with the increased COVID-19 case rates and general labor shortages experienced by our rail service providers, negatively impacted our volume of coking coal shipments in the first quarter of 2022. Rail service in our Metallurgical Segment has improved since the first quarter of 2022. Unfortunately, production issues, particularly at our Leer South operation, constrained our shipment volumes in the second half of 2022. These production issues are discussed further in the "Operational Performance" section of this Annual Report on Form 10-K. We continue to work diligently with our rail service provider on logistics, and to manage the internal production issues we have encountered, to meet our annual shipment volume forecasts.

Since the fourth quarter of 2020, China had effectively banned the import of coking coal and thermal coal, among other export products, from Australia, the largest global exporter of coking coal. Currently, it appears that China has at least partially lifted this ban on Australian coal for specific domestic end users. The lifting of this ban, partially or possibly in total, will once again impact trade patterns, and add volatility to international coking and thermal coal markets as they adjust to the new reality. During 2022, Russian coking coal, offered at discounts to published indices, has become a larger share of Chinese and Indian imports, but logistical, financial, and quality constraints exist as potential barriers to further increase in Russian supplies to these markets. In 2022, Australian coking coal supply has declined compared to 2021, and North American coking coal supply increased only marginally, despite coking coal prices staying persistently above long-term historical averages.

Some new coking coal supply has been added to the market, in particular, our new Leer South longwall operation. However, production and logistical disruptions, continue to constrain supply. The duration of specific supply disruptions is unknown. We believe that underinvestment in the sector in recent years underlies both the current and longer-term market dynamics. Underinvestment in the sector appears likely to persist, despite favorable markets, as government policies, including the significantly increased royalty structure in Queensland Australia, and diminished access to traditional capital markets, limits investment in the sector. In the current environment, we expect coking coal prices to remain volatile. Reduced demand for finished steel products and expectations for further reductions may put downward pressure on coking coal indices in the near term. Longer term, we believe continued limited global capital investment in new coking coal production capacity, normal reserve depletion, and an eventual return to economic growth will provide support to coking coal markets.

Domestic thermal coal consumption remained supported by high natural gas prices throughout the year ended December 31, 2022. Our thermal segment shipment volume increased versus the prior year. However, the increase was all in the first half of 2022, while second half of 2022 thermal shipment volume was negatively impacted by rail service constraints that grew progressively worse through the end of 2022. We continue to work diligently with our thermal rail service providers to improve logistical performance. Longer term, we continue to believe thermal coal demand in the United States will remain pressured by continuing increases in subsidized renewable generation sources, particularly wind and solar, and planned retirements of coal fueled generating facilities. Recently, domestic natural gas prices have declined to levels that discourage economic dispatch of some coal fired electricity generation. Despite this, we believe coal generator stockpiles are likely below desired levels at many United States power stations, and we believe some domestic coal plants had been operating at reduced levels to conserve coal stockpiles despite the favorable economic opportunity of increasing generation that existed until recently. Certain of our customers have deferred significant 2022 contracted volumes into 2023 and beyond, due to lack of adequate rail service. In the wake of the Russian invasion of Ukraine, and the associated disruption of European natural gas supplies, international thermal coal market indices increased, and have remained well above historical averages, despite recently coming off historical highs.

We continue to pursue strategic alternatives for our thermal assets, including, among other things, potential divestiture. We are concurrently shrinking our operational footprint at our thermal operations. During the year ended December 31, 2022, we completed approximately \$7.2 million of Asset Retirement Obligation (ARO) work at these operations, compared to approximately \$33.5 million in the year ended December 31, 2021. During the year ended December 31, 2022 we contributed \$116 million to a fund to pay for future ARO costs at our thermal operations, bringing total contributions to \$136 million. We plan to continue to grow this self-funding mechanism, although at a much slower rate, for our long-term reclamation ARO liabilities at our thermal operations. For further information on this fund, see Note 15, "Asset Retirement Obligations" to the Consolidated Financial Statements. During the years ended December 31, 2022 and 2021, we exercised our operational flexibility to maximize cash generation from our thermal operations, and plan to do so again in the coming year. Longer term, we will maintain our focus on aligning our thermal production rates with the expected secular decline in domestic thermal coal demand and viable export opportunities, while adjusting our thermal operating plans to minimize future cash requirements and maintain flexibility to react to short-term market fluctuations. We continue to streamline our entire organizational structure to reflect our long-term strategic direction as a leading producer of metallurgical products for the steelmaking industry.

During the fourth quarter of 2021, we sold our 49.5% equity interest in Knight Hawk Holdings, LLC. For further information on the sale of and our prior equity investment in Knight Hawk Holdings, LLC, please see Note 4, "Divestitures", and Note 10, "Equity Method Investments and Membership Interests in Joint Ventures" to the Consolidated Financial Statements.

COVID-19

In the first quarter of 2020, COVID-19 emerged as a global pandemic. The responses to the COVID-19 outbreak included actions that have a significant impact on domestic and global economies, including travel restrictions, gathering bans, stay at home orders, and many other restrictive measures. Currently, many, but not all, jurisdictions globally have reduced or eliminated these restrictions. All of our operations remain classified as essential in the states in which we operate. We instituted many policies and procedures, in alignment with CDC guidelines along with state and local mandates, to protect our employees during the COVID-19 outbreak. We continually evaluate our policies and procedures, in accordance with CDC, state, and local guidelines, and make any necessary adjustments to respond to the particular circumstances in the areas in which we operate. We recognize that the COVID-19 outbreak and responses thereto also have the potential to impact both our customers and suppliers. We remain in close communication with both our customers and suppliers, and work diligently with them to mitigate potential impacts to our business.

Results of Operations

The following discussion and analysis are for the year ended December 31, 2022, compared to the same period in 2021 unless otherwise stated. For a discussion and analysis of the year ended December 31, 2021, compared to the same period in 2020, please refer to Management's Discussion and Analysis of Financial Condition and Results of Operations included in Part II, Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 16, 2022.

Year Ended December 31, 2022 and 2021

Revenues. Our revenues include sales to customers of coal produced at our operations and coal purchased from third parties. Transportation costs are included in cost of coal sales and amounts billed by us to our customers for transportation are included in revenues.

Coal sales. The following table summarizes information about our coal sales for the years ended December 31, 2022 and 2021:

	Year Ended December 31,		
	2022	2021	(Decrease) / Increase
		(In thousands)	
Coal sales	\$ 3,724,593	\$ 2,208,042	\$ 1,516,551
Tons sold	78,274	73,005	5,269

On a consolidated basis, coal sales in 2022 increased \$1,516.6 million or 68.7% from 2021, and tons sold increased 5.3 million tons, or 7.2%. Coal sales from Metallurgical operations increased \$1,008.6 million due primarily to higher realized pricing and secondarily increased volume. Thermal segment coal sales increased \$509.4 million due primarily to higher realized pricing and secondarily increased volume. See discussion in "Operational Performance" for further information about segment results.

Costs, expenses and other. The following table summarizes costs, expenses and other components of operating income for the years ended December 31, 2022 and 2021:

	Year Ended December 31,		Increase (Decrease) in Net Income
	2022	2021 (In thousands)	
Cost of sales (exclusive of items shown separately below)	\$ 2,338,863	\$ 1,579,836	\$ (759,027)
Depreciation, depletion and amortization	133,300	120,327	(12,973)
Accretion on asset retirement obligations	17,721	21,748	4,027
Change in fair value of coal derivatives and coal trading activities, net	1,274	(2,392)	(3,666)
Selling, general and administrative expenses	105,355	92,342	(13,013)
Loss on divestitures	—	24,225	24,225
Other operating expense, net	18,669	4,826	(13,843)
Total costs, expenses and other	<u>\$ 2,615,182</u>	<u>\$ 1,840,912</u>	<u>\$ (774,270)</u>

Cost of sales. Our cost of sales for the year ended December 31, 2022 increased \$759.0 million, or 48.0%, versus the year ended December 31, 2021. The increase in cost of sales is due to higher sales volumes and prices, and general inflationary pressure. Transportation costs increased approximately \$259.2 million, repairs and supplies costs increased approximately \$288.7 million, operating taxes and royalties increased approximately \$107.9 million, and compensation costs increased approximately \$51.2 million. Additionally, credit for ARO reclamation work completed primarily in our Thermal Segment decreased approximately \$33.7 million. See discussion in “Operational Performance” for further information about segment results.

Depreciation, depletion and amortization. Our depreciation, depletion and amortization costs for the year ended December 31, 2022 increased versus the year ended December 31, 2021 primarily due to increased depreciation of plant and equipment and amortization of development in our Metallurgical Segment related to the first full year of longwall operations at Leer South.

Accretion on asset retirement obligations. The decrease in accretion expense in the year ended December 31, 2022 is primarily related to the reclamation work completed in the year ended December 31, 2021 at our Coal Creek mine.

Change in fair value of coal derivatives and coal trading activities, net. The charge in the year ended December 31, 2022 is primarily related to mark-to-market losses on coal derivatives that we had entered to hedge our price risk for anticipated international thermal coal shipments, while we had mark-to-market gains on such coal derivatives for the year ended December 31, 2021.

Selling, general and administrative expenses. Selling, general and administrative expenses in the year ended December 31, 2022 increased versus the year ended December 31, 2021 due primarily to increased compensation costs of approximately \$9.3 million, primarily related to higher incentive compensation accruals recorded in the year ended December 31, 2022, increased professional services of approximately \$1.7 million, and increased travel expenses of approximately \$0.9 million.

Loss on Divestitures. During the fourth quarter of 2021, we sold our 49.5% ownership in Knight Hawk Holdings, LLC for \$38.0 million. We received \$20.5 million during the fourth quarter of 2021 and continue to receive the remainder in monthly installments which will continue through 2024. We recorded a non-cash loss in the amount of \$24.2 million during the fourth quarter of 2021. For further information on this loss, see Note 4, “Divestitures” to the Consolidated Financial Statements.

Other operating expense, net. The increase in other operating expense, net in the year ended December, 31, 2022 as compared to the year ended December, 31, 2021 results primarily from the net unfavorable impact of certain coal derivative settlements of approximately \$14.6 million and the net unfavorable impact from equity investments of

approximately \$18.1 million, partially offset by the net favorable impact of mark to market movements on heating oil positions of approximately \$8.3 million, the net favorable impact of mark to market movement on interest rate swaps of approximately \$2.4 million, increased royalty income of approximately \$3.6 million, and increased miscellaneous income of \$4.2 million.

Non-operating expense. The following table summarizes non-operating expense for the years ended December 31, 2022 and 2021:

	Year Ended December 31,		Increase (Decrease) in Net Income
	2022	2021 (In thousands)	
Non-service related pension and postretirement benefit costs	\$ (2,841)	\$ (4,339)	\$ 1,498
Net loss resulting from early retirement of debt	(14,420)	—	(14,420)
Total non-operating expenses	\$ (17,261)	\$ (4,339)	\$ (12,922)

Non-service related pension and postretirement benefit costs. The decrease in non-service related pension and postretirement benefit costs in the year ended December 31, 2022 versus the year ended December 31, 2021 is primarily due to postretirement benefit gain amortization in the year ended December 31, 2022.

Net loss resulting from early retirement of debt. In the year ended December 31, 2022, we repaid \$273.8 million of our Term Loan and entered into privately negotiated exchanges and repurchases for approximately \$142.1 million principal amount of our Convertible Notes. As a result of these transactions, we recorded losses of \$14.4 million resulting from early debt extinguishment expenses. For further information regarding the Term Loan repurchases and the Convertible Notes exchanges and repurchases, see Note 13, “Debt and Financing Arrangements” to the Consolidated Financial Statements.

(Benefit from) provision for income taxes. The following table summarizes our provision for income taxes for the years ended December 31, 2022 and 2021:

	Year Ended December 31,		Increase (Decrease) in Net Income
	2022	2021 (In thousands)	
(Benefit from) provision for income taxes	\$ (251,926)	\$ 1,874	\$ 253,800

The benefit from income taxes in the year ended December 31, 2022 is related to the release of the valuation allowance we have held against the value of our net deferred tax assets due to the significant three-year cumulative income position caused in large part by record profitability in the current year. See Note 14, to the Consolidated Financial Statements “Taxes,” for additional information and a reconciliation of the statutory federal income tax provision (benefit) at the statutory rate to the actual benefit from taxes.

Operational Performance

Year Ended December 31, 2022 and 2021

Our mining operations are evaluated based on Adjusted EBITDA, per-ton cash operating costs (defined as including all mining costs except depreciation, depletion, amortization, accretion on asset retirements obligations, and pass-through transportation expenses divided by segment tons sold), and on other non-financial measures, such as safety and environmental performance. Adjusted EBITDA is defined as net income attributable to the Company before the effect of net interest expense, income taxes, depreciation, depletion and amortization, the amortization of sales contracts, the accretion on asset retirement obligations, and non-operating income (expense). Adjusted EBITDA may also be adjusted for items that may not reflect the trend of future results by excluding transactions that are not indicative of our core operating performance. Adjusted EBITDA is not a measure of financial performance in accordance with generally

accepted accounting principles, and items excluded from Adjusted EBITDA are significant in understanding and assessing our financial condition. Therefore, Adjusted EBITDA should not be considered in isolation, nor as an alternative to net income, income from operations, cash flows from operations or as a measure of our profitability, liquidity or performance under generally accepted accounting principles. Furthermore, analogous measures are used by industry analysts to evaluate the Company's operating performance. Investors should be aware that our presentation of Adjusted EBITDA may not be comparable to similarly titled measures used by other companies.

The following table shows operating results of coal operations for the years ended December 31, 2022 and 2021.

	Year Ended December 31, 2022	Year Ended December 31, 2021	Variance
Metallurgical			
Tons sold (in thousands)	7,832	7,690	142
Coal sales per ton sold	\$ 223.91	\$ 126.44	\$ 97.47
Cash cost per ton sold	\$ 93.61	\$ 68.84	\$ (24.77)
Cash margin per ton sold	\$ 130.30	\$ 57.60	\$ 72.70
Adjusted EBITDA (in thousands)	\$ 1,021,932	\$ 442,830	\$ 579,102
Thermal			
Tons sold (in thousands)	70,442	65,280	5,162
Coal sales per ton sold	\$ 19.50	\$ 13.95	\$ 5.55
Cash cost per ton sold	\$ 14.57	\$ 11.35	\$ (3.22)
Cash margin per ton sold	\$ 4.93	\$ 2.60	\$ 2.33
Adjusted EBITDA (in thousands)	\$ 353,884	\$ 175,709	\$ 178,175

This table reflects numbers reported under a basis that differs from U.S. GAAP. See the "Reconciliation of Non-GAAP measures" below for explanation and reconciliation of these amounts to the nearest GAAP figures. Other companies may calculate these per ton amounts differently, and our calculation may not be comparable to other similarly titled measures.

Metallurgical — Adjusted EBITDA for the year ended December 31, 2022 increased from the year ended December 31, 2021 due to increased coal sales per ton sold and increased tons sold. These benefits were partially offset by increased cash cost of sales per ton sold. The improvement in coal sales per ton sold over the prior year is primarily due to significantly higher coking coal index prices. As discussed previously in the "Overview," coking coal indices remained above long-term averages throughout the year ended December 31, 2022 due to supply constraints and a longer term, global lack of investment in the industry. Additionally, coal sales per ton sold in the year ended December 31, 2022 benefitted from an increase in the percentage of coking coal tons sold versus thermal byproduct tons sold compared to the year ended December 31, 2021. Cash cost per ton sold increased due to increased taxes and royalties that are based on a percentage of coal sales per ton sold, and general inflationary pressure on most goods and services.

The initial ramp up of our Leer South longwall operation is effectively complete. During the year ended December 31, 2022 we encountered localized areas of adverse geologic conditions in our second longwall panel, after a successful move in May, which negatively impacted our productivity in these areas. These conditions impacted production for most of third quarter and somewhat into the fourth quarter of 2022. Conditions and productivity improved over the course of fourth quarter. The longwall move to our third panel at Leer South, where conditions and productivity are expected to improve further, was completed in early January 2023. Currently, early productivity in this third longwall panel is meeting our expectations. We continue to expect the addition of this second longwall operation to our Metallurgical Segment will significantly increase our future volumes and strengthen our low average segment cost structure relative to our peers.

Our Metallurgical segment sold 7.4 million tons of coking coal and 0.4 million tons of associated thermal coal in the year ended December 31, 2022, compared to 7.0 million tons of coking coal and 0.7 million tons of associated thermal coal in the year ended December 31, 2021. Longwall operations accounted for approximately 78% of our

shipment volume in the year ended December 31, 2022, compared to approximately 71% of our shipment volume in the year ended December 31, 2021.

Thermal — Adjusted EBITDA for the year ended December 31, 2022 increased versus the year ended December 31, 2021, due to increased coal sales per ton sold, and increased tons sold, partially offset by increased cash cost per ton sold. The improvement in coal sales per ton sold in the current year period is due to the significant quantity of high-priced domestic business we were able to contract during the second half of 2021, when the prices of domestic thermal coal increased to historically high levels due to high natural gas prices and a lack of investment in the industry. Coal sales per ton sold in the current year also benefited from historically high international thermal coal indices upon which most of our export thermal sales are priced. Tons sold increased in the current year due to demand response from high natural gas prices. However, the increase in tons sold was muted by poor rail service in the second half of the year. Cash cost per ton sold increased due to increased taxes and royalties that are based on a percentage of coal sales per ton sold, and general inflationary pressure on most goods and services, particularly diesel fuel and explosives, partially offset by increased sales volume.

Reconciliation of NON-GAAP measures

Non-GAAP Segment coal sales per ton sold

Non-GAAP Segment coal sales per ton sold is calculated as segment coal sales revenues divided by segment tons sold. Segment coal sales revenues are adjusted for transportation costs, and may be adjusted for other items that, due to generally accepted accounting principles, are classified in "other income" on the Consolidated Statements of Operations, but relate to price protection on the sale of coal. Segment coal sales per ton sold is not a measure of financial performance in accordance with generally accepted accounting principles. We believe segment coal sales per ton sold provides useful information to investors as it better reflects our revenue for the quality of coal sold and our operating results by including all income from coal sales. The adjustments made to arrive at these measures are significant in understanding and assessing our financial condition. Therefore, segment coal sales revenues should not be considered in isolation, nor as an alternative to coal sales revenues under generally accepted accounting principles.

Year Ended December 31, 2022 (In thousands)	Metallurgical	Thermal	Idle and Other	Consolidated
GAAP Revenues in the Consolidated Statements of Operations	\$ 2,157,710	\$ 1,566,883	\$ —	\$ 3,724,593
Less: Adjustments to reconcile to Non-GAAP Segment coal sales revenue				
Coal risk management derivative settlements classified in "other income"	—	42,068	—	42,068
Coal sales revenues from idled or otherwise disposed operations not included in segments	—	—	—	—
Transportation costs	404,098	151,523	—	555,621
Non-GAAP Segment coal sales revenues	\$ 1,753,612	\$ 1,373,292	\$ —	\$ 3,126,904
Tons sold	7,832	70,442		
Coal sales per ton sold	\$ 223.91	\$ 19.50		

Year Ended December 31, 2021 (In thousands)	Metallurgical	Thermal	Idle and Other	Consolidated
GAAP Revenues in the Consolidated Statements of Operations	\$ 1,149,133	\$ 1,057,480	\$ 1,429	\$ 2,208,042
Less: Adjustments to reconcile to Non-GAAP Segment coal sales revenue				
Coal risk management derivative settlements classified in "other income"	(1,192)	28,656	—	27,464
Coal sales revenues from idled or otherwise disposed operations not included in segments	—	—	1,424	1,424
Transportation costs	177,917	118,270	5	296,192
Non-GAAP Segment coal sales revenues	\$ 972,408	\$ 910,554	\$ —	\$ 1,882,962
Tons sold	7,690	65,280		
Coal sales per ton sold	\$ 126.44	\$ 13.95		

Non-GAAP Segment cash cost per ton sold

Non-GAAP Segment cash cost per ton sold is calculated as segment cash cost of coal sales divided by segment tons sold. Segment cash cost of coal sales is adjusted for transportation costs, and may be adjusted for other items that, due to generally accepted accounting principles, are classified in "other income" on the Consolidated Statements of Operations, but relate directly to the costs incurred to produce coal. Segment cash cost per ton sold is not a measure of financial performance in accordance with generally accepted accounting principles. We believe segment cash cost per ton sold better reflects our controllable costs and our operating results by including all costs incurred to produce coal. The adjustments made to arrive at these measures are significant in understanding and assessing our financial condition. Therefore, segment cash cost of coal sales should not be considered in isolation, nor as an alternative to cost of sales under generally accepted accounting principles.

Year Ended December 31, 2022 (In thousands)	Metallurgical	Thermal	Idle and Other	Consolidated
GAAP Cost of sales in the Consolidated Statements of Operations	\$ 1,137,240	\$ 1,187,603	\$ 14,020	\$ 2,338,863
Less: Adjustments to reconcile to Non-GAAP Segment cash cost of coal sales				
Diesel fuel risk management derivative settlements classified in "other income"		9,956	—	9,956
Transportation costs	404,098	151,523	—	555,621
Cost of coal sales from idled or otherwise disposed operations not included in segments	—	—	2,610	2,610
Other (operating overhead, certain actuarial, etc.)	—	—	11,410	11,410
Non-GAAP Segment cash cost of coal sales	\$ 733,142	\$ 1,026,124	\$ —	\$ 1,759,266
Tons sold	7,832	70,442		
Cash Cost Per Ton Sold	\$ 93.61	\$ 14.57		

Year Ended December 31, 2021 (In thousands)	Metallurgical	Thermal	Idle and Other	Consolidated
GAAP Cost of sales in the Consolidated Statements of Operations	\$ 707,312	\$ 859,070	\$ 13,454	\$ 1,579,836
Less: Adjustments to reconcile to Non-GAAP Segment cash cost of coal sales				
Transportation costs	177,917	118,270	5	296,192
Cost of coal sales from idled or otherwise disposed operations not included in segments	—	—	5,838	5,838
Other (operating overhead, certain actuarial, etc.)	—	—	7,611	7,611
Non-GAAP Segment cash cost of coal sales	\$ 529,395	\$ 740,800	\$ —	\$ 1,270,195
Tons sold	7,690	65,280		
Cash Cost Per Ton Sold	\$ 68.84	\$ 11.35		

Reconciliation of Segment Adjusted EBITDA to Net Income (loss)

The discussion in “Results of Operations” above includes references to our Adjusted EBITDA for each of our reportable segments. Adjusted EBITDA is defined as net income (loss) attributable to the Company before the effect of net interest expense, income taxes, depreciation, depletion and amortization, the amortization of sales contracts, and the accretion on asset retirement obligations. Adjusted EBITDA may also be adjusted for items that may not reflect the trend of future results by excluding transactions that are not indicative of our core operating performance. We use Adjusted EBITDA to measure the operating performance of our segments and allocate resources to our segments. Adjusted EBITDA is not a measure of financial performance in accordance with generally accepted accounting principles, and items excluded from Adjusted EBITDA are significant in understanding and assessing our financial condition. Therefore, Adjusted EBITDA should not be considered in isolation, nor as an alternative to net income (loss), income (loss) from operations, cash flows from operations or as a measure of our profitability, liquidity or performance under generally accepted accounting principles. Investors should be aware that our presentation of Adjusted EBITDA may not be comparable to similarly titled measures used by other companies. The table below shows how we calculate Adjusted EBITDA.

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Net income (loss)	\$ 1,330,914	\$ 337,573	\$ (344,615)
Provision for (benefit from) income taxes	(251,926)	1,874	(7)
Interest expense, net	13,162	23,344	10,624
Depreciation, depletion and amortization	133,300	120,327	121,552
Accretion on asset retirement obligations	17,721	21,748	19,887
Costs related to proposed joint venture with Peabody Energy	—	—	16,087
Asset impairment and restructuring	—	—	221,380
Gain on property insurance recovery related to Mountain Laurel longwall	—	—	(23,518)
Loss (Gain) on divestitures	—	24,225	(1,505)
Non-service related pension and postretirement benefit costs	2,841	4,339	3,884
Net loss resulting from early retirement of debt	14,420	—	—
Reorganization items, net	—	—	(26)
Adjusted EBITDA	1,260,432	533,430	23,743
EBITDA from idled or otherwise disposed operations	(828)	2,469	15,858
Selling, general and administrative expenses	105,355	92,342	82,397
Other	10,857	(9,702)	3,359
Segment Adjusted EBITDA from coal operations	<u>\$ 1,375,816</u>	<u>\$ 618,539</u>	<u>\$ 125,357</u>

Other includes primarily income from our equity investments, certain changes in the fair value of coal derivatives and coal trading activities, certain changes in fair value of heating oil derivatives we use to manage our exposure to diesel fuel pricing, net EBITDA provided by our land company, and certain miscellaneous revenue.

For the year ended December 31, 2022, amounts included in Other decreased Adjusted EBITDA by approximately \$10.9 million versus increasing Adjusted EBITDA by approximately \$9.7 million in the year ended December 31, 2021. The net decrease in Adjusted EBITDA from Other was primarily related to net unfavorable impact from equity investments of approximately \$18.1 million and unfavorable change in value of coal derivatives of approximately \$3.6 million.

Liquidity and Capital Resources

Our primary sources of liquidity are proceeds from coal sales to customers and certain financing arrangements. Excluding significant investing activity, we intend to satisfy our working capital requirements and fund capital expenditures and debt-service obligations with cash generated from operations and cash on hand. We remain focused on prudently managing costs, including capital expenditures, maintaining a strong balance sheet, and ensuring adequate liquidity.

Given the volatile nature of coal markets, and the challenges and uncertainty surrounding global events including the Russian invasion of Ukraine, global inflationary pressures and the responses thereto, changes in Chinese trade policies, and the COVID-19 pandemic, we believe it remains important to take a prudent approach to managing our balance sheet and liquidity. Additionally, banks and other lenders have become increasingly unwilling to provide financing to coal producers, especially those with significant thermal coal exposure. Due to the nature of our business, we may be limited in accessing debt capital markets or obtaining additional bank financing, or the cost of accessing this financing could become more expensive.

In light of the reduced capital requirements and current favorable pricing environment, we generated significant cash flows during the year ended December 31, 2022. During the year ended December 31, 2022, capital expenditures were approximately \$172.7 million, and we expect our capital spending to remain at maintenance levels for the foreseeable future. As evidenced throughout this year, our priority is to improve our financial position through enhancing liquidity and reducing our debt and other liabilities, while returning significant value to our stockholders. During the year ended December 31, 2022, we reduced our total debt by approximately 71 percent by repaying \$273.8 million of our Term Loan, and entering into privately negotiated exchanges and repurchases of approximately \$142.1 million in principal amount of our Convertible Notes. Consideration consisting of \$208.1 million in cash and approximately 2.6 million shares of our common stock was paid for these repurchases and exchanges of our Convertible Notes. We also contributed an additional \$116.0 million into our fund to pay for future reclamation costs at our legacy thermal operations, which brings the total funding level to \$136.0 million. During the year ended December 31, 2022, our working capital decreased approximately \$294.1 million; primarily in receivables. We ended the year with cash, equivalents, and short term investments of \$273.1 million and total liquidity of \$400.8 million. We believe our current liquidity level is sufficient to fund our business and meet both our short-term (the next twelve months) and reasonably foreseeable long-term requirements and obligations including our recently enacted variable rate dividend policy. We expect to maintain minimum liquidity levels of approximately \$250 million to \$300 million, with a substantial portion of that held in cash. In addition, we expect to hold additional cash at the end of each quarter in an amount that represents a substantial portion of the following quarter's dividend payment.

We believe we have significantly increased our future cash-generating capabilities, and as a result, in the second quarter of 2022, we launched a comprehensive capital return program that returns 50% of the prior quarter discretionary cash flow to stockholders via a variable rate cash dividend and reserves the remaining 50% for potential share buybacks, special dividends, the repurchase of potentially dilutive securities, and capital preservation. For the year ended December 31, 2022, we have paid approximately \$456.4 million to our stockholders in the form of dividends and spent approximately \$156.8 million to repurchase our common stock. Any future dividends and all of these potential uses of capital are subject to board approval and declaration.

On January 18, 2023, the Office of Workers' Compensation Programs ("OWCP") proposed revisions to regulations under the Black Lung Benefits Act (BLBA) governing authorization of self-insurers. The revisions seek to codify the practice of basing a self-insured operator's security requirement on an actuarial assessment of its total present and future black lung liability. A material change to the regulations is the requirements that all self-insured operators must post security equal to 120% of their projected black lung liabilities. The proposed regulations were posted to the Federal Register on January 19, 2023 with written comments to be accepted within 60 days of this date. The revisions proposed by the OWCP were a material deviation from their bulletin issued in December 2020 that would have required the majority of coal operators to post security equal to 70% of their projected black lung liabilities, which, at the time, equated to the Company posting additional collateral of \$71.1 million. If the above regulation is codified into law, the Company will be required to post additional collateral to maintain its self-insured status. The Company is evaluating alternatives to self-insurance, including the purchase of commercial insurance to cover these claims. Additionally, the

Company is assessing the availability of surety bond capacity within the markets, additional sources of liquidity, and other items to satisfy the proposed regulations. Any of these outcomes will require additional collateral and would reduce our available liquidity.

Based on the fourth quarter discretionary cash flow, a combined fixed and variable dividend payment of \$3.11 per share will be made to stockholders of record as of February 28, 2023, payable on March 15, 2023.

The table below summarizes our fourth quarter discretionary cash flow and total dividend payout:

	Three Months Ended December 31, 2022	
Cash flow from operating activities	\$	194,309
Less: Capital expenditures		(78,211)
Discretionary cash flow	\$	116,098
Variable dividend percentage		50%
Total dividend to be paid	\$	58,049
Total dividend per share (variable and fixed)	\$	3.11

During the second quarter of 2022, the Board of Directors increased the remaining outstanding authorization for share repurchases to \$500 million. During the year ended December 31, 2022, we repurchased 1,118,457 shares of our stock for approximately \$158.8 million, with \$156.8 million paid during 2022, bringing total repurchases to 11,206,835 shares for approximately \$986 million since the inception of the program in 2017. The timing of any future share purchases, and the ultimate number of shares to be purchased, will depend on a number of factors, including business and market conditions, our future financial performance, and other capital priorities. The shares will be acquired in the open market or through private transactions in accordance with Securities and Exchange Commission requirements. Our share repurchase program may be amended, suspended or discontinued at any time and does not commit us to repurchase shares of our common stock.

During the year ended December 31, 2022, we repaid \$273.8 million of our Term Loan. The remaining balance of \$6.5 million was left as certain terms and conditions governing the Term Loan are incorporated into our outstanding indebtedness. We will continue to make quarterly principal amortization payments in an amount equal to \$750,000. The Term Loan Debt Facility will mature on March 7, 2024. For further information regarding the Term Loan Debt Facility, see Note 13, "Debt and Financing Arrangements" to the Consolidated Financial Statements.

During the year ended December 31, 2022, we entered into exchange and repurchase agreements of \$142.1 million principal amount of our Convertible Notes for aggregate consideration consisting of \$208.1 million in cash and approximately 2.6 million shares of our common stock. After the exchanges and repurchases, approximately \$13.2 million in aggregate principal amount of Convertible Notes remained outstanding with the terms unchanged. During the fourth quarter of 2022, the common stock price condition of the Convertible Notes was satisfied, and as a result, the outstanding Convertible Notes are convertible at the election of the noteholders during the first quarter of 2023. As of December 31, 2022, the if-converted value of the outstanding Convertible Notes exceeded the principal amount by approximately \$45.9 million. For further information regarding the Convertible Notes and the Convertible Notes exchanges and repurchases, see Note 13, "Debt and Financing Arrangements" to the Consolidated Financial Statements.

We have outstanding an aggregate of \$98.1 million of Tax Exempt Bonds issued by the West Virginia Economic Development Authority. The proceeds of the Tax Exempt Bonds were used to finance certain costs of the acquisition, construction, reconstruction, and equipping of solid waste disposal facilities at our Leer South development, and for capitalized interest and certain costs related to the issuance of the Tax Exempt Bonds. For further information regarding the Tax Exempt Bonds, see Note 13 "Debt and Financing Arrangements" to the Consolidated Financial Statements.

and similar state statutes, which require that mine property be restored in accordance with specified standards and an approved reclamation plan. Asset retirement obligations are recorded at fair value when incurred and accretion expense is recognized through the expected date of settlement. Determining the fair value of asset retirement obligations involves a number of estimates, as discussed in the section entitled “Critical Accounting Estimates” below, including the timing of payments to satisfy the obligations. The timing of payments to satisfy asset retirement obligations is based on numerous factors, including mine closure dates. Please see Note 15, “Asset Retirement Obligations” to our Consolidated Financial Statements for further information about our asset retirement obligations.

The table above also excludes certain other obligations reflected in our consolidated balance sheet, including estimated funding for pension and postretirement benefit plans and worker’s compensation obligations. The timing of contributions to our pension plans varies based on a number of factors, including changes in the fair value of plan assets and actuarial assumptions. Please see the section entitled “Critical Accounting Estimates” below for more information about these assumptions. We expect to make \$7.6 million in contributions to our pension plans in 2023.

Please see Note 19, “Workers’ Compensation Expense”, and Note 20, “Employee Benefit Plans” to our Consolidated Financial Statements for more information about the amounts we have recorded for workers’ compensation and pension and postretirement benefit obligations, respectively.

Off-Balance Sheet Arrangements

In the normal course of business, we are a party to certain off-balance sheet arrangements. These arrangements include guarantees, indemnifications, financial instruments with off-balance sheet risk, such as bank letters of credit and performance or surety bonds. Liabilities related to these arrangements are not reflected in our consolidated balance sheets, and we do not expect any material adverse effects on our financial condition, results of operations or cash flows to result from these off-balance sheet arrangements.

We use a combination of surety bonds and letters of credit to secure our financial obligations for reclamation, workers’ compensation, coal lease obligations and other obligations as follows as of December 31, 2022:

	<u>Reclamation Obligations</u>	<u>Lease Obligations</u>	<u>Workers’ Compensation Obligations</u> (Dollars in thousands)	<u>Other</u>	<u>Total</u>
Surety bonds	\$ 457,065	\$ 31,845	\$ 50,028	\$ 7,008	\$ 545,946
Letters of credit	—	—	66,671	1,354	68,025

Cash Flow

The following is a summary of cash provided by or used in each of the indicated types of activities during the years ended December 31, 2022 and 2021:

	<u>Year Ended December 31,</u>	
	<u>2022</u>	<u>2021</u>
(In thousands)		
Cash provided by (used in):		
Operating activities	\$ 1,209,540	\$ 238,284
Investing activities	(203,794)	(141,215)
Financing activities	(1,094,882)	35,781

Cash provided by operating activities increased in the year ended December 31, 2022 versus the year ended December 31, 2021 mainly due to the improvement in results from operations discussed in the “Overview” and “Operational Performance” sections above, and by a net favorable change in working capital requirements of approximately \$294 million, primarily in receivables, partially offset by increased funding of our fund for asset retirement obligations of approximately \$116 million.

Cash used in investing activities increased in the year ended December 31, 2022 versus the year ended December 31, 2021 primarily due to a net increase in cash used in short term investments of approximately \$110 million, and an approximately \$19 million decrease in proceeds from disposals and divestitures, mainly due to the proceeds from the divestiture of Knight Hawk Holdings in the year ended December 31, 2021, partially offset by an approximately \$73 million decrease in capital expenditures, as the Leer South mine development was completed in the second half of the year ended December 31, 2021.

Cash was used by financing activities in the year ended December 31, 2022 versus provided by financing activities in the year ended December 31, 2021. The net change in financing activities includes increased dividends paid of approximately \$453 million, increased payments on the Term Loan of approximately \$266 million, payments on the Convertible Notes of approximately \$208 million, and purchases of treasury stock of approximately \$157 million in the year ended December 31, 2022, as well as, proceeds of approximately \$45 million from issuance of Tax Exempt Bonds and \$19 million from equipment financing in the prior year period.

Critical Accounting Estimates

We prepare our financial statements in accordance with accounting principles that are generally accepted in the United States. The preparation of these financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses as well as the disclosure of contingent assets and liabilities. Management bases our estimates and judgments on historical experience and other factors that are believed to be reasonable under the circumstances. Additionally, these estimates and judgments are discussed with our audit committee on a periodic basis. Actual results may differ from the estimates used under different assumptions or conditions. We have provided a description of all significant accounting policies in the notes to our Consolidated Financial Statements. We believe that of these significant accounting policies, the following may involve a significant level of estimation uncertainty and have had or are reasonably likely to have a material impact on our financial condition or results of operations:

Derivative Financial Instruments

We utilize derivative instruments to manage exposures to commodity prices and interest rate risk on long-term debt. Additionally, we may hold certain coal derivative instruments for trading purposes. Derivative financial instruments are recognized in the balance sheet at fair value. Certain coal contracts may meet the definition of a derivative instrument, but because they provide for the physical purchase or sale of coal in quantities expected to be used or sold by us over a reasonable period in the normal course of business, they are not recognized on the balance sheet and changes in the fair value of the derivative instrument are recorded in the Consolidated Statements of Operations.

Certain derivative instruments are designated as the hedge instrument in a hedging relationship. In a cash flow hedge, we hedge the risk of changes in future cash flows related to the underlying item being hedged. Changes in the fair value of the derivative instrument used as a hedge instrument in a cash flow hedge are recorded in other comprehensive income. Amounts in other comprehensive income are reclassified to earnings when the hedged transaction affects earnings and are classified in a manner consistent with the transaction being hedged.

We formally document all relationships between hedging instruments and hedged items, as well as our risk management objectives for undertaking various hedge transactions. We evaluate the effectiveness of our hedging relationships both at the hedge inception and on an ongoing basis.

See Note 11 to the Consolidated Financial Statements, "Derivatives" for further disclosures related to the Company's derivative instruments.

Impairment of Long-lived Assets

We review our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. These events and circumstances include, but are not limited to, a current expectation that a long-lived asset will be disposed of significantly before the end of its previously estimated

useful life, a significant adverse change in the extent or manner in which we use a long-lived asset or a change in its physical condition.

When such events or changes in circumstances occur, a recoverability test is performed comparing projected undiscounted cash flows from the use and eventual disposition of an asset or asset group to its carrying amount. If the projected undiscounted cash flows are less than the carrying amount, an impairment is recorded for the excess of the carrying amount over the estimate fair value, which is generally determined using discounted future cash flows. If we recognize an impairment loss, the adjusted carrying amount of the asset becomes the new cost basis. For a depreciable long-lived asset, the new cost basis will be depreciated (amortized) over the remaining estimated useful life of the asset.

We make various assumptions, including assumptions regarding future cash flows in our assessments of long-lived assets for impairment. The assumptions about future cash flows and growth rates are based on the current and long-term business plans related to the long-lived assets. Discount rate assumptions are based on an assessment of the risk inherent in the future cash flows of the long-lived assets. These assumptions require significant judgments on our part, and the conclusions that we reach could vary significantly based upon these judgments.

As of December 31, 2022, there were no indicators of impairment identified.

Please see the Note 5, “Asset impairment and restructuring” to our Consolidated Financial Statements for more information about the amounts we have recorded for Asset Impairment.

Asset Retirement Obligations

Our asset retirement obligations arise from SMCRA and similar state statutes, which require that mine property be restored in accordance with specified standards and an approved reclamation plan. Significant reclamation activities include reclaiming refuse and slurry ponds, reclaiming the pit and support acreage at surface mines, and sealing portals at deep mines. Our asset retirement obligations are initially recorded at fair value, or the amount at which the obligations could be settled in a current transaction between willing parties. This involves determining the present value of estimated future cash flows on a mine-by-mine basis based upon current permit requirements and various estimates and assumptions, including estimates of disturbed acreage, reclamation costs and assumptions regarding equipment productivity. We estimate disturbed acreage based on approved mining plans and related engineering data. Since we plan to use internal resources to perform the majority of our reclamation activities, our estimate of reclamation costs involves estimating third-party profit margins, which we base on our historical experience with contractors that perform certain types of reclamation activities. We base productivity assumptions on historical experience with the equipment that we expect to utilize in the reclamation activities. In order to determine fair value, we discount our estimates of cash flows to their present value. We base our discount rate on the rates of treasury bonds with maturities similar to expected mine lives, adjusted for our credit standing.

Accretion expense is recognized on the obligation through the expected settlement date. On at least an annual basis, we review our entire reclamation liability and make necessary adjustments for permit changes as granted by state authorities, changes in the timing and extent of reclamation activities, and revisions to cost estimates and productivity assumptions, to reflect current experience. Any difference between the recorded amount of the liability and the actual cost of reclamation will be recognized as a gain or loss when the obligation is settled. We expect our actual cost to reclaim our properties will be less than the expected cash flows used to determine the asset retirement obligation. At December 31, 2022, our balance sheet reflected asset retirement obligation liabilities of \$244.4 million, including amounts classified as a current liability. As of December 31, 2022, we estimate the aggregate uninflated and undiscounted cost of final mine closures to be approximately \$389.8 million.

See the roll forward of the asset retirement obligation liability in Note 15, “Asset Retirement Obligations” to the Consolidated Financial Statements.

Employee Benefit Plans

We have non-contributory defined benefit pension plans covering certain of our salaried and hourly employees. Benefits are generally based on the employee's years of service and compensation. The actuarially-determined funded status of the defined benefit plans is reflected in the balance sheet.

The calculation of our net periodic benefit costs (pension expense) and benefit obligation (pension liability) associated with our defined benefit pension plan requires the use of a number of assumptions. These assumptions are summarized in Note 20, "Employee Benefit Plans", to the Consolidated Financial Statements. Changes in these assumptions can result in different pension expense and liability amounts, and actual experience can differ from the assumptions.

- The expected long-term rate of return on plan assets is an assumption reflecting the average rate of earnings expected on the funds invested or to be invested to provide for the benefits included in the projected benefit obligation. We establish the expected long-term rate of return at the beginning of each fiscal year based upon historical returns and projected returns on the underlying mix of invested assets. The pension plan's investment targets are 15% equity and 85% fixed income securities. Investments are rebalanced on a periodic basis to approximate these targeted guidelines.
- The discount rate represents our estimate of the interest rate at which pension benefits could be effectively settled. Assumed discount rates are used in the measurement of the projected, accumulated and vested benefit obligations and the service and interest cost components of the net periodic pension cost. The determination of the discount rate was updated from our actuary's proprietary Yield Curve model, under which the expected benefit payments of the plan are matched against a series of spot rates from a market basket of high quality fixed income securities.

The differences generated from changes in assumed discount rates and returns on plan assets are amortized into earnings using the corridor method, whereby the unrecognized (gains)/losses in excess of 10% of the greater of the beginning of the year projected benefit obligation or market-related value of assets are amortized over the average remaining life expectancy of the plan participants.

We also currently provide certain postretirement medical and life insurance coverage for eligible employees. Generally, covered employees who terminate employment after meeting eligibility requirements are eligible for postretirement coverage for themselves and their dependents. The salaried employee postretirement benefit plans are contributory, with retiree contributions adjusted periodically, and contain other cost-sharing features such as deductibles and coinsurance.

Actuarial assumptions are required to determine the amounts reported as obligations and costs related to the postretirement benefit plan. The discount rate assumption reflects the rates available on high-quality fixed-income debt instruments at year-end and is calculated in the same manner as discussed above for the pension plan.

Income Taxes

We provide for deferred income taxes related to tax attribute carryforwards and temporary differences arising from differences between the financial statement and tax basis of assets and liabilities existing at each balance sheet date using enacted tax rates expected to be in effect when the related taxes are expected to be paid or recovered. We initially recognize the effects of a tax position when it is more than 50 percent likely, based on the technical merits, that the position will be sustained upon examination, including resolution of the related appeals or litigation processes, if any. Our determination of whether or not a tax position has met the recognition threshold considers the facts, circumstances, and information available at the reporting date.

We assess the realizability of our deferred tax assets by analyzing all positive and negative evidence available, including but not limited to three years of pre-tax operating results, available tax planning strategies, reversal of taxable temporary differences and future taxable income. A valuation allowance is recorded against deferred tax assets if the preponderance of evidence suggests that it is not more likely than not that all or a portion of the deferred tax assets will be realized.

As of 2022, the Company is in a 3-year cumulative income position. After considering all positive and negative evidence, we have concluded that the positive evidence outweighed the negative evidence and this supports the release of the valuation allowance against our net deferred tax asset position that had been in place since 2015. We continue to record a valuation allowance for deferred tax assets to the extent it is more-likely-than-not that they will, either wholly or partially, not be recognized. As of 2022, we have a valuation allowance recorded against certain state NOLs and capital losses, totaling \$83.7 million.

See Note 14 to the Consolidated Financial Statements, "Taxes" for further disclosures about income taxes.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

We manage our commodity price risk for our non-trading, thermal coal sales through the use of long-term coal supply agreements, and to a limited extent, through the use of derivative instruments. Sales commitments in the metallurgical coal market are typically not long-term in nature, and we are therefore subject to fluctuations in market pricing.

Our commitments for 2023 are as follows:

	2023	
	Tons	\$ per ton
Metallurgical	(in millions)	
Committed, North America Priced Coking	1.0	\$ 188.48
Committed, North America Unpriced Coking	0.3	
Committed, Seaborne Priced Coking	0.2	166.47
Committed, Seaborne Unpriced Coking	4.1	
Committed, Priced Thermal	0.1	81.64
Committed, Unpriced Thermal	0.1	
Thermal		
Committed, Priced	68.2	\$ 17.50
Committed, Unpriced	2.1	

We have exposure to price risk for supplies that are used directly or indirectly in the normal course of production, such as diesel fuel, steel, explosives and other items. We manage our risk for these items through strategic sourcing contracts in normal quantities with our suppliers. We may sell or purchase forward contracts, swaps and options in the over-the-counter market in order to manage our exposure to price risk related to these items.

We are exposed to price risk with respect to diesel fuel purchased for use in our operations. We anticipate purchasing approximately 40 to 45 million gallons of diesel fuel for use in our operations during 2023. To protect our cash flows from increases in the price of diesel fuel, we have purchased heating oil call options. At December 31, 2022, we had protected the price of expected diesel fuel purchases for 2023 with approximately 15 million gallons of heating oil call options with an average strike price of \$4.07 per gallon. These positions are not designated as hedges for accounting purposes, and therefore, changes in the fair value are recorded immediately to earnings.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

The Consolidated Financial Statements and consolidated financial statement schedule of Arch Resources, Inc. and subsidiaries are included in this Annual Report on Form 10-K beginning on page F-1.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES.

We performed an evaluation under the supervision and with the participation of our management, including our chief executive officer and chief financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2022, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended. Based on that evaluation, our management, including our chief executive officer and chief financial officer, concluded that the disclosure controls and procedures were effective as of such date. There were

no changes in our internal control over financial reporting during the fiscal quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

We incorporate by reference the opinion of independent registered public accounting firm and management's report on internal control over financial reporting included within the Financial Statement section of this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION.

Director and Officer Indemnification Agreement

On February 9, 2023, the Board of Directors of the Company approved and adopted a form of indemnification agreement to be entered into by the Company with each of its directors and executive officers (each, an "Indemnitee"). The indemnification agreement provides that the Company will indemnify the Indemnitee against certain expenses and costs arising out of claims to which he or she becomes subject in connection with his or her service to the Company. The indemnification agreement contains customary terms and conditions and establishes certain customary procedures and presumptions.

The above description of the indemnification agreement does not purport to be complete and is qualified in its entirety by reference to the form of indemnification agreement filed as Exhibit 10.28 hereto and incorporated herein by reference.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.ER INFORMATION.

Not applicable

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE.

Except for the disclosures contained in Part I of this report under the caption “Information about our Executive Officers,” the information required under this item is incorporated herein by reference to “Director Biographies,” “Corporate Governance Practices” and, if applicable, “Delinquent Section 16(a) Reports” in our Proxy Statement for the 2023 Annual Meeting of Stockholders, which is expected to be filed with the SEC within 120 days after the close of our fiscal year.

ITEM 11. EXECUTIVE COMPENSATION.

The information required under this item is incorporated herein by reference to “Executive Compensation,” “Director Compensation,” “Compensation Committee Interlocks and Insider Participation” and “Personnel and Compensation Committee Report” in our Proxy Statement for the 2023 Annual Meeting of Stockholders, which is expected to be filed with the SEC within 120 days after the close of our fiscal year.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.

The information required under this item is incorporated herein by reference to “Equity Compensation Plan Information,” “Security Ownership of Directors and Executive Officers” and “Security Ownership of Certain Beneficial Owners” in our Proxy Statement for the 2023 Annual Meeting of Stockholders, which is expected to be filed with the SEC within 120 days after the close of our fiscal year.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE.

The information required under this item is incorporated herein by reference to “Certain Relationships and Related Transactions” and “Director Independence” in our Proxy Statement for the 2023 Annual Meeting of Stockholders, which is expected to be filed with the SEC within 120 days after the close of our fiscal year.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

The information required under this item is incorporated herein by reference to “Fees Paid to Auditors” in our Proxy Statement for the 2023 Annual Meeting of Stockholders, which is expected to be filed with the SEC within 120 days after the close of our fiscal year.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.

Financial Statements

Reference is made to the index set forth on page F-1 of this report.

Financial Statement Schedules

The following financial statement schedule of Arch Resources, Inc. is at the page indicated:

<u>Schedule</u>	<u>Page</u>
Valuation and Qualifying Accounts	<u>F-51</u>

All other financial statement schedules listed under SEC rules but not included in this report are omitted because they are not applicable or the required information is provided in the notes to our Consolidated Financial Statements.

Exhibits

Reference is made to the Exhibit Index on the following page.

ITEM 16. FORM 10-K SUMMARY.

None.

Exhibits to be included in 10-K

	Description
2.1	Debtors' Fourth Amended Joint Plan of Reorganization Under Chapter 11 of the Bankruptcy Code (incorporated by reference to Exhibit 2.1 of Arch Resources' Current Report on Form 8-K)
2.2	Order Confirming Debtors' Fourth Amended Joint Plan of Reorganization Under Chapter 11 of the Bankruptcy Code on September 13, 2016 (incorporated by reference to Exhibit 2.2)
3.1	Restated Certificate of Incorporation of Arch Resources, Inc. (incorporated by reference to Exhibit 3.2 of Arch Resources'
3.2	Amended and Restated Bylaws of Arch Resources, Inc. (incorporated by reference to Exhibit 3.1 of Arch Resources'
4.1	Form of specimen Class A Common Stock certificate (incorporated by reference to Exhibit 4.1 of Arch Resources'
4.2	Form of specimen Class B Common Stock certificate (incorporated by reference to Exhibit 4.2 of Arch Resources'
4.3	Form of specimen Series A Warrant certificate (incorporated by reference to Exhibit A of Exhibit 10.5 of Arch Resources'
4.4	Description of Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934, as amended (incorporated by reference to Exhibit 4.4 of Arch
4.5	Indenture, dated as of November 3, 2020, between Arch Resources, Inc. and UMB Bank, National Association, as trustee (incorporated by reference to Exhibit 4.1 of Arch
4.6	Form of certificate representing the 5.25% Convertible Senior Notes due 2025 (incorporated by reference to Exhibit 4.2 of
10.1	Credit Agreement, dated as of March 7, 2017, among Arch Resources, Inc. as borrower, the lenders from time to time party thereto and Credit Suisse AG, Cayman Islands Branch, in its capacities as administrative agent and as collateral agent
10.2	First Amendment to Credit Agreement, dated as of September 25, 2017, among Arch Resources, Inc. as borrower, the lenders from time to time party thereto and Credit Suisse AG, Cayman Islands Branch, in its capacities as administrative
10.3	Second Amendment to Credit Agreement, dated as of April 3, 2018, among Arch Resources, Inc. as borrower, the lenders from time to time party thereto and Credit Suisse AG, Cayman Islands Branch, in its capacities as administrative agent and as
10.4	Credit Agreement, dated as of April 27, 2017, among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank, in its capacities as administrative agent and as collateral agent
10.5	First Amendment to Credit Agreement dated November 19, 2018 by and among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank, in its capacities as administrative
10.6	Waiver Letter Agreement and Second Amendment to Credit Agreement dated June 17, 2020 by and among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank.

- 10.7 [Third Amendment to Credit Agreement dated September 30, 2020, by and among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank, in its capacities as administrative agent and collateral agent \(incorporated by reference to Exhibit 10.7 of Arch Resources' Quarterly Report on Form 10-Q for the period ended September 30, 2020\).](#)
- 10.8 [Fourth Amendment to Credit Agreement dated May 27, 2021, by and among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank, in its capacities as administrative agent and as collateral agent \(incorporated by reference to Exhibit 10.08 of Arch Resources' Quarterly Report on Form 10-Q for the period ended June 30, 2021\).](#)
- 10.9 [Fifth Amendment to Credit Agreement dated August 3, 2022, by and among Arch Resources, Inc. and certain of its subsidiaries, as borrowers, the lenders from time to time party thereto and Regions Bank, in its capacities as administrative agent and as collateral agent \(incorporated by reference to Exhibit 10.9 of Arch Resource's Quarterly Report on Form 10-Q for the period ended September 30, 2022\).](#)
- 10.10 [Third Amended and Restated Receivables Purchase Agreement, dated October 5, 2016, among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as initial servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.2 of Arch Resources' Current Report on Form 8-K filed on October 11, 2016\).](#)
- 10.11 [First Amendment to Third Amended and Restated Receivables Purchase Agreement, dated as of April 27, 2017, among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.2 of Arch Resources' Current Report on Form 8-K filed on May 2, 2017\).](#)
- 10.12 [Second Amendment to Third Amended and Restated Receivables Purchase Agreement, dated as of August 27, 2018, among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.7 of Arch Resources' Quarterly Report on Form 10-Q for the period ended September 30, 2018\).](#)
- 10.13 [Third Amendment to Third Amended and Restated Receivables Purchase Agreement, dated as of May 14, 2019, among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.9 of Arch Resources' Quarterly Report on Form 10-Q for the period ended June 30, 2019\).](#)
- 10.14 [Fourth Amendment to Third Amended and Restated Receivables Purchase Agreement, dated September 30, 2020, among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.12 of Arch Resources' Quarterly Report on Form 10-Q for the period ended September 30, 2020\).](#)
- 10.15 [Fifth Amendment to Third Amended and Restated Receivables Purchase Agreement dated as of December 4, 2020 among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.13 of Arch Resources' Quarterly Report on Form 10-Q for the period ended March 31, 2021\).](#)
- 10.16 [Sixth Amendment to Third Amended and Restated Receivables Purchase Agreement dated as of October 8, 2021 among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.15 of Arch Resources Quarterly Report on Form 10-Q for the period ended September 30, 2021\).](#)
- 10.17 [Seventh Amendment to Third Amended and Restated Receivables Purchase Agreement dated August 3, 2022 among Arch Receivable Company, LLC, as seller, Arch Coal Sales Company, Inc., as servicer, PNC Bank, National Association as administrator and issuer of letters of credit thereunder and the other parties party thereto, as securitization purchasers \(incorporated by reference to Exhibit 10.17 of Arch Resources' Quarterly Report on Form 10-Q for the period ended September 30, 2022\).](#)

10.18	Second Amended and Restated Purchase and Sale Agreement among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.19	First Amendment to the Second Amended and Restated Purchase and Sale Agreement, dated as of December 21, 2016, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.20	Second Amendment to the Second Amended and Restated Purchase and Sale Agreement, dated as of April 27, 2017, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.21	Third Amendment to Second Amended and Restated Purchase and Sale Agreement, dated as of September 14, 2017, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.22	Fourth Amendment to Second Amended and Restated Purchase and Sale Agreement, dated as of December 13, 2019, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.23	Fifth Amendment and Waiver to Second Amended and Restated Purchase and Sale Agreement dated June 17, 2020, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators (incorporated by reference to
10.24	Sixth Amendment to Second Amended and Restated Purchase and Sale Agreement dated December 31, 2020, among Arch Resources, Inc. and certain subsidiaries of Arch Resources, Inc., as originators
10.25	Second Amended and Restated Sale and Contribution Agreement between Arch Resources, Inc., as the transferor, and Arch Receivable Company, LLC (incorporated by
10.26	First Amendment to the Second Amended and Restated Sale and Contribution Agreement, dated as of April 27, 2017, between Arch Resources, Inc., as the transferor, and Arch Receivable Company, LLC (incorporated by reference to
10.27	Warrant Agreement, dated as of October 5, 2016, between Arch Resources, Inc. and American Stock Transfer & Trust Company, LLC, as Warrant Agent (incorporated by reference
10.28	Indemnification Agreement between Arch Resources, Inc. and the directors and officers of Arch Resources, Inc. and its
10.29	Registration Rights Agreement between Arch Resources, Inc. and Monarch Alternative Capital LP and certain other affiliated funds (incorporated by reference to Exhibit 10.1 of
10.30	Arch Resources' Current Report on Form 8-K filed on Coal Lease Agreement dated as of March 31, 1992, among Allegheny Land Company, as lessee, and UAC and Phoenix Coal Corporation, as lessors, and related guarantee
10.31	Federal Coal Lease dated as of January 24, 1996 between the U.S. Department of the Interior and the Thunder Basin Coal Company (incorporated by reference to Exhibit 10.20 to Arch
10.32	Federal Coal Lease dated as of November 1, 1967 between the U.S. Department of the Interior and the Thunder Basin Coal Company (incorporated by reference to Exhibit 10.21 to Arch

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- 10.33 [Federal Coal Lease effective as of May 1, 1995 between the U.S. Department of the Interior and Mountain Coal Company \(incorporated by reference to Exhibit 10.22 to Arch Resources' Annual Report on Form 10-K for the year ended December 31, 1998\).](#)
- 10.34 [Federal Coal Lease dated as of January 1, 1999 between the Department of the Interior and Ark Land Company \(incorporated by reference to Exhibit 10.23 to Arch Resources' Annual Report on Form 10-K for the year ended December 31, 1998\).](#)
- 10.35 [Federal Coal Lease effective as of March 1, 2005 by and between the United States of America and Ark Land LT, Inc. covering the tract of land known as "Little Thunder" in Campbell County, Wyoming \(incorporated by reference to Exhibit 99.1 to the Current Report on Form 8-K filed by Arch Resources on February 10, 2005\).](#)
- 10.36 [Modified Coal Lease \(WYW71692\) executed January 1, 2003 by and between the United States of America, through the Bureau of Land Management, as lessor, and Triton Coal Company, LLC, as lessee, covering a tract of land known as "North Rochelle" in Campbell County, Wyoming \(incorporated by reference to Exhibit 10.24 to Arch Resources' Annual Report on Form 10-K for the year ended December 31, 2004\).](#)
- 10.37 [Coal Lease \(WYW127221\) executed January 1, 1998 by and between the United States of America, through the Bureau of Land Management, as lessor, and Triton Coal Company, LLC, as lessee, covering a tract of land known as "North Roundup" in Campbell County, Wyoming \(incorporated by reference to Exhibit 10.25 to Arch Resources' Annual Report on Form 10-K for the year ended December 31, 2004\).](#)
- 10.38* [Letter Agreement dated October 25, 2021 by and between Arch Resources, Inc. and John W. Eaves \(incorporated by reference to Exhibit 10.36 of Arch Resources' Quarterly Report on Form 10-Q for the period ended September 30, 2021\).](#)
- 10.39* [Form of Employment Agreement for Executive Officers of Arch Resources, Inc. \(incorporated by reference to Exhibit 10.4 of Arch Resources' Annual Report on Form 10-K for the year ended December 31, 2011\).](#)
- 10.40* [Arch Resources, Inc. Deferred Compensation Plan \(incorporated by reference to Exhibit 10.26 to Arch Resources' Annual Report on Form 10-K for the year ended December 31, 2014\).](#)
- 10.41 [Arch Resources, Inc. Outside Directors' Deferred Compensation Plan \(incorporated by reference to Exhibit 10.4 of Arch Resources' Current Report on Form 8-K filed on December 12, 2008\).](#)
- 10.42* [Arch Resources, Inc. Supplemental Retirement Plan \(as amended on December 5, 2008\) \(incorporated by reference to Exhibit 10.2 to Arch Resources' Current Report on Form 8-K filed on December 12, 2008\).](#)
- 10.43* [Arch Resources, Inc. 2016 Omnibus Incentive Plan \(incorporated by reference to Exhibit 99.1 to Arch Resources' Registration Statement on Form S-8 filed on November 1, 2016\).](#)
- 10.44* [Form of Restricted Stock Unit Contract \(Time-Based Vesting\) \(incorporated by reference to Exhibit 10.1 to Arch Resources' Current Report on Form 8-K filed on November 30, 2016\).](#)
- 10.45* [Form of Restricted Stock Unit Contract \(Performance-Based Vesting\) \(incorporated by reference to Exhibit 10.2 to Arch Resources' Current Report on Form 8-K filed on November 30, 2016\).](#)
- 10.46 [Stock Repurchase Agreement dated September 13, 2017, among Arch Resources, Inc. and Monarch Alternative Solutions Master Fund Ltd, Monarch Capital Master Partners III LP, MCP Holdings Master LP, Monarch Debt Recovery Master Fund Ltd and P Monarch Recovery Ltd. \(incorporated by reference to Exhibit 10.1 of Arch Resources' Current Report on Form 8-K filed on September 19, 2017\).](#)
- 10.47 [Stock Repurchase Agreement dated December 8, 2017, among Arch Resources, Inc. and Monarch Alternative Solutions Master Fund Ltd, Monarch Capital Master Partners III LP, MCP Holdings Master LP and Monarch Debt Recovery Master Fund Ltd. \(incorporated by reference to Exhibit 10.1 of Arch Resources' Current Report on Form 8-K filed on December 11, 2017\).](#)
- 10.48 [Form of Confirmation of Base Capped Call Transaction \(incorporated by reference to Exhibit 10.1 of Arch Resources' Current Report on Form 8-K filed on November 4, 2020\).](#)
- 10.49 [Form of Exchange Agreement \(incorporated by reference to Exhibit 10.1 of Arch Resources' Current Report on Form 8-K filed on May 23, 2022\).](#)
- 21.1 [Subsidiaries of the registrant.](#)
- 23.1 [Consent of Ernst & Young LLP.](#)
- 23.2 [Consent of Weir International, Inc.](#)

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23.3	Consent of Marshall Miller & Associates, Inc.
24.1	Power of Attorney.
31.1	Rule 13a-14(a)/15d-14(a) Certification of Paul A. Lang.
31.2	Rule 13a-14(a)/15d-14(a) Certification of Matthew C. Giljum.
32.1**	Section 1350 Certification of Paul A. Lang.
32.2**	Section 1350 Certification of Matthew C. Giljum.
95	Mine Safety Disclosure Exhibit.
96.1	Technical Report Summary for Leer Mine – S-K 1300 Report. (incorporated by reference to Exhibit 96.1 to Arch Resources’ Annual Report on Form 10-K for the year ended December 31, 2021.)
96.2	Technical Report Summary for Leer South Mine – S-K 1300 Report. (incorporated by reference to Exhibit 96.2 to Arch Resources’ Annual Report on Form 10-K for the year ended December 31, 2021.)
96.3	Technical Report Summary for Black Thunder Mine – S-K 1300 Report. (incorporated by reference to Exhibit 96.3 to Arch Resources’ Annual Report on Form 10-K for the year ended December 31, 2021.)
101	The following financial statements from the Company’s Annual Report on Form 10-K for the year ended December 31, 2022, formatted in Inline XBRL: (1) Consolidated Statements of Operations, (2) Consolidated Statements of Comprehensive Income (Loss), (3) Consolidated Balance Sheets, (4) Consolidated Statements of Cash Flows, (5) Consolidated Statements of Stockholders’ Equity and (6) Notes to Consolidated Financial Statements, tagged as blocks of text and including detailed tags.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

* Denotes a management contract or compensatory plan or arrangement.

** Furnished herein

Signatures

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Arch Resources, Inc.

/s/ Paul A. Lang

Paul A. Lang

Chief Executive Officer, Director

February 16, 2023

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Signatures	Capacity	Date
<u>/s/ Paul A. Lang</u> Paul A. Lang	Chief Executive Officer, Director (Principal Executive Officer)	February 16, 2023
<u>/s/ Matthew C. Giljum</u> Matthew C. Giljum	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	February 16, 2023
<u>/s/ John W. Lorson</u> John W. Lorson	Vice President and Chief Accounting Officer (Principal Accounting Officer)	February 16, 2023
<u>*</u> John W. Eaves	Executive Chairman	February 16, 2023
<u>*</u> James N. Chapman	Director	February 16, 2023
<u>*</u> Patrick J. Bartels, Jr.	Director	February 16, 2023
<u>*</u> Patrick A. Kriegshauser	Director	February 16, 2023
<u>*</u> Richard A. Navarre	Director	February 16, 2023
<u>*</u> Holly Keller Koeppe	Director	February 16, 2023
<u>*</u> Molly P. Zhang	Director	February 16, 2023
*By <u>/s/ Rosemary L. Klein</u> Rosemary L. Klein, <i>Attorney-in-Fact</i>		

FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Arch Resources, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Arch Resources, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and the financial statement schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 16, 2023, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the account or disclosures to which it relates.

Asset Retirement Obligation (ARO) Liability

Description of Critical Audit Matter At December 31, 2022, the Company's asset retirement obligations totaled \$244.4 million. As discussed in Note 2 and Note 15 of the consolidated financial statements, the Company's obligations associated with the retirement of long-lived assets are recognized at fair value at the time the obligations are incurred. Upon initial recognition of a liability, a corresponding amount is capitalized as part of the carrying value of the related long-lived asset. The Company reviews its asset retirement obligations at least annually and makes necessary adjustments for permit changes as granted by state authorities and for revisions of estimates of the timing and extent of reclamation activities and cost estimates.

Management's estimate involves a high degree of subjectivity and auditing the significant assumptions utilized by management in estimating the fair value of the liability requires judgement. In particular, the obligation's fair value is determined using a discounted cash flow technique and is based upon mining permit requirements and various assumptions including estimates of disturbed acreage, life of the mine, reclamation costs and assumptions regarding equipment productivity.

How we addressed the Matter in our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of the controls over the Company's accounting for asset retirement obligations, including controls over management's review of the significant assumptions described above.

We assessed the work of the Company's engineering specialists in identifying asset retirement obligation activities against legislative requirements and assessing their timing and likely cost. We compared the Company's methodology to calculate the asset retirement obligations with our industry practice and understanding of the business. We evaluated management's assumptions by validating the underlying inputs within the calculations and recosting studies, including those listed above. We involved a specialist to assist in our evaluation of the accuracy of management's assumptions within the Company's asset retirement obligation estimate including reviewing mine closure regulatory requirements, mine plans and engineering drawings for consistency with permit requirements and conducting virtual observations of mining and reclamation areas.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 1997.

St. Louis, Missouri

February 16, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Arch Resources, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Arch Resources, Inc. and subsidiaries internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control— Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Arch Resources, Inc. and subsidiaries (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income(loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15, and our report dated, February 16, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

St. Louis, Missouri
February 16, 2023

REPORT OF MANAGEMENT

The management of Arch Resources, Inc. and subsidiaries (the “Company”) is responsible for the preparation of the consolidated financial statements and related financial information in this annual report. The financial statements are prepared in accordance with accounting principles generally accepted in the United States and necessarily include some amounts that are based on management’s informed estimates and judgments, with appropriate consideration given to materiality.

The Company maintains a system of internal accounting controls designed to provide reasonable assurance that financial records are reliable for purposes of preparing financial statements and that assets are properly accounted for and safeguarded. The concept of reasonable assurance is based on the recognition that the cost of a system of internal accounting controls should not exceed the value of the benefits derived. The Company has a professional staff of internal auditors who monitor compliance with and assess the effectiveness of the system of internal accounting controls.

The Audit Committee of the Board of Directors, comprised of independent directors, meets regularly with management, the internal auditors, and the independent auditors to discuss matters relating to financial reporting, internal accounting control, and the nature, extent and results of the audit effort. The independent auditors and internal auditors have full and free access to the Audit Committee, with and without management present.

MANAGEMENT’S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Arch Resources, Inc. and subsidiaries (the “Company”) is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Securities Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed under the supervision of our principal executive officer and principal financial officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Because of its inherent limitations, internal control over financial reporting may not detect or prevent misstatements. Projections of any evaluation of the effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or processes may deteriorate.

Under the supervision and with the participation of the Company’s management, including its principal executive officer and principal financial officer, the Company conducted an evaluation of the effectiveness of its internal control over financial reporting as of December 31, 2022 based on the criteria set forth in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on its evaluation, management concluded that the Company’s internal control over financial reporting is effective as of December 31, 2022.

The Company’s independent registered public accounting firm, Ernst & Young LLP, has issued an audit opinion on the Company’s internal control over financial reporting as of December 31, 2022.

Arch Resources, Inc. and Subsidiaries
Consolidated Statements of Operations
(in thousands, except per share data)

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Revenues	\$ 3,724,593	\$ 2,208,042	\$ 1,467,592
Costs, expenses and other operating			
Cost of sales (exclusive of items shown separately below)	2,338,863	1,579,836	1,378,479
Depreciation, depletion and amortization	133,300	120,327	121,552
Accretion on asset retirement obligations	17,721	21,748	19,887
Change in fair value of coal derivatives and coal trading activities, net	1,274	(2,392)	5,219
Selling, general and administrative expenses	105,355	92,342	82,397
Costs related to proposed joint venture with Peabody Energy	—	—	16,087
Asset impairment and restructuring	—	—	221,380
Gain on property insurance recovery related to Mountain Laurel longwall	—	—	(23,518)
Loss (Gain) on divestitures	—	24,225	(1,505)
Other operating expense (income), net	18,669	4,826	(22,246)
	<u>2,615,182</u>	<u>1,840,912</u>	<u>1,797,732</u>
Income (loss) from operations	1,109,411	367,130	(330,140)
Interest expense, net			
Interest expense	(20,461)	(23,972)	(14,432)
Interest and investment income	7,299	628	3,808
	<u>(13,162)</u>	<u>(23,344)</u>	<u>(10,624)</u>
Income (loss) before nonoperating expenses	1,096,249	343,786	(340,764)
Nonoperating (expenses) income			
Non-service related pension and postretirement benefit costs	(2,841)	(4,339)	(3,884)
Net loss resulting from early retirement of debt	(14,420)	—	—
Reorganization items, net	—	—	26
	<u>(17,261)</u>	<u>(4,339)</u>	<u>(3,858)</u>
Income (loss) before income taxes	1,078,988	339,447	(344,622)
(Benefit from) provision for income taxes	(251,926)	1,874	(7)
Net income (loss)	<u>\$ 1,330,914</u>	<u>\$ 337,573</u>	<u>\$ (344,615)</u>
Net income (loss) per common share			
Basic earnings (loss) per share	<u>\$ 77.67</u>	<u>\$ 22.04</u>	<u>\$ (22.74)</u>
Diluted earnings (loss) per share	<u>\$ 63.88</u>	<u>\$ 19.20</u>	<u>\$ (22.74)</u>
Weighted average shares outstanding			
Basic weighted average shares outstanding	<u>17,136</u>	<u>15,318</u>	<u>15,153</u>
Diluted weighted average shares outstanding	<u>20,985</u>	<u>17,579</u>	<u>15,153</u>

The accompanying notes are an integral part of the consolidated financial statements.

Arch Resources, Inc. and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)
(in thousands)

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Net income (loss)	\$ 1,330,914	\$ 337,573	\$ (344,615)
Derivative instruments			
Comprehensive income (loss) before tax	1,763	2,128	(1,328)
(Benefit from) provision for income taxes	—	—	—
	<u>1,763</u>	<u>2,128</u>	<u>(1,328)</u>
Pension, postretirement and other post-employment benefits			
Comprehensive income (loss) before tax	57,930	47,562	(39,732)
(Benefit from) provision for income taxes	(12,548)	—	—
	<u>45,382</u>	<u>47,562</u>	<u>(39,732)</u>
Available-for-sale securities			
Comprehensive income (loss) before tax	161	169	(330)
(Benefit from) provision for income taxes	(35)	—	—
	<u>126</u>	<u>169</u>	<u>(330)</u>
Total other comprehensive income (loss)	47,271	49,859	(41,390)
Total comprehensive income (loss)	<u>\$ 1,378,185</u>	<u>\$ 387,432</u>	<u>\$ (386,005)</u>

The accompanying notes are an integral part of the consolidated financial statements.

Arch Resources, Inc. and Subsidiaries
Consolidated Balance Sheets
(in thousands, except per share data)

	December 31, 2022	December 31, 2021
Assets		
Current assets		
Cash and cash equivalents	\$ 236,059	\$ 325,194
Short-term investments	36,993	14,463
Restricted cash	1,100	1,101
Trade accounts receivable (net of \$0 allowance at December 31, 2022 and December 31, 2021)	236,999	324,304
Other receivables	18,301	8,271
Inventories	223,015	156,734
Other current assets	71,384	52,804
Total current assets	<u>823,851</u>	<u>882,871</u>
Property, plant and equipment		
Coal lands and mineral rights	406,085	406,822
Plant and equipment	968,420	844,107
Deferred mine development	475,037	402,470
	<u>1,849,542</u>	<u>1,653,399</u>
Less accumulated depreciation, depletion and amortization	<u>(662,514)</u>	<u>(533,356)</u>
Property, plant and equipment, net	1,187,028	1,120,043
Other assets		
Deferred income taxes	209,470	—
Equity investments	17,267	15,403
Fund for asset retirement obligations	135,993	20,000
Other noncurrent assets	59,499	78,843
Total other assets	<u>422,229</u>	<u>114,246</u>
Total assets	<u>\$ 2,433,108</u>	<u>\$ 2,117,160</u>
Liabilities and Stockholders' Equity		
Current Liabilities		
Accounts payable	\$ 211,848	\$ 131,986
Accrued expenses and other current liabilities	157,043	167,304
Current maturities of debt	57,988	223,050
Total current liabilities	<u>426,879</u>	<u>522,340</u>
Long-term debt	116,288	337,623
Asset retirement obligations	235,736	192,672
Accrued pension benefits	1,101	1,300
Accrued postretirement benefits other than pension	49,674	73,565
Accrued workers' compensation	155,756	224,105
Other noncurrent liabilities	82,094	81,689
Total liabilities	<u>1,067,528</u>	<u>1,433,294</u>
Stockholders' equity		
Common stock, \$0.01 par value, authorized 300,000 shares, issued 28,761 and 25,481 shares at December 31, 2022 and December 31, 2021, respectively	288	255
Paid-in capital	724,660	784,356
Retained earnings	1,565,374	712,478
Treasury stock, 11,207 and 10,088 shares at December 31, 2022 and December 31, 2021, respectively, at cost	(986,171)	(827,381)
Accumulated other comprehensive income	61,429	14,158
Total stockholders' equity	<u>1,365,580</u>	<u>683,866</u>
Total liabilities and stockholders' equity	<u>\$ 2,433,108</u>	<u>\$ 2,117,160</u>

The accompanying notes are an integral part of the consolidated financial statements.

Arch Resources, Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Operating activities			
Net income (loss)	\$ 1,330,914	\$ 337,573	\$ (344,615)
Adjustments to reconcile to cash from operating activities:			
Depreciation, depletion and amortization	133,300	120,327	121,552
Accretion on asset retirement obligations	17,721	21,748	19,887
Deferred income taxes	(222,023)	8	14,430
Employee stock-based compensation expense	27,383	20,539	17,435
Amortization relating to financing activities	2,459	6,549	5,599
Gain on property insurance recovery related to Mountain Laurel longwall	—	—	(23,518)
(Gain) loss on disposals and divestitures, net	(997)	23,276	(3,727)
Reclamation work completed	(13,720)	(39,047)	(14,357)
Contribution to fund for asset retirement obligations	(115,993)	(20,000)	—
Non-cash asset impairment and restructuring	—	—	198,007
Changes in:			
Receivables	77,274	(212,950)	63,657
Inventories	(66,281)	(30,726)	(9,126)
Accounts payable, accrued expenses and other current liabilities	84,947	45,547	(46,066)
Income taxes, net	(30,507)	1,820	22,859
Coal derivative assets and liabilities, including margin account	1,274	(3,553)	(1,045)
Asset retirement obligations	(1,193)	(13,697)	(1,787)
Pension, postretirement and other postemployment benefits	(25,537)	4,571	588
Other	10,519	(23,701)	41,333
Cash provided by operating activities	1,209,540	238,284	61,106
Investing activities			
Capital expenditures	(172,728)	(245,440)	(285,821)
Minimum royalty payments	(1,069)	(1,186)	(1,248)
Proceeds from disposals and divestitures	1,972	21,228	1,007
Purchases of short-term investments	(39,731)	—	(120,624)
Proceeds from sales of short-term investments	17,337	87,486	158,708
Investments in and advances to affiliates, net	(9,575)	(3,303)	(1,549)
Proceeds from property insurance recovery related to Mountain Laurel longwall	—	—	23,518
Cash used in investing activities	(203,794)	(141,215)	(226,009)
Financing activities			
Payments on term loan due 2024	(273,788)	(7,895)	(3,000)
Proceeds from equipment financing	—	19,438	53,611
Proceeds from tax exempt bonds	—	44,985	53,090
Payments on convertible debt	(208,130)	—	155,250
Purchase of capped call related to convertible debt	—	—	(17,543)
Net payments on other debt	(11,235)	(11,195)	(15,922)
Debt financing costs	(1,035)	(2,057)	(9,718)
Dividends paid	(456,392)	(3,830)	(8,245)
Purchases of treasury stock	(156,790)	—	—
Payments for taxes related to net share settlement of equity awards	(7,052)	(4,840)	(2,195)
Proceeds from warrants exercised	19,540	1,175	—
Cash (used in) provided by financing activities	(1,094,882)	35,781	205,328
(Decrease) increase in cash and cash equivalents, including restricted cash	(89,136)	132,850	40,425
Cash and cash equivalents, including restricted cash, beginning of period	\$ 326,295	\$ 193,445	\$ 153,020
Cash and cash equivalents, including restricted cash, end of period	\$ 237,159	\$ 326,295	\$ 193,445
SUPPLEMENTAL CASH FLOW INFORMATION			
Cash and cash equivalents	\$ 236,059	\$ 325,194	\$ 187,492
Restricted Cash	1,100	1,101	5,953
Cash paid during the period for interest	\$ 18,820	\$ 31,568	\$ 19,602
Cash refunded during the period for income taxes, net	\$ —	\$ —	\$ 37,535

The accompanying notes are an integral part of the consolidated financial statements.

Arch Resources, Inc. and Subsidiaries
Consolidated Statements of Stockholders' Equity
Three Years Ended December 31, 2022

	Common Stock	Paid-In Capital	Treasury Stock, at Cost	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
	(In thousands, except per share data)					
BALANCE AT DECEMBER 31, 2019	\$ 252	\$ 730,551	\$ (827,381)	\$ 731,425	\$ 5,689	\$ 640,536
Dividends on common shares	—	—	—	(7,904)	—	(7,904)
Employee stock-based compensation	—	17,435	—	—	—	17,435
Issuance of Convertible Debt, net of fees	—	39,237	—	—	—	39,237
Purchase of capped call related to convertible debt	—	(17,543)	—	—	—	(17,543)
Common stock withheld related to net share settlement of equity awards	1	(2,196)	—	—	—	(2,195)
Total comprehensive income (loss)	—	—	—	(344,615)	(41,390)	(386,005)
BALANCE AT DECEMBER 31, 2020	\$ 253	\$ 767,484	\$ (827,381)	\$ 378,906	\$ (35,701)	\$ 283,561
Dividends on common shares	—	—	—	(4,001)	—	(4,001)
Issuance of 157,609 shares of common stock under long-term incentive plan	2	—	—	—	—	2
Employee stock-based compensation	—	20,539	—	—	—	20,539
Common stock withheld related to net share settlement of equity awards	—	(4,842)	—	—	—	(4,842)
Warrants exercised	—	1,175	—	—	—	1,175
Total comprehensive income	—	—	—	337,573	49,859	387,432
BALANCE AT DECEMBER 31, 2021	\$ 255	\$ 784,356	\$ (827,381)	\$ 712,478	\$ 14,158	\$ 683,866
Cumulative effect of accounting change on convertible debt	—	(39,239)	—	6,718	—	(32,521)
Dividends on common shares	—	—	—	(456,459)	—	(456,459)
Dividend equivalents earned on RSU grants	—	826	—	(28,277)	—	(27,451)
Purchase of 1,118,457 shares of common stock under share repurchase program	—	—	(158,790)	—	—	(158,790)
Employee stock-based compensation	—	27,383	—	—	—	27,383
Cash paid for convertible debt repurchased	—	(61,124)	—	—	—	(61,124)
Issuance of 92,314 shares of common stock under long-term incentive plan	1	—	—	—	—	1
Issuance of 2,636,660 shares of common stock for convertible debt exchanged	26	(32)	—	—	—	(6)
Common stock withheld related to net share settlement of equity awards	—	(7,052)	—	—	—	(7,052)
Issuance of 561,561 shares of common stock for warrants exercised	6	19,542	—	—	—	19,548
Total comprehensive income	—	—	—	1,330,914	47,271	1,378,185
BALANCE AT DECEMBER 31, 2022	<u>\$ 288</u>	<u>\$ 724,660</u>	<u>\$ (986,171)</u>	<u>\$ 1,565,374</u>	<u>\$ 61,429</u>	<u>\$ 1,365,580</u>

Arch Resources, Inc. and Subsidiaries
Notes to Consolidated Financial Statements

1. Basis of Presentation

The accompanying consolidated financial statements include the accounts of Arch Resources, Inc. (“Arch Resources”) and its subsidiaries and controlled entities (the “Company”). Unless the context indicates otherwise, the terms “Arch” and the “Company” are used interchangeably in this Annual Report on Form 10-K. The Company’s primary business is the production of metallurgical and thermal coal from underground and surface mines located throughout the United States, for sale to steel producers, utility companies, and industrial accounts both in the United States and around the world. The Company currently operates mining complexes in West Virginia, Wyoming and Colorado. All subsidiaries are wholly-owned. Intercompany transactions and accounts have been eliminated in consolidation.

2. Accounting Policies

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States for financial reporting and U.S. Securities and Exchange Commission regulations.

Accounting Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and revenues and expenses in the accompanying consolidated financial statements and the disclosure of contingent assets and liabilities. Actual results could differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents are stated at cost. Cash equivalents consist of highly-liquid investments with an original maturity of three months or less when purchased and investments in commercial paper which the Company classifies as cash and cash equivalents.

Restricted Cash

Amounts included in restricted cash represent required deposits for a performance bid bond for a potential customer for \$1.1 million as of December 31, 2022 and 2021, respectively.

Accounts Receivable

Accounts receivable are recorded at amounts that are expected to be collected, based on past collection history, the economic environment and specified risks identified in the receivables portfolio.

Inventories

Coal and supplies inventories are valued at the lower of average cost or market. Coal inventory costs include labor, supplies, equipment costs, transportation costs incurred prior to the transfer of title to customers and operating overhead. The costs of removing overburden, called stripping costs, incurred during the production phase of the mine are considered variable production costs and are included in the cost of the coal extracted during the period the stripping costs are incurred.

Investments and Membership Interests in Joint Ventures

Investments and membership interests in joint ventures are accounted for under the equity method of accounting if the Company has the ability to exercise significant influence, but not control, over the entity. The Company's share of the entity's income or loss is reflected in "Other operating expense (income), net" in the Consolidated Statements of Operations. Information about investment activity is provided in Note 10 to the Consolidated Financial Statements, "Equity Method Investments and Membership Interests in Joint Ventures."

Investments in debt securities are classified as available-for-sale and are recorded at their fair values. Unrealized gains and losses on these investments are recorded in other comprehensive income or loss. A decline in the value of an investment that is considered other-than-temporary would be recognized in operating expenses.

Exploration Costs

Costs to acquire permits for exploration activities are capitalized. Drilling and other costs related to locating coal deposits and evaluating the economic viability of such deposits are expensed as incurred.

Prepaid Royalties

Leased mineral rights are often acquired through royalty payments. When royalty payments represent prepayments recoupable against royalties owed on future revenues from the underlying coal, they are recorded as a prepaid asset, with amounts expected to be recouped within one year classified as current. When coal from these leases is sold, the royalties owed are recouped against the prepayment and charged to cost of sales. An impairment charge is recognized for prepaid royalties that are not expected to be recouped.

Property, Plant and Equipment

Plant and Equipment

Plant and equipment were recorded at fair value at emergence during fresh start accounting; subsequent purchases of property, plant and equipment have been recorded at cost. Interest costs incurred during the construction period for major asset additions are capitalized. The Company capitalized \$0 interest costs during the year ended December 31, 2022, and \$18.6 million during the year ended December 31, 2021, respectively. Expenditures that extend the useful lives of existing plant and equipment or increase the productivity of the asset are capitalized. The cost of maintenance and repairs that do not extend the useful life or increase the productivity of the asset is expensed as incurred.

Preparation plants and loadouts are depreciated using the units-of-production method over the estimated recoverable reserves, subject to a minimum level of depreciation. Other plant and equipment are depreciated principally using the straight-line method over the estimated useful lives of the assets, limited by the remaining life of the mine. The useful lives of mining equipment, including longwalls, draglines and shovels, range from 1 to 16 years. The useful lives of buildings and leasehold improvements generally range from 3 to 20 years.

Deferred Mine Development

Costs of developing new mines or significantly expanding the capacity of existing mines are capitalized and amortized using the units-of-production method over the estimated recoverable reserves that are associated with the property being benefited. Costs may include construction permits and licenses; mine design; construction of access roads, shafts, slopes and main entries; and removing overburden to access reserves in a new pit. Additionally, deferred mine development includes the asset cost associated with asset retirement obligations. Coal sales revenue related to incidental production during the development phase is recorded as coal sales revenue with an offset to cost of coal sales based on the estimated cost per ton sold for the mine when the asset is in place for its intended use.

Coal Lands and Mineral Rights

Rights to coal reserves may be acquired directly through governmental or private entities. A significant portion of the Company's coal reserves are controlled through leasing arrangements. Lease agreements are generally long-term in nature (original terms range from 10 to 50 years), and substantially all of the leases contain provisions that allow for automatic extension of the lease term providing certain requirements are met. Leases of mineral reserves and related land leases are exempt from the provisions of the leasing standard.

The net book value of the Company's coal interests was \$239.4 million and \$259.8 million at December 31, 2022 and 2021, respectively. Payments to acquire royalty lease agreements and lease bonus payments are capitalized as a cost of the underlying mineral reserves and depleted over the life of proven and probable reserves. Coal lease rights are depleted using the units-of-production method, and the rights are assumed to have no residual value.

The Company currently does not have any future lease bonus payments.

Depreciation, depletion and amortization

The depreciation, depletion and amortization related to long-lived assets is reflected in the Consolidated Statements of Operations as a separate line item. No depreciation, depletion or amortization are included in any other operating cost categories.

Impairment

If facts and circumstances suggest that the carrying value of a long-lived asset or asset group may not be recoverable, the asset or asset group is reviewed for potential impairment. If this review indicates that the carrying amount of the asset will not be recoverable through projected undiscounted cash flows generated by the asset and its related asset group over its remaining life, then an impairment loss is recognized by reducing the carrying value of the asset to its fair value. The Company may, under certain circumstances, idle mining operations in response to market conditions or other factors. Because an idling is not a permanent closure, it is not considered an automatic indicator of impairment. For information on Impairment, see Note 5 to the Consolidated Financial Statements, "Asset impairment and restructuring."

Deferred Financing Costs

The Company capitalizes costs incurred in connection with new borrowings, the establishment or enhancement of credit facilities and the issuance of debt securities. These costs are amortized as an adjustment to interest expense over the life of the borrowing or term of the credit facility using the effective interest method. Debt issuance costs related to a recognized liability are presented in the balance sheet as a direct reduction from the carrying amount of that liability whereas debt issuance costs related to a credit facility with no balance outstanding are shown as an asset. The unamortized balance of deferred financing costs shown as an asset was \$1.6 million at December 31, 2022, with \$0.6 million classified as current; the unamortized balance of deferred financing costs shown as an asset at December 31, 2021 was \$1.2 million with \$0.7 million classified as current. The current amounts are classified within "Other current assets" and the noncurrent amounts are classified within "Other noncurrent assets." For information on the unamortized balance of deferred financing fees related to outstanding debt, see Note 13 to the Consolidated Financial Statements, "Debt and Financing Arrangements."

Revenue Recognition

Revenues include sales to customers of coal produced at Company operations and coal purchased from third parties. The Company recognizes revenue at the time risk of loss passes to the customer at contracted amounts. Transportation costs are included in cost of sales and amounts billed by the Company to its customers for transportation are included in revenues. Control of the goods may transfer and revenue may be recognized before, during or subsequent to the period in which final average pricing is determined. For all metallurgical coal sales under average pricing contracts where

pricing is not finalized when revenue is recognized, revenue is recorded based on estimated consideration to be received at the date of the sale with reference to metallurgical coal price assessments.

Other Operating Expense (Income), net

Other operating expense (income), net in the accompanying Consolidated Statements of Operations reflects income and expense from sources other than physical coal sales, including: contract settlements; royalties earned from properties leased to third parties; income from equity investments (Note 10, "Equity Method Investments and Membership Interests in Joint Ventures"); non-material gains and losses from divestitures and dispositions of assets; and realized gains and losses on derivatives that do not qualify for hedge accounting and are not held for trading purposes (Note 11, "Derivatives"); and land management expenses.

Asset Retirement Obligations

The Company's legal obligations associated with the retirement of long-lived assets are recognized at fair value at the time the obligations are incurred. Accretion expense is recognized through the expected settlement date of the obligation. Obligations are incurred at the time development of a mine commences for underground and surface mines or construction begins for support facilities, refuse areas and slurry ponds. The obligation's fair value is determined using a discounted cash flow technique and is based upon permit requirements and various estimates and assumptions that would be used by market participants, including estimates of disturbed acreage, reclamation costs and assumptions regarding equipment productivity. Upon initial recognition of a liability, a corresponding amount is capitalized as a component of the carrying value of the related long-lived asset.

The Company reviews its asset retirement obligation at least annually and makes necessary adjustments for permit changes as granted by state authorities and for revisions of estimates of the amount and timing of costs. For ongoing operations, adjustments to the liability result in an adjustment to the corresponding asset. For idle operations, adjustments to the liability are recognized as income or expense in the period the adjustment is recorded. Any difference between the recorded obligation and the actual cost of reclamation is recorded in profit or loss in the period the obligation is settled. See additional discussion in Note 15 to the Consolidated Financial Statements, "Asset Retirement Obligations."

Loss Contingencies

The Company accrues for cost related to contingencies when a loss is probable and the amount is reasonably determinable. Disclosure of contingencies is included in the financial statements when it is at least reasonably possible that a material loss or an additional material loss in excess of amounts already accrued may be incurred. The amount accrued represents the Company's best estimate of the loss, or, if no best estimate within a range of outcomes exists, the minimum amount in the range.

Derivative Instruments

The Company generally utilizes derivative instruments to manage exposures to commodity prices and interest rate risk on long-term debt. Derivative financial instruments are recognized on the balance sheet at fair value. Certain coal contracts may meet the definition of a derivative instrument, but because they provide for the physical purchase or sale of coal in quantities expected to be used or sold by the Company over a reasonable period in the normal course of business, they are not recognized on the balance sheet.

See Note 11 to the Consolidated Financial Statements, "Derivatives" for further disclosures related to the Company's derivative instruments.

Fair Value

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly hypothetical transaction between market participants at a given measurement date. Valuation techniques used must maximize the use of observable inputs and minimize the use of unobservable inputs. See Note 16 to the Consolidated Financial Statements, “Fair Value Measurements” for further disclosures related to the Company’s recurring fair value estimates.

Income Taxes

Deferred income taxes are provided for temporary differences arising from differences between the financial statement and tax basis of assets and liabilities existing at each balance sheet date using enacted tax rates anticipated to be in effect when the related taxes are expected to be paid or recovered. A valuation allowance is established if it is more likely than not that a deferred tax asset will not be realized. Management reassesses the ability to realize its deferred tax assets annually in the fourth quarter or when circumstances indicate that the ability to realize deferred tax assets has changed. In determining the need for a valuation allowance, the Company considers projected realization of tax benefits based on expected levels of future taxable income, available tax planning strategies and the reversal of temporary differences.

Benefits from tax positions that are uncertain are not recognized unless the Company concludes that it is more likely than not that the position would be sustained in a dispute with taxing authorities, should the dispute be taken to the court of last resort. The Company would measure any such benefit at the largest amount of benefit that is greater than 50% likely of being realized upon settlement with taxing authorities.

See Note 14 to the Consolidated Financial Statements, “Taxes” for further disclosures about income taxes.

Benefit Plans

The Company has non-contributory defined benefit pension plans covering most of its salaried and hourly employees. On January 1, 2015 the Company’s cash balance and excess pension plans were amended to freeze new service credits for any new or active employees. The Company also currently provides certain postretirement medical and life insurance coverage for eligible employees. The cost of providing these benefits is determined on an actuarial basis and accrued over the employees’ period of active service.

The Company recognizes the overfunded or underfunded status of these plans as determined on an actuarial basis on the balance sheet and the changes in the funded status are recognized in other comprehensive income. The Company amortizes actuarial gains and losses over the remaining service attribution periods of the employees using the corridor method. See Note 20 to the Consolidated Financial Statements, “Employee Benefit Plans” for additional disclosures relating to these obligations.

Stock-Based Compensation

The compensation cost of all stock-based awards is determined based on the grant-date fair value of the award, and is recognized over the requisite service period. The grant-date fair value of restricted stock awards with a market condition is determined using a Monte Carlo simulation. Compensation cost for an award with performance conditions is accrued if it is probable that the conditions will be met. The Company accounts for forfeitures as they occur. See further discussion in Note 18 to the Consolidated Financial Statements, “Stock-Based Compensation and Other Incentive Plans.”

Recently Adopted Accounting Guidance

In August 2020, the FASB issued ASU 2020-06, Debt—Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging—Contracts in Entity’s Own Equity (Subtopic 815-40)—Accounting for Convertible Instruments and Contracts in an Entity’s Own Equity. ASU 2020-06 reduces the number of accounting models for

convertible debt instruments. Additionally, ASU 2020-06 amends the diluted earnings per share calculation for convertible instruments by requiring the use of the if-converted method. The if-converted method assumes the conversion of convertible instruments occurs at the beginning of the reporting period and diluted weighted average shares outstanding includes the common shares issuable upon conversion of the convertible instruments. ASU 2020-06 is effective for public business entities, for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years. The Company adopted ASU 2020-06 on January 1, 2022 under the modified retrospective approach.

Upon issuance of the Company's \$155.3 million principal amount of 5.25% convertible senior notes due 2025 (the "Convertible Notes" or "Convertible Debt") in November 2020, the Company bifurcated the debt and equity components of the Convertible Notes to long-term debt and additional paid-in capital in its consolidated balance sheet. The amount recorded to additional paid-in capital represented a debt discount that was being amortized to interest expense over the life of the Convertible Notes. As part of the adoption of ASU 2020-06, the Company (i) reversed the equity component recorded to additional paid-in capital of \$39.2 million, (ii) recorded a cumulative effect of the adoption of ASU 2020-06 of \$6.7 million to retained earnings, representing a reversal of the debt discount that was amortized to interest expense, and (iii) an offsetting increase in debt. See Note 13, "Debt and Financing Arrangements" for additional information.

Additionally, upon adoption of ASU 2020-06, the treasury stock method utilized by the Company to calculate earnings per share through December 31, 2021 is no longer permitted. Accordingly, the Company has transitioned to the if-converted method utilizing the modified retrospective approach. For the year ended December 31, 2022, under the previous treasury stock method, the diluted earnings per share would have been approximately \$65.28. As a result of the adoption of ASU 2020-06, diluted earnings per share decreased by \$1.40 for the year ended December 31, 2022.

Recently Adopted Accounting Guidance Not Yet Effective

There are no new pronouncements issued but not yet effective expected to have a material impact on the Company's financial position, results of operations, or liquidity.

3. Accumulated Other Comprehensive Income (Loss)

The following items are included in accumulated other comprehensive income:

	Derivative Instruments	Pension, Postretirement and Other Post- Employment Benefits	Available-for- Sale Securities	Accumulated Other Comprehensive Income (loss)
	(In thousands)			
January 1, 2021	\$ (3,891)	\$ (31,459)	\$ (351)	\$ (35,701)
Unrealized gains (losses)	200	47,159	191	47,550
Amounts reclassified from accumulated other comprehensive income (loss)	1,928	403	(22)	2,309
Balances at December 31, 2021	\$ (1,763)	\$ 16,103	\$ (182)	\$ 14,158
Unrealized gains (losses)	223	61,041	(21)	61,243
Amounts reclassified from accumulated other comprehensive income (loss)	1,540	(3,111)	182	(1,389)
Tax effect	—	(12,548)	(35)	(12,583)
Balances at December 31, 2022	<u>\$ —</u>	<u>\$ 61,485</u>	<u>\$ (56)</u>	<u>\$ 61,429</u>

The following amounts were reclassified out of accumulated other comprehensive income (loss) during the respective periods:

Details About AOCI Components	December 31, 2022	December 31, 2021	Line Item in the Consolidated Statements of Operations
Interest rate hedges	\$ (112)	\$ (1,928)	Interest expense
Interest rate hedges (ineffective portion)	(1,428)	—	Net loss resulting from early retirement of debt
	—	—	(Benefit from) provision for income taxes
	<u>\$ (1,540)</u>	<u>\$ (1,928)</u>	Net of tax
Pension, postretirement and other post-employment benefits			
Amortization of actuarial gains (losses), net ¹	\$ 2,193	\$ (2,361)	Non-service related pension and postretirement benefit credits (costs)
Amortization of prior service credits	147	190	Non-service related pension and postretirement benefit credits
Pension settlement	771	1,768	Non-service related pension and postretirement benefit credits
	\$ 3,111	\$ (403)	Total before tax
	(674)	—	(Benefit from) provision for income taxes
	<u>\$ 2,437</u>	<u>\$ (403)</u>	Net of tax
Available-for-sale securities ²	\$ (182)	\$ 22	Interest and investment income
	39	—	(Benefit from) provision for income taxes
	<u>\$ (143)</u>	<u>\$ 22</u>	Net of tax

¹ Production-related benefits and workers' compensation costs are included in costs of sales.

² The gains and losses on sales of available-for-sale-securities are determined on a specific identification basis.

4. Divestitures

In November 2021, the Company sold its 49.5% ownership in Knight Hawk Holdings, LLC (Knight Hawk™) to CBR, LLC. The Company received total proceeds of \$38 million which consist of \$20 million received in the fourth quarter of 2021 and a three year note receivable for \$18 million with monthly payments of \$0.5 million. The sale resulted in a non-cash loss of \$24.2 million that was recorded in "Loss (Gain) on divestitures" as of December 31, 2021. See Note 10 to the Consolidated Financial Statements, "Equity Method Investments and Membership Interests in Joint Venture" for further disclosures about the divestiture.

In December 2020, the Company sold its Viper mine in the Illinois basin to Knight Hawk Holdings, LLC in exchange for an additional 1.5% ownership interest in Knight Hawk. The sale resulted in an increase in the Company's ownership to 49.5% and a gain of \$0.1 million was recorded which is reflected within the line item, "Loss (Gain) on divestitures," on the Consolidated Statements of Operations. See Note 10 to the Consolidated Financial Statements, "Equity Method Investments and Membership Interests in Joint Venture" for further disclosures about the divestiture.

During the second quarter of 2020, various Dal-Tex and Briar Branch properties in West Virginia were sold to Condor Holdings, LLC. No consideration was received for the sale and a gain of \$1.4 million was recorded representing the net liabilities sold, and is reflected within the line item, "Loss (Gain) on divestitures," on the Consolidated Statements of Operations.

5. Asset impairment and restructuring

During the third quarter of 2020, the Company determined that indicators of impairment existed with respect to certain of its thermal long-lived assets. As a result, the Company recorded impairment charges of \$51.8 million related to the Coal Creek Mine, \$33.5 million related to the Viper Mine, \$41.6 million related to the West Elk Mine, and \$36.2 million related to the Company's equity method investment in Knight Hawk Holdings, LLC.

In the fourth quarter of 2020, the Company recorded additional charges of \$32.8 million related to the Company's Coal Creek Mine due to accelerating the mine closing date and the associated reclamation work to be performed and \$10.0 million related to a land lease obligation from a prior equity investment.

The Company recorded \$13.4 million of employee severance expense related to a voluntary separation plan during the year ended December 31, 2020. During the first and second quarters of 2020, 254 employees from the Company's thermal operations and the corporate staff accepted the voluntary separation package. No amounts related to the employee severance expense were incurred for the years ended December 31, 2022 and 2021. As of December 31, 2022 and 2021, there were no indicators of impairment.

6. Joint Venture with Peabody Energy

The Company incurred expenses of \$16.1 million during the year ended December 31, 2020, associated with the regulatory approval process related to the proposed joint venture with Peabody that was terminated jointly by the parties due to the Federal Trade Commission blocking the joint venture during the third quarter of 2020. No amounts related to the joint venture were incurred for the years ended December 31, 2022 and 2021.

7. Gain on Property Insurance Recovery Related to Mountain Laurel Longwall

The Company recorded a \$23.5 million gain related to a property insurance recovery on the longwall shields at its Mountain Laurel operation during the year ended December 31, 2020. As a result of geologic conditions in the final longwall panel, Mountain Laurel was unable to recover 123 of the longwall system's 176 hydraulic shields. No amounts related to the property insurance recovery were incurred for the years ended December 31, 2022 and 2021.

8. Inventories

Inventories consist of the following:

	December 31, 2022	December 31, 2021
	(In thousands)	
Coal	\$ 96,954	\$ 75,653
Repair parts and supplies	126,061	81,081
	<u>\$ 223,015</u>	<u>\$ 156,734</u>

The repair parts and supplies are stated net of an allowance for slow-moving and obsolete inventories of \$2.4 million at December 31, 2022 and \$2.3 million at December 31, 2021.

9. Investments in Available-for-Sale Securities

The Company has invested in marketable debt securities, primarily highly liquid U.S Treasury securities and investment grade corporate bonds. These investments are held in the custody of a major financial institution. These securities are classified as available-for-sale securities and, accordingly, the unrealized gains and losses are recorded through other comprehensive income.

The Company's investments in available-for-sale marketable securities are as follows:

December 31, 2022					
	Cost Basis	Gross Unrealized		Allowance for - Credit Losses	Fair Value
		Gains	Losses		
(In thousands)					
Available-for-sale:					
U.S. government and agency securities	\$ 28,325	\$ 1	\$ (25)	\$ —	\$ 28,301
Corporate notes and bonds	8,689	20	(17)	—	8,692
Total Investments	<u>\$ 37,014</u>	<u>\$ 21</u>	<u>\$ (42)</u>	<u>\$ —</u>	<u>\$ 36,993</u>

December 31, 2021					
	Cost Basis	Gross Unrealized		Allowance for - Credit Losses	Fair Value
		Gains	Losses		
(In thousands)					
Available-for-sale:					
U.S. government and agency securities	\$ 6,074	\$ —	\$ (71)	\$ —	\$ 6,003
Corporate notes and bonds	8,571	—	(111)	—	8,460
Total Investments	<u>\$ 14,645</u>	<u>\$ —</u>	<u>\$ (182)</u>	<u>\$ —</u>	<u>\$ 14,463</u>

The aggregate fair value of investments with unrealized losses that had been owned for less than a year was \$22.6 million and \$0.0 million at December 31, 2022 and 2021, respectively. The aggregate fair value of investments with unrealized losses that have been owned for over a year was \$0.0 million and \$14.5 million at December 31, 2022 and 2021, respectively.

The debt securities outstanding at December 31, 2022 have maturity dates ranging through the first quarter of 2024. The Company classifies its investments as current based on the nature of the investments and their availability to provide cash for use in current operations, if needed.

10. Equity Method Investments and Membership Interests in Joint Ventures

The Company accounts for its investments and membership interests in joint ventures under the equity method of accounting if the Company has the ability to exercise significant influence, but not control, over the entity. Equity method investments are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of the investments may not be recoverable.

Below are the equity method investments reflected in the consolidated balance sheets:

(In thousands)	Knight Hawk	DTA	Total
December 31, 2020	\$ 56,085	\$ 15,698	\$ 71,783
Advances to (distributions from) affiliates, net	(7,886)	3,303	(4,583)
Equity in comprehensive income (loss)	14,026	(3,598)	10,428
Sale of Equity investment	(62,225)	—	(62,225)
December 31, 2021	\$ —	\$ 15,403	\$ 15,403
Advances to affiliates, net	—	9,575	9,575
Equity in comprehensive loss	—	(7,711)	(7,711)
December 31, 2022	\$ —	\$ 17,267	\$ 17,267

In November 2021, the Company sold its 49.5% ownership in Knight Hawk Holdings, LLC (Knight Hawk”) to CBR, LLC. The Company received total proceeds of \$38 million which consist of \$20 million in the fourth quarter of 2021 and a three year note receivable for \$18 million with monthly payments of \$0.5 million. The sale resulted in a non-cash loss of \$24.2 million that was recorded in “Loss (Gain) on divestitures” as of December 31, 2021.

The Company holds a 35% general partnership interest in Dominion Terminal Associates LLP (“DTA”), which is accounted for under the equity method. DTA operates a ground storage-to-vessel coal transloading facility in Newport News, Virginia for use by the partners. Under the terms of a throughput and handling agreement with DTA, each partner is charged its share of cash operating and debt-service costs in exchange for the right to use the facility’s loading capacity and is required to make periodic cash advances to DTA to fund such costs.

The Company is not required to make any future contingent payments related to development financing for any of its equity investees.

11. Derivatives

Interest rate risk management

The Company has historically used interest rate swaps to reduce the variability of cash outflows associated with interest payments on its variable rate term loan. These swaps were designated as cash flow hedges at inception. For additional information on these arrangements, see Note 13 to the Consolidated Financial Statements, “Debt and Financing Arrangements.”

Diesel fuel price risk management

The Company is exposed to price risk with respect to diesel fuel purchased for use in its operations. The Company anticipates purchasing approximately 40 to 45 million gallons of diesel fuel for use in its operations during 2023. To protect the Company’s cash flows from increases in the price of diesel fuel, the Company has purchased heating oil call options. At December 31, 2022, the Company had protected the price of expected diesel fuel purchases for 2023 with approximately 15 million gallons of heating oil call options with an average strike price of \$4.07 per gallon. These positions are not designated as hedges for accounting purposes, and therefore, changes in the fair value are recorded immediately to earnings.

Coal risk management positions

The Company may sell or purchase forward contracts, swaps and options in the over-the-counter coal market in order to manage its exposure to coal prices. The Company has exposure to the risk of fluctuating coal prices related to forecasted sales or purchases of coal or to the risk of changes in the fair value of a fixed price physical sales contract. Certain derivative contracts may be designated as hedges of these risks.

At December 31, 2022, the Company held derivatives for risk management purposes that are expected to settle in the following years:

(Tons in thousands)	2023
Coal sales	39
Coal purchases	—

Tabular derivatives disclosures

The Company has master netting agreements with all of its counterparties which allow for the settlement of contracts in an asset position with contracts in a liability position in the event of default or termination. Such netting arrangements reduce the Company's credit exposure related to these counterparties. For classification purposes, the Company records the net fair value of all the positions with a given counterparty as a net asset or liability in the Consolidated Balance Sheets. The amounts shown in the table below represent the fair value position of individual contracts, and not the net position presented in the accompanying Consolidated Balance Sheets.

The fair value and location of derivatives reflected in the accompanying Consolidated Balance Sheets are as follows:

Fair Value of Derivatives (In thousands)	December 31, 2022		December 31, 2021			
	Asset Derivative	Liability Derivative	Asset Derivative	Liability Derivative		
Derivatives Not Designated as Hedging Instruments						
Heating oil -- diesel purchases	1,300	—	1,219	—		
Coal -- risk management	1,407	—	4,885	(2,203)		
Total	\$ 2,707	\$ —	\$ 6,104	\$ (2,203)		
Total derivatives	\$ 2,707	\$ —	\$ 6,104	\$ (2,203)		
Effect of counterparty netting	—	—	(1,890)	1,890		
Net derivatives as classified in the balance sheets	\$ 2,707	\$ —	\$ 2,707	\$ 4,214	\$ (313)	\$ 3,901

Fair Value of Derivatives (In thousands)		December 31, 2022	December 31, 2021
Net derivatives as reflected on the balance sheets (in thousands)			
Heating Oil and coal	Other current assets	\$ 2,707	\$ 4,214
	Accrued expenses and other current liabilities	—	(313)
Coal		\$ 2,707	\$ 3,901

At December 31, 2022, the current open derivative positions are non-margined. The Company had a current asset representing cash collateral posted to a margin account for derivative positions primarily related to coal derivatives of \$2.8 million at December 31, 2021. This amount is not included with the derivatives presented in the table above and is included in "other current assets" in the accompanying Consolidated Balance Sheets.

The effects of derivatives on measures of financial performance are as follows:

Derivatives used in Cash Flow Hedging Relationships (in thousands)

For the noted periods,

	Gain (Loss) Recognized in Other Comprehensive Income (Effective Portion)		
	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Coal sales (1)	\$ —	\$ —	\$ 500
Coal purchases (2)	—	—	(496)
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 4</u>

	Gains (Losses) Reclassified from Other Comprehensive Income into Income (Effective Portion)		
	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Coal sales	\$ —	\$ —	\$ (1,850)
Coal purchases	—	—	1,458
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ (392)</u>

No ineffectiveness or amounts excluded from effectiveness testing relating to the Company's cash flow hedging relationships were recognized in the results of operations in the respective periods.

Derivatives Not Designated as Hedging Instruments (in thousands)

For the noted periods,

	Gain (Loss) Recognized		
	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Coal trading— realized and unrealized (3)	\$ —	\$ —	\$ 222
Coal risk management— unrealized (3)	(1,274)	2,392	(5,517)
Natural gas trading — realized and unrealized (3)	—	—	76
Change in fair value of coal derivatives and coal trading activities, net total	<u>\$ (1,274)</u>	<u>\$ 2,392</u>	<u>\$ (5,219)</u>
Coal risk management — realized (4)	\$ (42,068)	\$ (27,464)	\$ 9,258
Heating oil — diesel purchases (4)	\$ 8,309	\$ —	\$ (558)

Location in Consolidated Statements of Operations:

- (1) — Revenues
- (2) — Cost of sales
- (3) — Change in fair value of coal derivatives and coal trading activities, net
- (4) — Other operating income, net

12. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consist of the following:

	December 31, 2022	December 31, 2021
	(In thousands)	
Payroll and employee benefits	\$ 61,836	\$ 55,898
Taxes other than income taxes	53,105	61,582
Interest	2,511	3,439
Workers' compensation	17,584	14,202
Asset retirement obligations	8,632	21,781
Coal derivatives	—	313
Other	13,375	10,089
	<u>\$ 157,043</u>	<u>\$ 167,304</u>

13. Debt and Financing Arrangements

	December 31, 2022	December 31, 2021
	(In thousands)	
Term loan due 2024 (\$6.5 million face value)	\$ 6,502	\$ 280,353
Tax Exempt Bonds (\$98.1 million face value)	98,075	98,075
Convertible Debt (\$13.2 million face value)	13,156	121,617
Other	59,472	70,836
Debt issuance costs	(2,929)	(10,208)
	174,276	560,673
Less: current maturities of debt	57,988	223,050
Long-term debt	<u>\$ 116,288</u>	<u>\$ 337,623</u>

Term Loan Facility

In 2017, the Company entered into a senior secured term loan credit agreement in an aggregate principal amount of \$300 million (the "Term Loan Debt Facility") with Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent, and the other financial institutions from time to time party thereto (collectively, the "Lenders"). The Term Loan Debt Facility was issued at 99.50% of the face amount and will mature on March 7, 2024. The term loans provided under the Term Loan Debt Facility (the "Term Loans") are subject to quarterly principal amortization payments in an amount equal to \$0.8 million. The interest rate on the Term Loan Debt Facility is, at the option of Arch Resources, either (i) LIBOR plus an applicable margin of 2.75%, subject to a 1.00% LIBOR floor, or (ii) a base rate plus an applicable margin of 1.75%.

The Term Loan Debt Facility is guaranteed by all existing and future wholly owned domestic subsidiaries of the Company (collectively, the "Subsidiary Guarantors" and, together with Arch Resources, the "Loan Parties"), subject to customary exceptions, and is secured by first priority security interests on substantially all assets of the Loan Parties, including 100% of the voting equity interests of directly owned domestic subsidiaries and 65% of the voting equity interests of directly owned foreign subsidiaries, subject to customary exceptions.

The Company has the right to prepay Term Loans at any time and from time to time in whole or in part without premium or penalty, upon written notice, except that any prepayment of Term Loans that bear interest at the LIBOR Rate other than at the end of the applicable interest periods therefor shall be made with reimbursement for any funding losses and redeployment costs of the Lenders resulting therefrom.

The Term Loan Debt Facility is subject to certain usual and customary mandatory prepayment events, including 100% of net cash proceeds of (i) debt issuances (other than debt permitted to be incurred under the terms of the New

Term Loan Debt Facility) and (ii) non-ordinary course asset sales or dispositions, subject to customary thresholds, exceptions and reinvestment rights.

The Term Loan Debt Facility contains customary affirmative covenants and representations.

The Term Loan Debt Facility also contains customary negative covenants, which, among other things, and subject to certain exceptions, include restrictions on (i) indebtedness, (ii) liens, (iii) liquidations, mergers, consolidations and acquisitions, (iv) disposition of assets or subsidiaries, (v) affiliate transactions, (vi) creation or ownership of certain subsidiaries, partnerships and joint ventures, (vii) continuation of or change in business, (viii) restricted payments, (ix) prepayment of subordinated and junior lien indebtedness, (x) restrictions in agreements on dividends, intercompany loans and granting liens on the collateral, (xi) loans and investments, (xii) sale and leaseback transactions, (xiii) changes in organizational documents and fiscal year and (xiv) transactions with respect to bonding subsidiaries. The Term Loan Debt Facility does not contain any financial maintenance covenant.

The Term Loan Debt Facility contains customary events of default, subject to customary thresholds and exceptions, including, among other things, (i) nonpayment of principal and nonpayment of interest and fees, (ii) a material inaccuracy of a representation or warranty at the time made, (iii) a failure to comply with any covenant, subject to customary grace periods in the case of certain affirmative covenants, (iv) cross-events of default to indebtedness of at least \$50 million, (v) cross-events of default to surety, reclamation or similar bonds securing obligations with an aggregate face amount of at least \$50 million, (vi) uninsured judgments in excess of \$50 million, (vii) any loan document shall cease to be a legal, valid and binding agreement, (viii) uninsured losses or proceedings against assets with a value in excess of \$50 million, (ix) certain ERISA events, (x) a change of control or (xi) bankruptcy or insolvency proceedings relating to the Company or any material subsidiary of the Company.

During the year ended December 31, 2022, the Company repaid \$273.8 million of the Term Loan leaving a remaining balance of \$6.5 million. The remaining balance of \$6.5 million was left as certain terms and conditions governing the Term Loan are incorporated into the Company's outstanding indebtedness. As a result of the repayment, the Company recorded \$4.1 million in "net loss resulting from early retirement of debt" during the nine months ended December 31, 2022 in the accompanying Consolidated Statements of Operations relating to deferred financing fees, original issue discount, and the ineffective portion of an interest rate swap designated as a cashflow hedge, partially offset by gains on repurchases of the Term Loans.

Accounts Receivable Securitization Facility

On August 3, 2022, the Company amended and extended its existing trade accounts receivable securitization facility provided to Arch Receivable Company, LLC, a special-purpose entity that is a wholly owned subsidiary of Arch Resources ("Arch Receivable") (the "Securitization Facility"), which supports the issuance of letters of credit and requests for cash advances. The amendment to the Securitization Facility increased the size of the facility from \$110 million to \$150 million of borrowing capacity and extended the maturity date to August 1, 2025.

Under the Securitization Facility, Arch Receivable, Arch Resources and certain of Arch Resources' subsidiaries party to the Securitization Facility have granted to the administrator of the Securitization Facility a first priority security interest in eligible trade accounts receivable generated by such parties from the sale of coal and all proceeds thereof. As of December 31, 2022, letters of credit totaling \$48.6 million were outstanding under the facility with \$101.4 million available for borrowings.

Inventory-Based Revolving Credit Facility

On August 3, 2022, Arch Resources amended the senior secured inventory-based revolving credit facility in an aggregate principal amount of \$50 million (the "Inventory Facility") with Regions Bank ("Regions") as administrative agent and collateral agent, as lender and swingline lender and as letter of credit issuer. Availability under the Inventory Facility is subject to a borrowing base consisting of (i) 85% of the net orderly liquidation value of eligible coal inventory, plus (ii) the lesser of (x) 85% of the net orderly liquidation value of eligible parts and supplies inventory and

(y) 35% of the amount determined pursuant to clause (i), plus (iii) 100% of Arch Resources' Eligible Cash (defined in the Inventory Facility), subject to reduction for reserves imposed by Regions.

The amendment of the Inventory Facility extended the maturity of the facility to August 3, 2025; maintained the minimum Liquidity requirement of \$100 million and included provisions that reduce the advance rates for coal inventory and parts and supplies, depending on "liquidity."

Revolving loan borrowings under the Inventory Facility bear interest at a per annum rate equal to, at the option of Arch Resources, either the base rate or the London interbank offered rate plus, in each case, a margin ranging from 2.50% to 3.50% (in the case of LIBOR loans) subject to a 0.75% LIBOR floor, and 1.50% to 2.50% (in the case of base rate loans) determined using a Liquidity-based grid. Letters of credit under the Inventory Facility are subject to a fee in an amount equal to the applicable margin for LIBOR loans, plus customary fronting and issuance fees.

All existing and future direct and indirect domestic subsidiaries of Arch Resources, subject to customary exceptions, will either constitute co-borrowers under or guarantors of the Inventory Facility (collectively with Arch Resources, the "Loan Parties"). The Inventory Facility is secured by first priority security interests in the ABL Priority Collateral (defined in the Inventory Facility) of the Loan Parties and second priority security interests in substantially all other assets of the Loan Parties, subject to customary exceptions (including an exception for the collateral that secures the Securitization Facility).

Arch Resources has the right to prepay borrowings under the Inventory Facility at any time and from time to time in whole or in part without premium or penalty, upon written notice, except that any prepayment of such borrowings that bear interest at the LIBOR rate other than at the end of the applicable interest periods therefore shall be made with reimbursement for any funding losses and redeployment costs of the Lender resulting therefrom.

The Inventory Facility is subject to certain usual and customary mandatory prepayment events, including non-ordinary course asset sales or dispositions, subject to customary thresholds, exceptions (including exceptions for required prepayments under Arch Resources' term loan facility) and reinvestment rights.

The Inventory Facility contains certain customary affirmative and negative covenants; events of default, subject to customary thresholds and exceptions; and representations, including certain cash management and reporting requirements that are customary for asset-based credit facilities. The Inventory Facility also includes a requirement to maintain Liquidity equal to or exceeding \$100 million at all times. As of December 31, 2022, letters of credit totaling \$26.2 million were outstanding under the facility with \$23.8 million available for borrowings.

Equipment Financing

On March 4, 2020, the Company entered into an equipment financing arrangement accounted for as debt. The Company received \$53.6 million in exchange for conveying an interest in certain equipment in operation at its Leer Mine and entered into a master lease arrangement for that equipment. The financing arrangement contains customary terms and events of default and provides for 48 monthly payments with an average interest rate of 6.34% maturing on March 4, 2024. Upon maturity, all interests in the subject equipment will revert back to the Company.

On July 29, 2021, the Company entered into an additional equipment financing arrangement accounted for as debt. The Company received \$23.5 million in exchange for conveying an interest in certain equipment in operation at its Powder River Basin operations and entered into a master lease arrangement for that equipment. The financing arrangement contains customary terms and events of default and provides for 42 monthly payments with an average implied interest rate of 7.35% maturing on February 1, 2025. Upon maturity, the Company will have the option to purchase the equipment.

Tax Exempt Bonds

On July 2, 2020, the West Virginia Economic Development Authority (the "Issuer") issued \$53.1 million aggregate principal amount of Solid Waste Disposal Facility Revenue Bonds (Arch Resources Project), Series 2020 (the "2020 Tax

Exempt Bonds”) pursuant to an Indenture of Trust dated as of June 1, 2020 (as amended to date, the “Indenture of Trust”) between the Issuer and Citibank, N.A., as trustee (the “Trustee”). On March 4, 2021, the Issuer issued an additional \$45.0 million of Series 2021 Tax Exempt Bonds (the “2021 Tax Exempt Bonds” and together with the 2020 Tax Exempt Bonds, the “Tax Exempt Bonds”). The proceeds of the Tax Exempt Bonds were loaned to the Company pursuant to a Loan Agreement dated as of June 1, as supplemented by a First Amendment to Loan Agreement dated as of March 1, 2021 (collectively, the “Loan Agreement”), each between the Issuer and the Company. The Tax Exempt Bonds are payable solely from payments to be made by the Company under the Loan Agreement as evidenced by a Note from the Company to the Trustee. The proceeds of the Tax Exempt Bonds were used to finance certain costs of the acquisition, construction, reconstruction, and equipping of solid waste disposal facilities at the Company’s Leer South development, and for capitalized interest and certain costs related to issuance of the Tax Exempt Bonds.

The Tax Exempt Bonds bear interest payable each January 1 and July 1, and have a final maturity of July 1, 2045; however, the Tax Exempt Bonds are subject to mandatory tender on July 1, 2025 at a purchase price equal to 100% of the principal amount of the Tax Exempt Bonds, plus accrued interest to July 1, 2025. The 2020 Tax Exempt Bonds and 2021 Tax Exempt Bonds bear interest of 5% and 4.125%, respectively.

The Tax Exempt Bonds are subject to redemption (i) in whole or in part at any time on or after January 1, 2025 at the option of the Issuer, upon the Company’s direction at a redemption price of par, plus interest accrued to the redemption date; and (ii) at par plus interest accrued to the redemption date from certain excess Tax Exempt Bonds proceeds as further described in the Indenture of Trust.

The Company’s obligations under the Loan Agreement are (i) except as otherwise described below, secured by first priority liens on and security interests in substantially all of the Company’s and Subsidiary Guarantors’ real property and other assets, subject to certain customary exceptions and permitted liens, and in any event excluding accounts receivable and inventory; and (ii) jointly and severally guaranteed by the Subsidiary Guarantors, subject to customary exceptions.

The collateral securing the Company’s obligations under the Loan Agreement is substantially the same as the collateral securing the obligations under the Term Loan Debt Facility other than with respect to variances in certain real property collateral. The real property securing the Company’s obligations under the Loan Agreement includes a subset of the real property collateral securing the obligations under the Term Loan Debt Facility and includes only mortgages on substantially all of the Company’s revenue generating real property and assets.

The Loan Agreement contains certain affirmative covenants and representations, including but not limited to: (i) maintenance of a rating on the Tax Exempt Bonds; (ii) maintenance of proper books of records and accounts; (iii) agreement to add additional guarantors to guarantee the obligations under the Loan Agreement in certain circumstances; (iv) procurement of customary insurance; and (v) preservation of legal existence and certain rights, franchises, licenses and permits. The Loan Agreement also contains certain customary negative covenants, which, among other things, and subject to certain exceptions, include restrictions on (i) release of collateral securing the Company’s obligations under the Loan Agreement; (ii) mergers and consolidations and disposition of assets, and (iii) restrictions on actions that may jeopardize the tax-exempt status of the Tax Exempt Bonds.

The Loan Agreement contains customary events of default, subject to customary thresholds and exceptions, including, among other things: (i) nonpayment of principal, purchase price, interest and other fees (subject to certain cure periods); (ii) bankruptcy or insolvency proceedings relating to us; (iii) material inaccuracy of a representation or warranty at the time made; (iv) cross-events of default to indebtedness of at least \$50 million; and (v) cross defaults to the Indenture of Trust, the guaranty related to the Tax Exempt Bonds or any related security documents.

Convertible Debt

On November 3, 2020, the Company issued \$155.3 million in aggregate principal amount of 5.25% convertible senior notes due 2025 (“Convertible Notes” or “Convertible Debt”). The net proceeds from the issuance of the Convertible Notes, after deducting offering related costs of \$5.1 million and cost of a “Capped Call Transaction” as defined below of \$17.5 million, were approximately \$132.7 million. The Convertible Notes bear interest at the annual

rate of 5.25%, payable semiannually in arrears on May 15 and November 15 of each year, beginning on May 15, 2021, and will mature on November 15, 2025, unless earlier converted or repurchased by the Company.

The Convertible Notes are convertible into cash, shares of the Company's common stock or a combination thereof, at the Company's election, at an initial conversion rate of 26.7917 shares of common stock per \$1,000 principal amount of Convertible Notes, which is equivalent to an initial conversion price of approximately \$37.325 per share, subject to adjustment pursuant to the terms of the indenture governing the Convertible Notes (the "Indenture").

The conversion rate of the Convertible Notes may be adjusted in certain circumstances, including in connection with a conversion of the Convertible Notes made following certain fundamental changes and under other circumstances set forth in the Indenture such as a declaration of a dividend.

The Convertible Notes are redeemable, in whole and not part, at the Company's option at any time on or after November 20, 2023 and on or before the 40th scheduled trading day immediately before the maturity date, at a cash redemption price equal to the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date, but only if the last reported sale price per share of the Company's common stock exceeds 130% of the conversion price on: (i) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date the Company sends the related redemption notice; and (ii) the trading day immediately before the date the Company sends such notice. In addition, calling the Convertible Notes for redemption will constitute a Make-Whole Fundamental Change, which will result in an increase to the conversion rate in certain circumstances for a specified period of time. No sinking fund is provided for the Convertible Notes.

During 2022, the conversion price was revalued on a quarterly basis due to quarterly dividend declarations and the conversion price is \$31.751 per share at December 31, 2022. The Convertible Notes may be converted in certain circumstances, including at any time after, and including, July 15, 2025 until the close of business on the second scheduled trading day immediately before the maturity date.

During the fourth quarter of 2022, the common stock sale condition of the Convertible Notes was satisfied. As described in the Indenture, this condition is satisfied when the closing stock price exceeds 130% of the conversion price for at least 20 trading days of the last 30 trading days prior to quarter end. As a result, the Convertible Notes are currently convertible at the election of noteholders during the fourth quarter of 2022 and are classified as current maturities of debt on the Company's Consolidated Balance Sheet at December 31, 2022.

During the year ended December 31, 2022, the Company entered into exchange and repurchase agreements for \$142.1 million principal amount of the Convertible Notes for aggregate consideration consisting of \$208.1 million in cash and approximately 2.6 million shares of Arch Resources common stock. In connection with the exchanges and repurchases, the Company recognized a total loss of \$10.3 million which includes inducement premium payments of \$5.0 million, unamortized deferred financing fees of \$3.8 million and professional fees of \$1.5 million. This amount is included as "Net loss resulting from early retirement of debt" in the accompanying Consolidated Statements of Operations.

As of December 31, 2022, \$13.2 million of the Convertible Notes remained outstanding and the if-converted value of the Convertible Notes exceeded the principal amount by \$46.0 million.

Total interest expense related to the Convertible Debt for the year ended December 31, 2022 was \$4.7 million, which was related to the contractual interest coupon of \$4.1 million and \$0.6 million of amortization of deferred financing fees. Total interest expense related to the Convertible Debt for the year ended December 31, 2021 was \$15.1 million and was comprised of \$8.2 million related to the contractual interest coupon and \$6.9 million related to the amortization of the discount on the liability component and amortization of deferred financing fees.

Capped Call Transactions

In connection with the offering of the Convertible Notes, the Company entered into privately negotiated convertible note hedge transactions (collectively, the “Capped Call Transactions”). The Capped Call Transactions cover, subject to customary anti-dilution adjustments, the number of shares of the Company’s common stock that initially underlie the Convertible Notes.

The Capped Call Transactions are expected generally to reduce the potential dilution and/or offset any cash payments the Company is required to make in excess of the principal amount due upon conversion of the Convertible Notes in the event that the market price of the Company’s common stock is greater than the strike price of the Capped Call Transactions, which was initially \$37.325 per share and the initial cap price was \$52.255 per share. The initial call and cap prices are subject to adjustments under the terms of the underlying capped call agreements, including for various transactions such as the payment of dividends. The number of shares underlying the Capped Call Transactions is 4.2 million.

The cap price of the Capped Call Transactions was initially \$52.2550 per share, which represented a premium of 75% over the last reported sale price of the Company’s common stock on October 29, 2020. The cost of the Capped Call Transactions was approximately \$17.5 million.

As of December 31, 2022, the Capped Call Transactions remain outstanding and have an intrinsic value of \$62.1 million.

The Capped Call Transactions are separate transactions, in each case entered into between the Company and the respective Option Counterparty, and are not part of the terms of the Convertible Notes and will not affect any holder’s rights under the Convertible Notes. Holders of the Convertible Notes will not have any rights with respect to the Capped Call Transactions. Additionally, the cost of the Capped Call Transactions is not expected to be tax deductible as the Company did not elect to integrate the Capped Call Transactions into the notes for tax purposes. As the Capped Call Transactions meet certain accounting criteria, they were classified as equity and are not accounted for as derivatives.

Interest Rate Swaps

The Company entered into a series of interest rate swaps to fix a portion of the LIBOR interest payments due under the Term Loan Debt Facility. Through the date of the prepayment, the interest rate swaps qualified for cash flow hedge accounting treatment, and as such, the change in the fair value of the interest rate swaps was recorded on the Company’s Consolidated Balance Sheets as an asset or liability with the effective portion of the gains or losses reported as a component of accumulated other comprehensive income and the ineffective portion reported in earnings. Due to the Company repaying the majority of the Term Loans in the first quarter of 2022, the interest rate swaps no longer qualify for cash flow hedge accounting and are considered ineffective. As a result, the Company reclassified \$1.4 million from other comprehensive income to expense. Additionally, future changes in value of the interest rate swaps will be recorded to “other operating expense (income), net” in the accompanying Consolidated Statements of Operations.

The fair value of the interest rate swaps at December 31, 2022 is an asset of \$1.2 million, which is recorded within Other noncurrent assets. The interest rate swaps are classified as Level 2 within the fair value hierarchy.

Debt Maturities

The contractual maturities of debt as of December 31, 2022 are as follows:

Year	(In thousands)
2023	\$ 46,008
2024	12,203
2025	118,994
2026	—
2027	—
Thereafter	—
	<u>\$ 177,205</u>

Financing Costs

The Company paid financing costs of \$1.0 million, \$2.1 million and \$9.7 million during the years ended December 31, 2022, 2021 and 2020, respectively.

14. Taxes

Significant components of the (benefit from) provision for income taxes are as follows:

(In thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Current:			
Federal	\$ (30,107)	\$ 1,525	\$ 518
State	204	342	(569)
Total current	<u>\$ (29,903)</u>	<u>\$ 1,867</u>	<u>\$ (51)</u>
Deferred:			
Federal	\$ (209,130)	\$ 7	\$ 44
State	(12,893)	—	—
Total deferred	<u>\$ (222,023)</u>	<u>\$ 7</u>	<u>\$ 44</u>
	<u>\$ (251,926)</u>	<u>\$ 1,874</u>	<u>\$ (7)</u>

A reconciliation of the statutory federal income tax provision (benefit) at the statutory rate to the actual (benefit from) provision for income taxes follows:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Income tax provision (benefit) at statutory rate	\$ 226,587	\$ 71,284	\$ (72,371)
Percentage depletion and other permanent items	(52,647)	(29,392)	(7,763)
State taxes, net of effect of federal taxes	2,988	16,490	(3,298)
Change in valuation allowance	(420,688)	(69,603)	76,524
Other, net	(8,166)	13,095	6,901
(Benefit from) provision for income taxes	<u>\$ (251,926)</u>	<u>\$ 1,874</u>	<u>\$ (7)</u>

Significant components of the Company’s deferred tax assets and liabilities that result from carryforwards and temporary differences between the financial statement basis and tax basis of assets and liabilities are summarized as follows:

(In thousands)	December 31, 2022	December 31, 2021
Deferred tax assets:		
Tax loss carryforwards	\$ 219,302	\$ 326,763
Tax credit carryforwards	1,656	2,565
Investment in partnerships	39,999	170,610
Other	38,362	17,263
Gross deferred tax assets	\$ 299,319	\$ 517,201
Valuation allowance	(83,704)	(504,392)
Total deferred tax assets	\$ 215,615	\$ 12,809
Deferred tax liabilities:		
Plant and equipment	1,245	467
Convertible Notes	75	7,008
Other	4,825	5,304
Total deferred tax liabilities	\$ 6,145	\$ 12,779
Net deferred tax asset	\$ 209,470	\$ 30

The Company provides for deferred income taxes for temporary differences arising from differences between the financial statement and tax basis of assets and liabilities existing at each balance sheet date using enacted tax rates expected to be in effect when the related taxes are expected to be paid or recovered.

The Company assesses the need for a valuation allowance against its deferred tax assets (including temporary differences and tax attributes) through a review of all available positive and negative evidence. On the basis of this assessment, a full valuation allowance was recorded against the Company’s net deferred tax assets in 2015 and maintained through 2021. As of December 31, 2021, a \$504.4 million valuation allowance fully offset the Company’s net deferred tax assets.

During 2022, the Company experienced record profitability, recording a pre-tax profit of \$1.08 billion for the year. After considering the impact of this and the resulting significant 3-year cumulative income position, along with all other positive and negative evidence, the Company determined that it is more likely than not that the net deferred tax assets would be realized, except for certain state NOLs and capital losses. Based on this conclusion, the Company released valuation allowance totaling \$420.7 million during the fourth quarter of 2022. A corresponding income tax benefit was also recorded through continuing operations.

At December 31, 2022, the Company has gross NOL carryforwards for federal income tax purposes of \$607.1 million. Of these carryforwards, approximately \$334.5 million will expire, if not utilized, in various years through 2037. The remaining carryforwards have no expiration; however, they can only be used to offset 80% of our U.S. federal taxable income in any taxable year beginning after December 31, 2022.

The ability to use our net NOLs in existence immediately prior to our emergence from bankruptcy in 2016 has been limited by the “ownership change” under Section 382 of the Internal Revenue Code (the “Code”) that occurred as a result of such emergence (the “Emergence Ownership Change”). NOLs generated after the Emergence Ownership Change are generally not subject to limitations resulting from the Emergence Ownership Change.

On August 16, 2022, the Inflation Reduction Act of 2022 (“IRA”) was signed into law. This legislation introduces a 15% corporate alternative minimum tax among its key tax provisions. The IRA is effective for years beginning after December 31, 2022, therefore, the Company did not experience material impact in the current year. The Company will continue to evaluate the effects of IRA on future periods, however, does not anticipate any material impact.

A reconciliation of the beginning and ending amounts of gross unrecognized tax benefits follows:

	<u>(In thousands)</u>
Balance at December 31, 2019	\$ 39,729
Additions based on tax positions to the current year	1,583
Additions for tax positions related to the prior year	7,918
Reductions for tax positions of prior years	(732)
Reductions as a result of lapses in the statute of limitations	(382)
Balance at December 31, 2020	48,116
Additions for tax positions related to the current year	3,467
Additions for tax positions related to the prior year	3,931
Reductions for tax positions of prior years	(2,868)
Reductions as a result of lapses in the statute of limitations	(3,683)
Balance at December 31, 2021	48,963
Additions based on tax positions to the current year	5,446
Additions for tax positions related to the prior year	768
Reductions for tax positions of prior years	(125)
Reductions as a result of lapses in the statute of limitations	(36,988)
Balance at December 31, 2022	<u>\$ 18,064</u>

If recognized, the entire amount of the gross unrecognized tax benefits at December 31, 2022 would affect the effective tax rate. The Company recognizes interest and penalties related to unrecognized tax benefits in income tax expense. The Company had accrued interest and penalties of \$0.0 million and \$3.8 million at December 31, 2022 and 2021, respectively. In the next 12 months, \$3.1 million gross unrecognized tax benefits are expected to be reduced due to the expiration of the statute of limitations.

The Company is subject to U.S. federal income tax as well as income tax in multiple state jurisdictions. The tax years 2011 through 2021 remain open to examination for U.S. federal income tax matters and 2001 through 2021 remain open to examination for various state income tax matters.

15. Asset Retirement Obligations

The Company's asset retirement obligations arise from the Federal Surface Mining Control and Reclamation Act of 1977 and similar state statutes, which require that mine property be restored in accordance with specified standards and an approved reclamation plan. The required reclamation activities to be performed are outlined in the Company's mining permits. These activities include reclaiming the pit and support acreage at surface mines, sealing portals at underground mines, reclaiming refuse areas and slurry ponds and water treatment.

The following table describes the changes to the Company's asset retirement obligation liability:

(In thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021
Balance at beginning of period (including current portion)	\$ 214,453	\$ 257,764
Accretion expense	17,721	21,748
Obligations of divested operations	—	—
Adjustments to the liability from changes in estimates	25,914	(26,012)
Reclamation work completed	(13,720)	(39,047)
Balance at period end	\$ 244,368	\$ 214,453
Current portion included in accrued expenses	(8,632)	(21,781)
Noncurrent liability	\$ 235,736	\$ 192,672

As of December 31, 2022, the Company had \$457.1 million in reclamation surety bonds outstanding and posted \$0.6 million in cash as collateral related to the surety bonds; this amount is recorded within "Noncurrent assets" on the Consolidated Balance Sheets. Additionally, through December 31, 2022, the Company has contributed \$136.0 million to a fund that will serve to defease the long-term asset retirement obligation for its thermal asset base; this amount is recorded as "Fund for asset retirement obligations" on the Consolidated Balance Sheets. The funds are invested in highly rated securities, such as U.S. Treasuries, which fall within Level 1 of the fair value hierarchy. The funds will only be utilized for final mine closure reclamation activities.

16. Fair Value Measurements

The hierarchy of fair value measurements assigns a level to fair value measurements based on the inputs used in the respective valuation techniques. The levels of the hierarchy, as defined below, give the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs.

- Level 1 is defined as observable inputs such as quoted prices in active markets for identical assets. Level 1 assets include U.S. Treasury securities, and coal swaps and futures that are submitted for clearing on the New York Mercantile Exchange.
- Level 2 is defined as observable inputs other than Level 1 prices. These include quoted prices for similar assets or liabilities in an active market, quoted prices for identical assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities. The Company's level 2 assets and liabilities include U.S. government agency securities, coal commodity contracts and interest rate swaps with fair values derived from quoted prices in over-the-counter markets or from prices received from direct broker quotes.
- Level 3 is defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions. These include the Company's commodity option contracts (heating oil) valued using modeling techniques, such as Black-Scholes, that require the use of inputs, particularly volatility, that are rarely

observable. Changes in the unobservable inputs would not have had a significant impact on the reported Level 3 fair values at December 31, 2022 and 2021.

The table below sets forth, by level, the Company's financial assets and liabilities that are recorded at fair value in the accompanying consolidated balance sheet:

	December 31, 2022			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets:				
Investments in marketable securities	\$ 36,993	\$ 28,301	\$ 8,692	\$ —
Derivatives	3,955	—	2,655	1,300
Total assets	<u>\$ 40,948</u>	<u>\$ 28,301</u>	<u>\$ 11,347</u>	<u>\$ 1,300</u>
Liabilities:				
Derivatives	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>

	Fair Value at December 31, 2021			
	Total	Level 1	Level 2	Level 3
	(In thousands)			
Assets:				
Investments in marketable securities	\$ 14,463	\$ 6,003	\$ 8,460	\$ —
Derivatives	4,214	—	2,995	1,219
Total assets	<u>\$ 18,677</u>	<u>\$ 6,003</u>	<u>\$ 11,455</u>	<u>\$ 1,219</u>
Liabilities:				
Derivatives	<u>\$ 2,077</u>	<u>\$ 313</u>	<u>\$ 1,764</u>	<u>\$ —</u>

The Company's contracts with its counterparties allow for the settlement of contracts in an asset position with contracts in a liability position in the event of default or termination. For classification purposes, the Company records the net fair value of all the positions with these counterparties as a net asset or liability. Each level in the table above displays the underlying contracts according to their classification in the accompanying Consolidated Balance Sheet, based on this counterparty netting.

The following table summarizes the change in the fair values of financial instruments categorized as level 3.

(In thousands)	2022	2021
Balance, beginning of period	\$ 1,219	\$ —
Realized and unrealized gains (losses) recognized in earnings, net	7,019	—
Purchases	4,673	1,219
Settlements	(11,611)	—
Ending balance	<u>\$ 1,300</u>	<u>\$ 1,219</u>

No unrealized losses were recognized during the year ended December 31, 2022 related to level 3 financial instruments held on December 31, 2022.

Cash and Cash Equivalents

At December 31, 2022 and 2021, the carrying amounts of cash and cash equivalents approximate their fair value.

Fair Value of Long-Term Debt

At December 31, 2022 and 2021, the fair value of the Company's debt, including amounts classified as current, was \$223.0 million and \$819.5 million, respectively. Fair values are based upon observed prices in an active market, when available, or from valuation models using market information, which fall into Level 2 in the fair value hierarchy.

17. Capital Stock

Dividends

The Company declared and paid cash dividends per share during the periods presented below:

2022:	<u>Dividends per share</u>	<u>Amount (in thousands)</u>
1st quarter	\$ 0.25	\$ 3,851
2nd quarter	8.11	150,716
3rd quarter	6.00	110,071
4th quarter	10.75	191,754
Total cash dividends declared and paid	<u>\$ 25.11</u>	<u>\$ 456,392</u>

2021:	<u>Dividends per share</u>	<u>Amount (in thousands)</u>
1st quarter	\$ —	\$ —
2nd quarter	—	—
3rd quarter	—	—
4th quarter	0.25	3,830
Total cash dividends declared and paid	<u>\$ 0.25</u>	<u>\$ 3,830</u>

Future dividend declarations will be subject to ongoing Board review and authorization will be based on a number of factors, including business and market conditions, the Company's future financial performance and other capital priorities.

Share Repurchase Program

During the second quarter of 2022, the Board of Directors increased the remaining outstanding authorization for share repurchases to \$500 million. The timing of any future share purchases, and the ultimate number of shares of common stock to be purchased, will depend on a number of factors, including business and market conditions, future financial performance, and other capital priorities. The shares will be acquired in the open market or through private transactions in accordance with Securities and Exchange Commission requirements. The share repurchase program has no termination date, but may be amended, suspended or discontinued at any time and does not commit the Company to repurchase shares of its common stock. The actual number and value of the shares to be purchased will depend on the performance of the Company's stock price and other market conditions.

On August 16, 2022, the Inflation Reduction Act of 2022 ("IRA") was signed into law. This legislation introduces a 1% excise tax on stock buybacks among its key tax provisions. The IRA is effective for years beginning after December 31, 2022.

During 2022, the Company repurchased 1,118,457 shares at an average price of \$141.97 for an aggregate purchase price of approximately \$158.8 million. As of December 31, 2022, the Company had repurchased 11,206,835 shares at an average share price of \$87.99 per share for an aggregate purchase price of approximately \$986.1 million since inception of the stock repurchase program, and the remaining authorized amount for stock repurchases under this program is approximately \$341.2 million.

Outstanding Warrants

In October 2016, the Company emerged from Chapter 11 which became known as the “Effective Date”. On the Effective Date, the Company entered into a warrant agreement (the “Warrant Agreement”) with American Stock Transfer & Trust Company, LLC as warrant agent and, pursuant to the terms of the Plan, issued warrants (“Warrants”) to purchase up to an aggregate of 1,914,856 shares of Class A Common Stock, par value \$0.01 per share, of Arch Resources (the “Class A Common Stock”) to certain holders of claims in the Chapter 11 case. Each Warrant expires on October 5, 2023, and is initially exercisable for one share of Class A Common Stock at an initial exercise price of \$57.00 per share. The Warrants are exercisable by a holder paying the exercise price in cash or on a cashless basis, at the election of the holder. The Warrants contain anti-dilution adjustments for stock splits, reverse stock splits, stock dividends, dividends and distributions of cash, other securities or other property, spin-offs and tender and exchange offers by Arch Resources or its subsidiaries to purchase Class A Common Stock at above-market prices.

If, in connection with a merger, recapitalization, business combination, transfer to a third party of substantially all of Arch Resources’ consolidated assets or other transaction that results in a change to the Class A Common Stock (each, a “Transaction”), (i) the Transaction is consummated prior to the fifth anniversary of the Effective Date and the Transaction consideration to holders of Class A Common Stock is 90% or more listed common stock or common stock of a company that provides publicly available financial reporting, and holds management calls regarding the same, no less than quarterly (“Reporting Stock”) or (ii) regardless of the consideration, the Transaction is consummated on or after the fifth anniversary of the Effective Date, the Warrants will be assumed by the surviving company and will become exercisable for the consideration that the holders of Class A Common Stock receive in such Transaction; *provided* that if the consideration such holders receive consists solely of cash, then upon the consummation of such Transaction, Arch Resources will pay for each Warrant an amount of cash equal to the greater of (i) (x) the amount of cash payable with respect to the number of shares of Class A Common Stock underlying the Warrant *minus* (y) the exercise price per share then in effect *multiplied* by the number of shares of Class A Common Stock underlying the Warrant and (ii) \$0.

During 2022, holders of warrants exercised 573,341 of the warrants, leaving 1,252,082 warrants outstanding at December 31, 2022.

As provided in ASC 825-20, “Financial Instruments,” the warrants are considered equity because they can only be physically settled in Company shares, can be settled in unregistered shares, the Company has adequate authorized shares to settle the outstanding warrants and each warrant is fixed in terms of settlement to one share of Company stock subject only to remote contingency adjustment factors designed to assure the relative value in terms of shares remains fixed.

18. Stock-Based Compensation and Other Incentive Plans

Under the Company’s 2016 Omnibus Incentive Plan (the “Incentive Plan”), 3.0 million shares of the Company’s common stock were reserved for awards to officers and other selected key management employees of the Company. The Incentive Plan provides the Board of Directors with the flexibility to grant stock options, stock appreciation rights, restricted stock awards, restricted stock units, performance stock or units, phantom stock awards and rights to acquire stock through purchase under a stock purchase program (“Awards”). Awards the Board of Directors elects to pay out in cash do not impact the shares authorized in the Incentive Plan. Shares available for award under the plan were 1.8 million at December 31, 2022.

Restricted Stock Unit Awards

The Company may issue restricted stock and restricted stock units, which require no payment from the employee. Restricted stock cliff-vests at various dates and restricted stock units either vest ratably over or vest at the end of the award’s stated vesting period. Compensation expense is based on the fair value on the grant date and is recorded ratably over the vesting period utilizing the straight-line recognition method. Upon vesting, the employee receives cash compensation equal to the amount of dividends that would have been paid on the underlying shares.

During 2022, the Company granted both time and performance-based awards. The time-based awards vest ratably over a three-year period whereas the performance-based awards vest at the end of three years. The time-based awards' grant date fair value was determined based on the stock price at the date of grant. The performance-based awards' grant date fair value was determined using a Black-Scholes Monte Carlo simulation. An historical volatility of 59% was selected for the performance-based award based on comparator companies, and the three-year risk-free rate was derived from yields on U.S. Government bonds. Information regarding the restricted stock units activity and weighted average grant-date fair value follows:

	Time Based Awards		Performance Based Awards	
	Restricted Stock Units	Weighted Average Grant-Date Fair Value	Restricted Stock Units	Weighted Average Grant-Date Fair Value
(Shares in thousands)				
Outstanding at January 1, 2022	429	\$ 61.60	341	\$ 53.49
Granted & Reinvested	94	106.27	79	163.31
Forfeited/Canceled	(14)	49.61	(13)	56.04
Vested	(150)	60.62	—	—
Unvested outstanding at December 31, 2022	359	\$ 74.14	407	\$ 74.68

The Company recognized expense related to restricted stock units of \$27.4 million, \$20.5 million and \$17.4 million for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, there was \$28.8 million of unrecognized share-based compensation expense which is expected to be recognized over a weighted-average period of approximately two years.

19. Workers' Compensation Expense

The Company is liable under the Federal Mine Safety and Health Act of 1969, as subsequently amended, to provide for pneumoconiosis (occupational disease) benefits to eligible employees, former employees and dependents. The Company currently provides for federal claims principally through a self-insurance program. The Company is also liable under various state workers' compensation statutes for occupational disease benefits. The occupational disease benefit obligation represents the present value of the actuarially computed present and future liabilities for such benefits over the employees' applicable years of service.

In October 2019, the Company filed an application with the Office of Workers' Compensation Programs ("OWCP") within the Department of Labor for reauthorization to self-insure federal black lung benefits. In February 2020, the Company received a reply from the OWCP confirming its status to remain self-insured contingent upon posting additional collateral of \$71.1 million within 30 days of receipt of the letter. The Company is currently appealing the ruling from the OWCP and has received an extension to self-insure during the appeal process.

On January 18, 2023, the OWCP proposed revisions to regulations under the Black Lung Benefits Act (BLBA) governing authorization of self-insurers. The revisions seek to codify the practice of basing a self-insured operator's security requirement on an actuarial assessment of its total present and future black lung liability. A material change to the regulations is the requirements that all self-insured operators must post security equal to 120% of their projected black lung liabilities.

The proposed regulations were posted to the Federal Register on January 19, 2023 with written comments to be accepted within 60 days of this date.

The revisions proposed by the OWCP were a material deviation from their bulletin issued in December 2020 that would have required the majority of coal operators to post security equal to 70% of their projected black lung liabilities, which equated to the Company posting additional collateral of \$71.1 million as mentioned previously.

If the above regulation is codified into law, the Company will be required to post additional collateral to maintain its self-insured status. The Company is evaluating alternatives to self-insurance, including the purchase of commercial

insurance to cover these claims. Additionally, the Company is assessing the availability of surety bond capacity within the markets, additional sources of liquidity, and other items to satisfy the proposed regulations.

In addition, the Company is liable for workers' compensation benefits for traumatic injuries which are calculated using actuarially-based loss rates, loss development factors and discounted based on a risk-free rate of 3.41%. Traumatic workers' compensation claims are insured with varying retentions/deductibles, or through state-sponsored workers' compensation programs.

Workers' compensation expense consists of the following components:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Self-insured occupational disease benefits:			
Service cost	\$ 5,991	\$ 7,796	\$ 7,564
Interest cost ⁽¹⁾	4,610	4,439	5,115
Net amortization ⁽¹⁾	628	2,363	1,189
Total occupational disease	<u>\$ 11,229</u>	<u>\$ 14,598</u>	<u>\$ 13,868</u>
Traumatic injury claims and assessments	(3,783)	3,925	12,922
Total workers' compensation expense	<u>\$ 7,446</u>	<u>\$ 18,523</u>	<u>\$ 26,790</u>

- (1) In accordance with the adoption of ASU 2017-07, "Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost," these costs are recorded within Nonoperating expenses in the Consolidated Statements of Operations on the line item "Non-service related pension and postretirement benefit costs."

The table below reconciles changes in the occupational disease liability for the respective period.

(In thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021
Beginning of period	\$ 167,585	\$ 183,001
Service cost	5,991	7,796
Interest cost	4,610	4,439
Actuarial gain	(48,859)	(21,245)
Benefit and administrative payments	(9,319)	(6,406)
	<u>\$ 120,008</u>	<u>\$ 167,585</u>

The following table provides the assumptions used to determine the projected occupational disease obligation:

(Percentages)	Year Ended December 31, 2022	Year Ended December 31, 2021
Discount rate	5.21	2.82

The higher discount rate decreased obligations by \$50.9 million.

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Summarized below is information about the amounts recognized in the accompanying Consolidated Balance Sheets for workers' compensation benefits:

	Year Ended December 31, 2022	Year Ended December 31, 2021
(In thousands)		
Occupational disease costs	\$ 120,008	\$ 167,585
Traumatic and other workers' compensation claims	53,332	70,722
Total obligations	173,340	238,307
Less amount included in accrued expenses	17,584	14,202
Noncurrent obligations	<u>\$ 155,756</u>	<u>\$ 224,105</u>

As of December 31, 2022, the Company had \$121.7 million in surety bonds, letters of credit and cash outstanding to secure workers' compensation obligations.

As of December 31, 2022, the Company's recorded liabilities include \$8.0 million of obligations that are reimbursable under various insurance policies purchased by the Company. These insurance receivables are recorded in the balance sheet line items "Other receivables" and "Other noncurrent assets" for \$0.4 million and \$7.6 million, respectively.

The following represents expected future payments:

Year	(In thousands)
2023	\$ 13,344
2024	14,032
2025	14,154
2026	14,472
2027	14,837
Next 5 years	34,929
	<u>\$ 105,768</u>

20. Employee Benefit Plans

Defined Benefit Pension and Other Postretirement Benefit Plans

The Company provides funded and unfunded non-contributory defined benefit pension plans covering certain of its salaried and hourly employees. Benefits are generally based on the employee's age and compensation. The Company funds the plans in an amount not less than the minimum statutory funding requirements or more than the maximum amount that can be deducted for U.S. federal income tax purposes.

The Company also currently provides certain postretirement medical and life insurance coverage for eligible employees. Generally, covered employees who terminate employment after meeting eligibility requirements are eligible for postretirement coverage for themselves and their dependents. The Company offers a subsidy to eligible retirees based on age and years of service at retirement and contain other cost-sharing features such as deductibles and coinsurance. The Company's current funding policy is to fund the cost of all postretirement benefits as they are paid.

On January 1, 2015, the Company's cash balance and excess plans were amended to freeze new service credits for any new or active employees.

Obligations and Funded Status.

Summaries of the changes in the benefit obligations, plan assets and funded status of the plans are as follows:

	Pension Benefits		Other Postretirement Benefits	
	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2022	Year Ended December 31, 2021
(In thousands)				
CHANGE IN BENEFIT OBLIGATIONS				
Benefit obligations at beginning of period	\$ 169,976	\$ 202,267	\$ 79,245	\$ 100,898
Service cost	—	—	282	341
Interest cost	5,264	4,334	2,006	2,113
Settlement gain	(771)	(1,768)	—	—
Plan Amendments	—	(341)	—	—
Benefits paid	(22,164)	(27,014)	(4,834)	(5,676)
Other-primarily actuarial gain	(29,875)	(7,502)	(22,185)	(18,431)
Benefit obligations at end of period	<u>\$ 122,430</u>	<u>\$ 169,976</u>	<u>\$ 54,514</u>	<u>\$ 79,245</u>
CHANGE IN PLAN ASSETS				
Value of plan assets at beginning of period	\$ 177,499	\$ 199,248	\$ —	\$ —
Actual return on plan assets	(34,325)	5,117	—	—
Employer contributions	117	148	4,834	5,676
Benefits paid	(22,164)	(27,014)	(4,834)	(5,676)
Value of plan assets at end of period	<u>\$ 121,127</u>	<u>\$ 177,499</u>	<u>\$ —</u>	<u>\$ —</u>
Accrued benefit net asset (obligation)	<u>\$ (1,303)</u>	<u>\$ 7,523</u>	<u>\$ (54,514)</u>	<u>\$ (79,245)</u>
ITEMS NOT YET RECOGNIZED AS A COMPONENT OF NET PERIODIC BENEFIT COST				
Prior service credit	\$ 945	\$ 1,091	\$ —	\$ —
Accumulated gain	5,164	16,102	40,334	20,657
	<u>\$ 6,109</u>	<u>\$ 17,193</u>	<u>\$ 40,334</u>	<u>\$ 20,657</u>
BALANCE SHEET AMOUNTS				
Noncurrent asset	\$ —	\$ 8,973	\$ —	\$ —
Current liability	(202)	(150)	(4,840)	(5,680)
Noncurrent liability	(1,101)	(1,300)	(49,674)	(73,565)
	<u>\$ (1,303)</u>	<u>\$ 7,523</u>	<u>\$ (54,514)</u>	<u>\$ (79,245)</u>

Pension Benefits

The accumulated benefit obligation for all pension plans was \$122.4 million and \$170.0 million at December 31, 2022 and 2021, respectively.

The weighted-average interest credit rate for the cash balance pension plan was 4.25% at December 31, 2022 and 2021.

Significant changes affecting the benefit obligations included the higher discount rate which decreased plan obligations by \$31.9 million.

Other Postretirement Benefits

Significant gains and losses affecting the benefit obligations included:

- the higher discount rate decreased plan obligations by \$15.3 million;
- the claims cost assumptions were updated decreasing plan obligations by \$4.8 million; and
- updated census data resulted in a decrease of plan obligations in the amount of \$1.9 million.

Components of Net Periodic Benefit Cost. The following table details the components of pension and postretirement benefit costs (credits):

	Pension Benefits			Other Postretirement Benefits		
	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
(In thousands)						
Service cost	\$ —	\$ —	\$ —	\$ 282	\$ 341	\$ 419
Interest cost ⁽¹⁾	5,264	4,334	5,498	2,006	2,113	2,392
Settlements ⁽¹⁾	(771)	(1,768)	(896)	—	—	—
Expected return on plan assets ⁽¹⁾	(6,173)	(7,245)	(8,283)	—	—	—
Amortization of prior service credits ⁽¹⁾	(147)	(128)	(112)	—	—	—
Amortization of other actuarial losses (gains) ⁽¹⁾	(313)	(62)	—	(2,508)	—	(1,379)
Net benefit cost (credit)	\$ (2,140)	\$ (4,869)	\$ (3,793)	\$ (220)	\$ 2,454	\$ 1,432

(1) In accordance with the adoption of ASU 2017-07, “Compensation-Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost,” these costs are recorded within Nonoperating expenses in the Consolidated Statements of Operations on the line item “Non-service related pension and postretirement benefit costs.”

The differences generated from changes in assumed discount rates and returns on plan assets are amortized into earnings over the remaining service attribution periods of the employees using the corridor method.

Assumptions. The following table provides the assumptions used to determine the actuarial present value of projected benefit obligations for the respective periods.

	Year Ended December 31, 2022	Year Ended December 31, 2021
(Percentages)		
Pension Benefits		
Discount rate	5.20/5.15	2.67/2.49
Other Postretirement Benefits		
Discount rate	5.19	2.63

The following table provides the weighted average assumptions used to determine net periodic benefit cost for the respective periods.

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
(Percentages)			
Pension Benefits			
Discount rate	4.47	2.50	2.72
Expected return on plan assets	4.06	4.30	4.65
Other Postretirement Benefits			
Discount rate	2.63	2.17	3.09

The discount rates used in 2022, 2021 and 2020 were reevaluated during the year for settlements. The obligations are remeasured at an updated discount rate that impacts the benefit cost recognized subsequent to the remeasurement.

The Company establishes the expected long-term rate of return at the beginning of each fiscal year based upon historical returns and projected returns on the underlying mix of invested assets. The Company utilizes modern portfolio theory modeling techniques in the development of its return assumptions. This technique projects rates of return that can be generated through various asset allocations that lie within the risk tolerance set forth by members of the Company's retirement committee (the "Retirement Committee"). The risk assessment provides a link between a pension plan's risk capacity, management's willingness to accept investment risk and the asset allocation process, which ultimately leads to the return generated by the invested assets.

The health care cost trend rate assumed for 2022 is 8.0% and is expected to reach an ultimate trend rate of 4.0% by 2048.

Plan Assets

The Retirement Committee is responsible for overseeing the investment of pension plan assets. The Retirement Committee is responsible for determining and monitoring appropriate asset allocations and for selecting or replacing investment managers, trustees and custodians. The pension plan's current investment targets are 15% equity and 85% fixed income securities. The Retirement Committee reviews the actual asset allocation in light of these targets on a periodic basis and rebalances among investments as necessary. The Retirement Committee evaluates the performance of investment managers as compared to the performance of specified benchmarks and peers and monitors the investment managers to ensure adherence to their stated investment style and to the plan's investment guidelines.

The Company's pension plan assets at December 31, 2022 and 2021, respectively, are categorized below according to the fair value hierarchy as defined in Note 16, "Fair Value Measurements":

	Total		Level 1		Level 2		Level 3	
	2022	2021	2022	2021	2022	2021	2022	2021
	(In thousands)							
Fixed income securities:								
U.S. government securities ^(A)	\$ 37,148	\$ 42,273	\$ 34,143	\$ 41,129	\$ 3,005	\$ 1,144	\$ —	\$ —
Non-U.S. government securities ^(B)	2,340	333	—	—	2,340	333	—	—
Corporate fixed income ^(C)	41,286	81,906	—	—	41,286	81,906	—	—
State and local government securities ^(D)	2,504	2,514	—	—	2,504	2,514	—	—
Other investments^(E)	15,616	23,828	—	—	15,616	23,828	—	—
Total	\$ 98,894	\$ 150,854	\$ 34,143	\$ 41,129	\$ 64,751	\$ 109,725	\$ —	\$ —
Assets at net asset value^(F)	22,233	26,645						
	\$ 121,127	\$ 177,499						

- (A) U.S. government securities includes agency and treasury debt. These investments are valued using dealer quotes in an active market.
- (B) Non-U.S. government securities includes debt securities issued by foreign governments and are valued utilizing a price spread basis valuation technique with observable sources from investment dealers and research vendors.
- (C) Corporate fixed income is primarily comprised of corporate bonds and certain corporate asset-backed securities that are denominated in the U.S. dollar and are investment-grade securities. These investments are valued using dealer quotes.
- (D) State and local government securities include different U.S. state and local municipal bonds and asset backed securities, these investments are valued utilizing a market approach that includes various valuation techniques and sources such as value generation models, broker quotes, benchmark yields and securities, reported trades, issuer trades and/or other applicable data.
- (E) Other investments include cash, forward contracts, derivative instruments, credit default swaps, interest rate swaps and mutual funds. Investments in interest rate swaps are valued utilizing a market approach that includes various valuation techniques and sources such as value generation models, broker quotes in active and non-active markets, benchmark yields and securities, reported trades, issuer trades and/or other applicable data. Forward contracts and derivative instruments are valued at their exchange listed price or broker quote in an active market. The mutual funds are valued at the net asset value per share multiplied by the number of shares held as of the measurement date and are traded on listed exchanges.
- (F) Investments that are measured at fair value using the net asset value per share practical expedient have not been classified in the fair value hierarchy in accordance with Accounting Standards Update 2015-07. These investments are primarily mutual funds that are highly liquid with no restrictions on ability to redeem the funds into cash.

Cash Flows. The Company expects to make approximately \$7.6 million in contributions to the pension plans in 2023.

The following represents expected future benefit payments from the plan:

	Pension Benefits	Other Postretirement Benefits
	(In thousands)	
2023	\$ 16,833	\$ 5,199
2024	11,950	5,051
2025	10,686	4,952
2026	10,083	4,826
2027	9,879	4,731
Next 5 years	41,667	20,858
	<u>\$ 101,098</u>	<u>\$ 45,617</u>

Other Plans

The Company sponsors savings plans which were established to assist eligible employees in providing for their future retirement needs. The Company's expense, representing its contributions to the plans, was \$18.7 million, \$16.8 million, and \$17.1 million for the years ended December 31, 2022, 2021, and 2020, respectively.

21. Earnings Per Common Share

The Company computes basic net income (loss) per share using the weighted average number of common shares outstanding during the period. Diluted net income (loss) per share is computed using the weighted average number of common shares and the effect of potentially dilutive securities outstanding during the period. Potentially dilutive securities may consist of warrants, restricted stock units or other contingently issuable shares and convertible debt. The dilutive effect of outstanding warrants, restricted stock units is reflected in diluted earnings per share by application of the treasury stock method whereas the Convertible Debt uses the if-converted method. The weighted average share impact of warrants, restricted stock units and convertible debt that were excluded from the calculation of diluted shares due to the Company incurring a net loss for the twelve months ending December 31, 2020 were 215,000 shares.

The following table provides the basis for basic and diluted EPS by reconciling the numerators and denominators of the computations:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
(In Thousands)			
Net income (loss) attributable to common shares	\$ 1,330,914	\$ 337,573	(\$ 344,615)
Adjustment of interest expense attributable to convertible notes	4,726	-	-
Adjustment for inducement payments	4,914	-	-
Diluted net income (loss) attributable to common shareholders	<u>\$ 1,340,554</u>	<u>\$ 337,573</u>	<u>(\$ 344,615)</u>
Weighted average shares outstanding:			
Basic weighted average shares outstanding	17,136	15,318	15,153
Effect of dilutive securities	1,730	654	—
Convertible Notes	2,119	1,607	—
Diluted weighted average shares outstanding	<u>20,985</u>	<u>17,579</u>	<u>15,153</u>

22. Leases

The Company has operating and finance leases for mining equipment, office equipment and office space with remaining lease terms ranging from less than one year to approximately six years. Some of these leases include both lease and non-lease components which are accounted for as a single lease component as the Company has elected the practical expedient to combine these components for all leases. As most of the leases do not provide an implicit rate, the Company calculated the Right-of-use (“ROU”) assets and lease liabilities using its’ secured incremental borrowing rate at the lease commencement date.

As of December 31, 2022 and December 31, 2021, the Company had the following ROU assets and lease liabilities within the Company’s Consolidated Balance Sheets:

		December 31, 2022	December 31, 2021
Assets	Balance Sheet Classification		
Operating lease right-of-use assets	Other noncurrent assets	\$ 12,106	\$ 14,646
Financing lease right-of-use assets	Other noncurrent assets	2,918	4,215
Total Lease Assets		<u>\$ 15,024</u>	<u>\$ 18,861</u>
Liabilities	Balance Sheet Classification		
Financing lease liabilities - current	Accrued expenses and other current liabilities	\$ 977	\$ 917
Operating lease liabilities - current	Accrued expenses and other current liabilities	2,722	2,606
Financing lease liabilities - long-term	Other noncurrent liabilities	3,121	4,097
Operating lease liabilities - long-term	Other noncurrent liabilities	9,993	12,713
		<u>\$ 16,813</u>	<u>\$ 20,333</u>
Weighted average remaining lease term in years			
Operating leases		4.14	5.14
Finance leases		2.25	3.25
Weighted average discount rate			
Operating leases		5.5%	5.5%
Finance leases		6.4%	6.4%

Information related to leases was as follows:

	<u>Year Ended December 31,</u>	
	<u>2022</u>	<u>2021</u>
	(In thousands)	
Operating lease information:		
Operating lease cost	\$ 3,323	\$ 3,364
Operating cash flows from operating leases	3,389	3,377
Financing lease information:		
Financing lease cost	\$ 1,572	\$ 1,572
Operating cash flows from financing leases	1,210	1,210

Future minimum lease payments under non-cancellable leases as of December 31, 2022 were as follows:

<u>Year</u>	<u>Operating Leases</u>	<u>Finance Leases</u>
	<u>(In thousands)</u>	
2023	\$ 3,356	\$ 1,210
2024	3,200	1,210
2025	3,185	2,111
2026	3,080	—
2027	1,533	—
Thereafter	—	—
Total minimum lease payments	\$ 14,354	\$ 4,531
Less imputed interest	(1,639)	(433)
Total lease liabilities	<u>\$ 12,715</u>	<u>\$ 4,098</u>

Rental expense, including amounts related to these operating leases and other shorter-term arrangements, amounted to \$11.5 million in 2022, \$9.2 million in 2021 and \$8.6 million in 2020.

Royalties are paid to lessors either as a fixed price per ton or as a percentage of the gross selling price of the mined coal. Royalties under the majority of the Company's significant leases are paid on the percentage of gross selling price basis. Royalty expense, including production royalties, was \$189.7 million in 2022, \$127.8 million in 2021, and \$103.7 million in 2020.

As of December 31, 2022, certain of the Company's lease obligations were secured by outstanding surety bonds totaling \$31.8 million.

23. Risk Concentrations

Credit Risk and Major Customers

The Company has a formal written credit policy that establishes procedures to determine creditworthiness and credit limits for trade customers and counterparties in the over-the-counter coal market. Generally, credit is extended based on an evaluation of the customer's financial condition. Collateral is not generally required, unless credit cannot be established. Credit losses are provided for in the financial statements and historically have been minimal.

The Company markets its thermal coal principally to domestic and foreign electric utilities and its metallurgical coal to domestic and foreign steel producers. As of December 31, 2022 and 2021, accounts receivable from sales of thermal coal of \$94.1 million and \$72.8 million, respectively, represented 40% and 22% of total trade receivables at each date. As of December 31, 2022 and 2021, accounts receivable from sales of metallurgical-quality coal of \$142.9 million and \$251.5 million, respectively, represented 60% and 78% of total trade receivables at each date.

The Company uses shipping destination as the basis for attributing revenue to individual countries. Because title may transfer on brokered transactions at a point that does not reflect the end usage point, they are reflected as exports,

and attributed to an end delivery point if that knowledge is known to the Company. The Company's foreign revenues by geographical location are as follows:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
(In thousands)			
Europe	\$ 939,955	\$ 592,702	\$ 289,176
Asia	1,210,855	446,724	138,086
Central and South America	160,642	109,613	56,905
Africa	—	—	12,763
Total	<u>\$ 2,311,452</u>	<u>\$ 1,149,039</u>	<u>\$ 496,930</u>

The Company is committed under long-term contracts to supply thermal coal that meets certain quality requirements at specified prices. These prices are generally adjusted based on market indices. Quantities sold under some of these contracts may vary from year to year within certain limits at the option of the customer based on their requirements. The Company sold approximately 78.3 million tons of coal in 2022. Approximately 68% of this tonnage (representing approximately 36% of the Company's revenues) was sold under long-term contracts (contracts having a term of greater than one year). Long-term contracts range in remaining life from one to five years.

Third-party sources of coal

The Company purchases coal from third parties that it sells to customers. Factors beyond the Company's control could affect the availability of coal purchased by the Company. Disruptions in the quantities of coal purchased by the Company could impair its ability to fill customer orders or require it to purchase coal from other sources at prevailing market prices in order to satisfy those orders.

Transportation

The Company depends upon barge, rail, truck and belt transportation systems to deliver coal to its customers. Disruption of these transportation services due to weather-related problems, mechanical difficulties, strikes, lockouts, bottlenecks, and other events could temporarily impair the Company's ability to supply coal to its customers. In the past, disruptions in rail service have resulted in missed shipments and production interruptions.

24. Revenue Recognition

ASC 606-10-50-5 requires that entities disclose disaggregated revenue information in categories (such as type of good or service, geography, market, type of contract, etc.) that depict how the nature, amount, timing, and uncertainty of revenue and cash flow are affected by economic factors. ASC 606-10-55-89 explains that the extent to which an entity's revenue is disaggregated depends on the facts and circumstances that pertain to the entity's contracts with customers and that some entities may need to use more than one type of category to meet the objective for disaggregating revenue.

In general, the Company's business segmentation is aligned according to the nature and economic characteristics of its coal and customer relationships and provides meaningful disaggregation of each segment's results. The Company has further disaggregated revenue between North America and Seaborne revenues which depicts the pricing and contract differences between the two. North America revenue is characterized by contracts with a term of one year or longer and typically the pricing is fixed; whereas Seaborne revenue generally is derived by spot or short term contracts with an indexed based pricing mechanism.

	MET	Thermal	Corporate, Other and Eliminations	Consolidated
			(in thousands)	
Year Ended December 31, 2022				
North America revenues	\$ 232,831	\$ 1,180,310	\$ —	\$ 1,413,141
Seaborne revenues	1,924,879	386,573	—	2,311,452
Total revenues	<u>\$ 2,157,710</u>	<u>\$ 1,566,883</u>	<u>\$ —</u>	<u>\$ 3,724,593</u>
Year Ended December 31, 2021				
North America revenues	\$ 163,833	\$ 893,741	\$ 1,429	\$ 1,059,003
Seaborne revenues	985,300	163,739	—	1,149,039
Total revenues	<u>\$ 1,149,133</u>	<u>\$ 1,057,480</u>	<u>\$ 1,429</u>	<u>\$ 2,208,042</u>
Year Ended December 31, 2020				
North America revenues	\$ 173,508	\$ 772,730	\$ 24,424	\$ 970,662
Seaborne revenues	468,028	28,902	—	496,930
Total revenues	<u>\$ 641,536</u>	<u>\$ 801,632</u>	<u>\$ 24,424</u>	<u>\$ 1,467,592</u>

As of December 31, 2022, the Company has outstanding performance obligations for approximately 75.4 million tons of coal for 2023 representing 68.1 million tons of fixed price contracts and 7.3 million tons of variable price contracts. Additionally, the Company has outstanding performance obligations of approximately 66.3 million tons in periods beyond 2023 comprised of 63.5 million tons of fixed price contracts and 2.8 million tons of variable price contracts.

25. Commitments and Contingencies

The Company accrues for cost related to contingencies when a loss is probable and the amount is reasonably determinable. Disclosure of contingencies is included in the financial statements when it is at least reasonably possible that a material loss or an additional material loss in excess of amounts already accrued may be incurred.

The Company is a party to numerous claims and lawsuits with respect to various matters. As of December 31, 2022 and 2021, the Company had accrued \$2.0 million and \$0.1 million, respectively, for all legal matters, all classified as current. The ultimate resolution of any such legal matter could result in outcomes which may be materially different from amounts the Company has accrued for such matters. The Company believes it has recorded adequate reserves for these matters.

In the normal course of business, the Company is a party to certain financial instruments with off-balance sheet risk, such as bank letters of credit, performance or surety bonds, and other guarantees and indemnities related to the obligations of affiliated entities which are not reflected in the Company's Consolidated Balance Sheets. However, the underlying liabilities that they secure, such as asset retirement obligations, workers' compensation liabilities, and other obligations, are reflected in the Company's Consolidated Balance Sheets. As of December 31, 2022, the Company had outstanding surety bonds with a face amount of \$545.9 million to secure various obligations and commitments and \$68.0 million of letters of credit under its Securitization and Inventory Facilities used to collateralize certain obligations. The Company had posted \$5.6 million in cash collateral related to various obligations; this amount is recorded within "Other noncurrent assets" on the Consolidated Balance Sheets.

As of December 31, 2022, the Company's reclamation-related obligations of \$244.4 million were supported by surety bonds of \$457.1 million; and the Company has posted \$0.6 million in cash collateral related to reclamation surety bonds. This amount is recorded within "Other noncurrent assets" on the Consolidated Balance Sheets. Additionally,

through December 31, 2022, the Company has contributed \$136.0 million to a fund that will serve to defease the long-term asset retirement obligation for its thermal asset base; this amount is recorded as “Fund for asset retirement obligations” on the Consolidated Balance Sheets. The funds will be utilized for final mine closure reclamation activities.

The Company has unconditional purchase obligations relating to purchases of coal, materials and supplies and capital commitments, other than reserve acquisitions, and is also a party to transportation capacity commitments. The future commitments under these agreements total \$219.0 million in 2023, and is immaterial thereafter.

26. Segment Information

On December 31, 2020, the Company sold its Viper operation. As a result, the Company revised its reportable segments beginning in the first quarter of 2021 to reflect the manner in which the chief operating decision maker (CODM) views the Company’s businesses going forward for purposes of reviewing performance, allocating resources and assessing future prospects and strategic execution. Prior to the first quarter of 2021, the Company had three reportable segments: MET, Powder River Basin (PRB), and Other Thermal. After the divestment of Viper, the Company has three remaining active thermal mines: West Elk, Black Thunder, and Coal Creek. With two distinct lines of business, metallurgical and thermal, the movement to two segments aligns with how the Company makes decisions and allocates resources. No changes were made to the MET Segment and the three remaining thermal mines are now reported as the “Thermal Segment”. The prior periods have been recasted to reflect the change in reportable segments.

The Company’s reportable business segments are based on two distinct lines of business, metallurgical and thermal, and may include a number of mine complexes. The Company manages its coal sales by market and coal quality, not by individual mining complex. Geology, coal transportation routes to customers, and regulatory environments also have a significant impact on the Company’s marketing and operations management. Mining operations are evaluated based on Adjusted EBITDA, per-ton cash operating costs (defined as including all mining costs except depreciation, depletion, amortization, accretion on asset retirement obligations, and pass-through transportation expenses, divided by segment tons sold), and on other non-financial measures, such as safety and environmental performance. Adjusted EBITDA is not a measure of financial performance in accordance with generally accepted accounting principles, and items excluded from Adjusted EBITDA are significant in understanding and assessing the Company’s financial condition. Therefore, Adjusted EBITDA should not be considered in isolation, nor as an alternative to net income (loss), income (loss) from operations, cash flows from operations or as a measure of our profitability, liquidity or performance under generally accepted accounting principles. The Company uses Adjusted EBITDA to measure the operating performance of its segments and allocate resources to the segments. Furthermore, analogous measures are used by industry analysts and investors to evaluate the Company’s operating performance. Investors should be aware that the Company’s presentation of Adjusted EBITDA may not be comparable to similarly titled measures used by other companies. The Company reports its results of operations primarily through the following reportable segments: Metallurgical (MET) segment, containing the Company’s metallurgical operations in West Virginia, and the Thermal segment containing the Company’s thermal operations in Wyoming and Colorado.

In November of 2021, the Company sold its equity investment Knight Hawk Holdings, LLC, which had been part of its Corporate, Other and Eliminations grouping. For further information on the sale of Knight Hawk Holdings, LLC, please see Note 4 to the Consolidated Financial Statements, “Divestitures.”

On December 31, 2020, the Company sold its Viper operation, which had been part of its Thermal segment. Viper’s results for the full year of 2020 are included in the Company’s full year 2020 results, and in all preceding periods’ results presented herein. For further information on the sale of Viper to Knight Hawk Holdings, LLC, please see Note 4, “Divestitures” to the Consolidated Financial Statements.

Reporting segment results for the year ended December 31, 2022, the year ended December 31, 2021, and the year ended December 31, 2020 are presented below. The Corporate, Other, and Eliminations grouping includes these charges: idle operations; change in fair value of coal derivatives and coal trading activities, net; corporate overhead; land management activities; other support functions; and the elimination of intercompany transactions.

(In thousands)	MET	Thermal	Corporate, Other and Eliminations	Consolidated
Year Ended December 31, 2022				
Revenues	\$ 2,157,710	\$ 1,566,883	\$ —	\$ 3,724,593
Adjusted EBITDA	1,021,932	353,884	(115,384)	1,260,432
Depreciation, depletion and amortization	111,772	20,650	878	133,300
Accretion on asset retirement obligation	2,213	13,775	1,733	17,721
Total assets	1,058,217	381,099	993,792	2,433,108
Capital expenditures	140,031	28,578	4,119	172,728
Year Ended December 31, 2021				
Revenues	\$ 1,149,133	\$ 1,057,480	\$ 1,429	\$ 2,208,042
Adjusted EBITDA	442,830	175,709	(85,109)	533,430
Depreciation, depletion and amortization	99,171	20,231	925	120,327
Accretion on asset retirement obligation	2,030	17,675	2,043	21,748
Total assets	964,761	205,147	947,252	2,117,160
Capital expenditures	227,802	5,949	11,689	245,440
Year Ended December 31, 2020				
Revenues	\$ 641,536	\$ 801,632	\$ 24,424	\$ 1,467,592
Adjusted EBITDA	91,322	34,035	(101,614)	23,743
Depreciation, depletion and amortization	91,202	28,351	1,999	121,552
Accretion on asset retirement obligation	1,943	15,368	2,576	19,887
Total assets	811,605	196,336	714,531	1,722,472
Capital expenditures	269,273	10,719	5,829	285,821

A reconciliation of segment Adjusted EBITDA to net income (loss):

(In thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Year Ended December 31, 2020
Net income (loss)	\$ 1,330,914	\$ 337,573	\$ (344,615)
Provision for (benefit from) income taxes	(251,926)	1,874	(7)
Interest expense, net	13,162	23,344	10,624
Depreciation, depletion and amortization	133,300	120,327	121,552
Accretion on asset retirement obligations	17,721	21,748	19,887
Costs related to proposed joint venture with Peabody Energy	—	—	16,087
Asset impairment and restructuring	—	—	221,380
Gain on property insurance recovery related to Mountain Laurel longwall	—	—	(23,518)
Loss (Gain) on divestitures	—	24,225	(1,505)
Non-service related pension and postretirement benefit costs	2,841	4,339	3,884
Net loss resulting from early retirement of debt	14,420	—	—
Reorganization items, net	—	—	(26)
Adjusted EBITDA	<u>\$ 1,260,432</u>	<u>\$ 533,430</u>	<u>\$ 23,743</u>
EBITDA from idled or otherwise disposed operations	(828)	2,469	15,858
Selling, general and administrative expenses	105,355	92,342	82,397
Other	10,857	(9,702)	3,359
Segment Adjusted EBITDA from coal operations	<u>\$ 1,375,816</u>	<u>\$ 618,539</u>	<u>\$ 125,357</u>

27. Subsequent Event

On February 16, 2023, the Company announced the board approval of a dividend of \$3.11 per share for stockholders of record on February 28, 2023, with payment date of March 15, 2023. The dividend consists of a fixed component of \$0.25 per share and a variable component of \$2.86 per share.

Schedule II

Arch Resources, Inc. and Subsidiaries

Valuation and Qualifying Accounts

	Balance at Beginning of Year	Additions (Reductions) Charged to Costs and Expenses	Charged to Other Accounts <small>(in thousands)</small>	Deductions ^(a)	Balance at End of Year
Year Ended December 31, 2022					
Reserves deducted from asset accounts:					
Accounts receivable and other receivables	\$ 10,636	—	—	—	\$ 10,636
Current assets — supplies and inventory	2,249	314	—	124	2,439
Deferred income taxes	504,392	(420,688)	—	—	83,704
Year Ended December 31, 2021					
Reserves deducted from asset accounts:					
Accounts receivable and other receivables	\$ 10,636	—	—	—	\$ 10,636
Current assets — supplies and inventory	574	1,860	—	185	2,249
Deferred income taxes	573,995	(69,603)	—	—	504,392
Year Ended December 31, 2020					
Reserves deducted from asset accounts:					
Accounts receivable and other receivables	\$ 10,636	—	—	—	\$ 10,636
Current assets — supplies and inventory	2,216	477	(137) ^(b)	1,982	574
Deferred income taxes	506,316	76,524	(8,845) ^(c)	—	573,995

(a) Reserves utilized, unless otherwise indicated.

(b) Disposition of subsidiaries.

(c) Recorded through equity.

INDEMNIFICATION AND ADVANCEMENT AGREEMENT

This Indemnification and Advancement Agreement (“Agreement”) is made as of _____, 20__ by and between Arch Resources, Inc., a Delaware corporation (the “Company”), and _____, [a member of the Board of Directors/an officer] of the Company (“Indemnitee”). This Agreement supersedes and replaces any and all previous Agreements between the Company and Indemnitee covering indemnification and advancement of expenses.

RECITALS

WHEREAS, the Board of Directors of the Company (the “Board”) believes that highly competent persons have become more reluctant to serve publicly-held corporations as directors or officers unless they are provided with adequate protection through insurance or adequate indemnification and advancement of expenses against inordinate risks of claims and actions against them arising out of their service to and activities on behalf of the corporation;

WHEREAS, the Board has determined that, in order to attract and retain qualified individuals, the Company should maintain on an ongoing basis, at its sole expense, liability insurance to protect persons serving the Company and its subsidiaries from certain liabilities. Although the furnishing of such insurance has been a customary and widespread practice among United States-based corporations and other business enterprises, the Company believes that, given market conditions and trends, such insurance may be available to it in the future only at higher premiums and with more exclusions. At the same time, directors and officers are being increasingly subjected to expensive and time-consuming litigation relating to, among other things, matters that traditionally would have been brought only against the Company or business enterprise itself. The Company’s Bylaws require indemnification of the officers and directors of the Company and the Company’s Certificate of Incorporation provides for limitation of liability for directors. Indemnitee may also be entitled to indemnification pursuant to the General Corporation Law of the State of Delaware (the “DGCL”). The Bylaws and the DGCL expressly provide that the indemnification provisions set forth therein are not exclusive, and thereby contemplate that contracts may be entered into between the Company and members of the board of directors and officers with respect to indemnification and advancement of expenses;

WHEREAS, the uncertainties relating to such insurance, to indemnification, and to advancement of expenses may increase the difficulty of attracting and retaining such persons;

WHEREAS, the Board has determined that the increased difficulty in attracting and retaining such persons is detrimental to the best interests of the Company and its stockholders and that the Company should act to assure such persons that there will be increased certainty of such protection in the future;

WHEREAS, it is reasonable, prudent and necessary for the Company contractually to obligate itself to indemnify, and to advance expenses on behalf of, such persons to the fullest extent permitted by applicable law so that they will serve or continue to serve the Company free from undue concern that they will not be so indemnified;

WHEREAS, this Agreement is a supplement to and in furtherance of the Bylaws, Certificate of Incorporation and any resolutions adopted pursuant thereto, as well as any rights of Indemnitee under any directors' and officers' liability insurance policy, and is not a substitute therefor, and does not diminish or abrogate any rights of Indemnitee thereunder; and

WHEREAS, Indemnitee does not regard the protection available under the Bylaws and insurance as adequate in the present circumstances, and may not be willing to serve or continue to serve as an officer or director without adequate additional protection, and the Company desires Indemnitee to serve or continue to serve in such capacity. Indemnitee is willing to serve, continue to serve and to take on additional service for or on behalf of the Company on the condition that Indemnitee be so indemnified and advanced expenses.

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

Section 1. Services to the Company. Indemnitee agrees to serve[, or to continue to serve] as [a/an] [director/officer] of the Company. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law). This Agreement does not create any obligation on the Company to continue Indemnitee in such position and is not an employment contract between the Company (or any of its subsidiaries or any Enterprise) and Indemnitee.

Section 2. Definitions. As used in this Agreement:

(a) "Agent" means any person who is authorized by the Company or an Enterprise to act for or represent the interests of the Company or an Enterprise, respectively.

(b) A "Change in Control" occurs upon the earliest to occur after the date of this Agreement of any of the following events:

i. Acquisition of Stock by Third Party. Any Person (as defined below) is or becomes the Beneficial Owner (as defined below), directly or indirectly, of securities of the Company representing fifteen percent (15%) or more of the combined voting power of the Company's then outstanding securities unless the change in relative beneficial ownership of the Company's securities by any Person results solely from a reduction in the aggregate number of outstanding shares of securities entitled to vote generally in the election of directors;

ii. Change in Board of Directors. During any period of two (2) consecutive years (not including any period prior to the execution of this Agreement), individuals who at the beginning of such period constitute the Board, and any new director (other than a director designated by a person who has entered into an agreement with the Company to effect a transaction described in Sections 2(b)(i), 2(b)(iii) or 2(b)(iv)) whose election by the Board or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved, cease for any reason to constitute at least a majority of the members of the Board;

iii. Corporate Transactions. The effective date of a merger or consolidation of the Company with any other entity, other than a merger or consolidation which would result in the voting securities of the Company outstanding immediately prior to such merger or consolidation continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than 50% of the combined voting power of the voting securities of the surviving entity outstanding immediately after such merger or consolidation and with the power to elect at least a majority of the board of directors or other governing body of such surviving entity;

iv. Liquidation. The approval by the stockholders of the Company of a complete liquidation of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company's assets; and

v. Other Events. There occurs any other event of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or a response to any similar item on any similar schedule or form) promulgated under the Exchange Act (as defined below), whether or not the Company is then subject to such reporting requirement.

vi. For purposes of this Section 2(b), the following terms have the following meanings:

- 1 "Exchange Act" means the Securities Exchange Act of 1934, as amended from time to time.
- 2 "Person" has the meaning as set forth in Sections 13(d) and 14(d) of the Exchange Act; provided, however, that Person excludes (i) the Company, (ii) any trustee or other fiduciary holding securities under an employee benefit plan of the Company, and (iii) any entity owned, directly or indirectly, by the stockholders of the Company in substantially the same proportions as their ownership of stock of the Company.
- 3 "Beneficial Owner" has the meaning given to such term in Rule 13d-3 under the Exchange Act; provided, however, that Beneficial Owner excludes any Person otherwise becoming a Beneficial Owner by reason of the stockholders of the Company approving a merger of the Company with another entity.

(c) "Corporate Status" describes the status of a person who is or was acting as a director, officer, employee, fiduciary, or Agent of the Company or an Enterprise.

(d) "Disinterested Director" means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

(e) “Enterprise” means any other corporation, limited liability company, partnership, joint venture, trust, employee benefit plan or other entity for which Indemnitee is or was serving at the request of the Company as a director, officer, employee, fiduciary, or Agent.

(f) “Expenses” includes all reasonable attorneys’ fees, retainers, court costs, transcript costs, fees and other costs of experts and other professionals, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, any federal, state, local or foreign taxes imposed on Indemnitee as a result of the actual or deemed receipt of any payments under this Agreement, ERISA excise taxes and penalties, and all other disbursements, obligations, or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, investigating, being or preparing to be a witness in, or otherwise participating in, a Proceeding. Expenses also include (i) Expenses incurred in connection with any appeal resulting from any Proceeding, including, without limitation, the premium, security for, and other costs relating to any cost bond, supersedeas bond, or other appeal bond or its equivalent, and (ii) for purposes of Section 14(d) only, Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee’s rights under this Agreement, by litigation or otherwise. Expenses, however, do not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.

(g) “Independent Counsel” means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any matter material to either such party (other than with respect to matters concerning the Indemnitee under this Agreement, or of other indemnitees under similar indemnification agreements), or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” does not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee’s rights under this Agreement. The Company agrees to pay the reasonable fees and expenses of the Independent Counsel.

(h) The term “Proceeding” includes any threatened, pending or completed action, suit, claim, counterclaim, cross claim, arbitration, mediation, alternate dispute resolution mechanism, investigation, inquiry, administrative hearing or any other actual, threatened or completed proceeding, whether brought in the right of the Company or otherwise and whether of a civil, criminal, administrative, legislative, regulatory, or investigative (formal or informal) nature, including any appeal therefrom, in which Indemnitee was, is or will be involved as a party, potential party, non-party witness or otherwise by reason of Indemnitee’s Corporate Status or by reason of any action taken by Indemnitee (or a failure to take action by Indemnitee) or of any action (or failure to act) on Indemnitee’s part while acting pursuant to Indemnitee’s Corporate Status, in each case whether or not serving in such capacity at the time any liability or Expense is incurred for which indemnification, reimbursement, or advancement of Expenses can be provided under this Agreement. A Proceeding also includes a situation the Indemnitee believes in good faith may lead to or culminate in the institution of a Proceeding.

Section 3. Indemnity in Third-Party Proceedings. The Company will indemnify Indemnitee in accordance with the provisions of this Section 3 if Indemnitee is, or is threatened to

be made, a party to or a participant in any Proceeding, other than a Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 3, the Company will indemnify Indemnitee to the fullest extent permitted by applicable law against all Expenses, judgments, fines and amounts paid in settlement (including all interest, assessments and other charges paid or payable in connection with or in respect of such Expenses, judgments, fines and amounts paid in settlement) actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company and, in the case of a criminal Proceeding had no reasonable cause to believe that Indemnitee's conduct was unlawful.

Section 4. Indemnity in Proceedings by or in the Right of the Company. The Company will indemnify Indemnitee in accordance with the provisions of this Section 4 if Indemnitee is, or is threatened to be made, a party to or a participant in any Proceeding by or in the right of the Company to procure a judgment in its favor. Pursuant to this Section 4, the Company will indemnify Indemnitee to the fullest extent permitted by applicable law against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with such Proceeding or any claim, issue or matter therein, if Indemnitee acted in good faith and in a manner Indemnitee reasonably believed to be in or not opposed to the best interests of the Company. The Company will not indemnify Indemnitee for Expenses under this Section 4 related to any claim, issue or matter in a Proceeding for which Indemnitee has been finally adjudged by a court to be liable to the Company, *unless*, and only to the extent that, the Court of Chancery of the state of Delaware (the "Delaware Court") or any court in which the Proceeding was brought determines upon application by Indemnitee that, despite the adjudication of liability but in view of all the circumstances of the case, Indemnitee is fairly and reasonably entitled to indemnification.

Section 5. Indemnification for Expenses of a Party Who is Wholly or Partly Successful. To the fullest extent permitted by applicable law, the Company will indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with any Proceeding to the extent that Indemnitee is successful, on the merits or otherwise. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company will indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with or related to each successfully resolved claim, issue or matter to the fullest extent permitted by law. For purposes of this Section 5 and, without limitation, the termination of any claim, issue or matter in such a Proceeding by dismissal, with or without prejudice, will be deemed to be a successful result as to such claim, issue or matter.

Section 6. Indemnification for Expenses of a Witness. To the fullest extent permitted by applicable law, the Company will indemnify Indemnitee against all Expenses actually and reasonably incurred by Indemnitee or on Indemnitee's behalf in connection with any Proceeding to which Indemnitee is not a party but to which Indemnitee is a witness, deponent, interviewee, or otherwise asked to participate or provide information.

Section 7. Partial Indemnification. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for some or a portion of Expenses, but not,

however, for the total amount thereof, the Company will indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

Section 8. Additional Indemnification. Notwithstanding any limitation in Sections 3, 4, or 5, the Company will indemnify Indemnitee to the fullest extent permitted by applicable law (including, but not limited to, the DGCL and any amendments to or replacements of the DGCL adopted after the date of this Agreement that expand the Company's ability to indemnify its officers and directors) if Indemnitee is a party to or threatened to be made a party to any Proceeding (including a Proceeding by or in the right of the Company to procure a judgment in its favor).

Section 9. Exclusions. Notwithstanding any provision in this Agreement, the Company is not obligated under this Agreement to make any indemnification payment to Indemnitee in connection with any Proceeding:

(a) for which payment has actually been made to or on behalf of Indemnitee under any insurance policy or other indemnity provision, except to the extent provided in Section 16(b) and except with respect to any excess beyond the amount paid under any insurance policy or other indemnity provision; or

(b) for (i) an accounting of profits made from the purchase and sale (or sale and purchase) by Indemnitee of securities of the Company within the meaning of Section 16(b) of the Exchange Act (as defined in Section 2(b) hereof) or similar provisions of state statutory law or common law, (ii) any reimbursement of the Company by the Indemnitee of any bonus or other incentive-based or equity-based compensation or of any profits realized by the Indemnitee from the sale of securities of the Company, as required in each case under the Exchange Act (including any such reimbursements that arise from an accounting restatement of the Company pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), or the payment to the Company of profits arising from the purchase and sale by Indemnitee of securities in violation of Section 306 of the Sarbanes-Oxley Act), or (iii) any reimbursement of the Company by Indemnitee of any compensation pursuant to any compensation recoupment or clawback policy adopted by the Board or the compensation committee of the Board, including, but not limited to, any such policy adopted to comply with stock exchange listing requirements implementing Section 10D of the Exchange Act; or

(c) initiated by Indemnitee, including any Proceeding (or any part of any Proceeding) initiated by Indemnitee against the Company or its directors, officers, employees or other indemnitees, unless (i) the Proceeding or part of any Proceeding is to enforce Indemnitee's rights to indemnification or advancement, of Expenses, including a Proceeding (or any part of any Proceeding) initiated pursuant to Section 14 of this Agreement, (ii) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation or (iii) the Company provides the indemnification, in its sole discretion, pursuant to the powers vested in the Company under applicable law.

Section 10. Advances of Expenses.

(a) The Company will advance, to the extent not prohibited by law, the Expenses incurred by Indemnitee in connection with any Proceeding (or any part of any

Proceeding) not initiated by Indemnitee or any Proceeding (or any part of any Proceeding) initiated by Indemnitee if (i) the Proceeding or part of any Proceeding is to enforce Indemnitee's rights to obtain indemnification or advancement of Expenses from the Company or Enterprise, including a proceeding initiated pursuant to Section 14 or (ii) the Board authorized the Proceeding (or any part of any Proceeding) prior to its initiation. The Company will advance the Expenses within ten (10) days after the receipt by the Company of a statement or statements requesting such advances from time to time, whether prior to or after final disposition of any Proceeding.

(b) Advances will be unsecured and interest free. Indemnitee hereby undertakes to repay any amounts so advanced (without interest) to the extent that it is ultimately determined that Indemnitee is not entitled to be indemnified by the Company, thus Indemnitee qualifies for advances upon the execution of this Agreement and delivery to the Company. No other form of undertaking is required other than the execution of this Agreement. The Company will make advances without regard to Indemnitee's ability to repay the Expenses and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement.

Section 11. Procedure for Notification of Claim for Indemnification or Advancement.

(a) Indemnitee will notify the Company in writing of any Proceeding with respect to which Indemnitee intends to seek indemnification or advancement of Expenses hereunder as soon as reasonably practicable following the receipt by Indemnitee of written notice thereof. Indemnitee will include in the written notification to the Company a description of the nature of the Proceeding and the facts underlying the Proceeding and provide such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of such Proceeding. Indemnitee's failure to notify the Company will not relieve the Company from any obligation it may have to Indemnitee under this Agreement, and any delay in so notifying the Company will not constitute a waiver by Indemnitee of any rights under this Agreement. The Secretary of the Company will, promptly upon receipt of such a request for indemnification or advancement, advise the Board in writing that Indemnitee has requested indemnification or advancement.

(b) The Company will be entitled to participate in the Proceeding at its own expense.

Section 12. Procedure Upon Application for Indemnification.

(a) Unless a Change of Control has occurred, the determination of Indemnitee's entitlement to indemnification will be made:

i. by a majority vote of the Disinterested Directors, even though less than a quorum of the Board;

ii. by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum of the Board; or

iii. if there are no such Disinterested Directors or, if such Disinterested Directors so direct, by written opinion provided by Independent Counsel selected by the Board;

(b) If a Change in Control has occurred, the determination of Indemnitee's entitlement to indemnification will be made by written opinion provided by Independent Counsel selected by Indemnitee (unless Indemnitee requests such selection be made by the Board).

(c) The party selecting Independent Counsel pursuant to subsection (a)(iii) or (b) of this Section 12 will provide written notice of the selection to the other party. The notified party may, within ten (10) days after receiving written notice of the selection of Independent Counsel, deliver to the selecting party a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 2 of this Agreement, and the objection will set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person so selected will act as Independent Counsel. If such written objection is so made and substantiated, the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or the Delaware Court has determined that such objection is without merit. If, within thirty (30) days after the later of submission by Indemnitee of a written request for indemnification pursuant to Section 11(a) hereof and the final disposition of the Proceeding, Independent Counsel has not been selected or, if selected, any objection to has not been resolved, either the Company or Indemnitee may petition the Delaware Court for resolution of any objection made by the Company or Indemnitee to the other's selection or Independent Counsel and/or for the appointment as Independent Counsel of a person selected by such court or by such other person as such court designates. Upon the due commencement of any judicial proceeding or arbitration pursuant to Section 14(a) of this Agreement, Independent Counsel will be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

(d) Indemnitee will cooperate with the person, persons or entity making the determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. The Company will advance and pay any Expenses incurred by Indemnitee in so cooperating with the person, persons or entity making the indemnification determination irrespective of the determination as to Indemnitee's entitlement to indemnification and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom. The Company promptly will advise Indemnitee in writing of the determination that Indemnitee is or is not entitled to indemnification, including a description of any reason or basis for which indemnification has been denied and providing a copy of any written opinion provided to the Board by Independent Counsel.

(e) If it is determined that Indemnitee is entitled to indemnification, the Company will make payment to Indemnitee within ten (10) days after such determination.

Section 13. Presumptions and Effect of Certain Proceedings.

(a) In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination will, to the fullest extent not prohibited by law, presume Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 11(a) of this Agreement, and the Company will, to the fullest extent not prohibited by law, have the burden of proof to overcome that presumption. Neither the failure of the Company (including by its directors or Independent Counsel) to have made a determination prior to the commencement of any action pursuant to this Agreement that indemnification is proper in the circumstances because Indemnitee has met the applicable standard of conduct, nor an actual determination by the Company (including by its directors or Independent Counsel) that Indemnitee has not met such applicable standard of conduct, will be a defense to the action or create a presumption that Indemnitee has not met the applicable standard of conduct.

(b) If the determination of the Indemnitee's entitlement to indemnification has not been made pursuant to Section 12 within sixty (60) days after the later of (i) receipt by the Company of Indemnitee's request for indemnification pursuant to Section 11(a) and (ii) the final disposition of the Proceeding for which Indemnitee requested Indemnification (the "Determination Period"), the requisite determination of entitlement to indemnification will, to the fullest extent not prohibited by law, be deemed to have been made and Indemnitee will be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law. The Determination Period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith requires such additional time for the obtaining or evaluating of documentation and/or information relating thereto; and provided, further, the Determination Period will not apply if the determination of entitlement to indemnification is to be made by Independent Counsel.

(c) The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, will not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which Indemnitee reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that Indemnitee's conduct was unlawful.

(d) For purposes of any determination of good faith, Indemnitee will be deemed to have acted in good faith if Indemnitee acted based on the records or books of account of the Company, its subsidiaries, or an Enterprise, including financial statements, or on information supplied to Indemnitee by the directors or officers of the Company, its subsidiaries, or an Enterprise in the course of their duties, or on the advice of legal counsel for the Company, its subsidiaries, or an Enterprise or on information or records given or reports made to the Company or an Enterprise by an independent certified public accountant or by an appraiser, financial advisor or other expert selected with reasonable care by or on behalf of the Company, its subsidiaries, or an Enterprise. Further, Indemnitee will be deemed to have acted in a manner "not opposed to the best interests of the Company," as referred to in this Agreement if Indemnitee acted in good faith

and in a manner Indemnitee reasonably believed to be in the best interests of the participants and beneficiaries of an employee benefit plan. The provisions of this Section 13(d) is not exclusive and do not limit in any way the other circumstances in which the Indemnitee may be deemed to have met the applicable standard of conduct set forth in this Agreement.

(e) The knowledge and/or actions, or failure to act, of any director, officer, trustee, partner, managing member, fiduciary, agent or employee of the Enterprise may not be imputed to Indemnitee for purposes of determining Indemnitee's right to indemnification under this Agreement.

Section 14. Remedies of Indemnitee.

(a) Indemnitee may commence litigation against the Company in the Delaware Court to obtain indemnification or advancement of Expenses provided by this Agreement in the event that (i) a determination is made pursuant to Section 12 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) the Company does not advance Expenses pursuant to Section 10 of this Agreement, (iii) the determination of entitlement to indemnification is not made pursuant to Section 12 of this Agreement within the Determination Period, (iv) the Company does not indemnify Indemnitee pursuant to Section 5 or 6 or the second to last sentence of Section 12(d) of this Agreement within thirty (30) days after receipt by the Company of a written request therefor, (v) the Company does not indemnify Indemnitee pursuant to Section 3, 4, 7, or 8 of this Agreement within thirty (30) days after a determination has been made that Indemnitee is entitled to indemnification, or (vi) in the event that the Company or any other person takes or threatens to take any action to declare this Agreement void or unenforceable, or institutes any litigation or other action or Proceeding designed to deny, or to recover from, the Indemnitee the benefits provided or intended to be provided to the Indemnitee hereunder. Alternatively, the Indemnitee or Company, at either the Indemnitee's or Company's option, may seek an award in arbitration to be conducted by a single arbitrator pursuant to the Commercial Arbitration Rules of the American Arbitration Association. The Company will not oppose Indemnitee's right to seek any such adjudication or award in arbitration.

(b) If a determination is made pursuant to Section 12 of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding or arbitration commenced pursuant to this Section 14 will be conducted in all respects as a *de novo* trial, or arbitration, on the merits and Indemnitee may not be prejudiced by reason of that adverse determination. In any judicial proceeding or arbitration commenced pursuant to this Section 14 the Company will have the burden of proving Indemnitee is not entitled to indemnification or advancement of Expenses, as the case may be, and will not introduce evidence of the determination made pursuant to Section 12 of this Agreement.

(c) If a determination is made pursuant to Section 12 of this Agreement that Indemnitee is entitled to indemnification, the Company will be bound by such determination in any judicial proceeding or arbitration commenced pursuant to this Section 14, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) a prohibition of such indemnification under applicable law.

(d) The Company is, to the fullest extent not prohibited by law, precluded from asserting in any judicial proceeding or arbitration commenced pursuant to this Section 14 that the procedures and presumptions of this Agreement are not valid, binding and enforceable and will stipulate in any such court or before any such arbitrator that the Company is bound by all the provisions of this Agreement.

(e) It is the intent of the Company that, to the fullest extent permitted by law, the Indemnitee not be required to incur legal fees or other Expenses associated with the interpretation, enforcement or defense of Indemnitee's rights under this Agreement by litigation or otherwise because the cost and expense thereof would substantially detract from the benefits intended to be extended to the Indemnitee hereunder. The Company, to the fullest extent permitted by law, will (within ten (10) days after receipt by the Company of a written request therefor) advance to Indemnitee such Expenses which are incurred by Indemnitee in connection with any action concerning this Agreement, Indemnitee's right to indemnification or advancement of Expenses from the Company, or concerning any directors' and officers' liability insurance policies maintained by the Company, and will indemnify Indemnitee against any and all such Expenses unless the court determines that Indemnitee's claims in such action were made in bad faith or were frivolous or are prohibited by law.

Section 15. Non-exclusivity; Survival of Rights; Insurance; Subrogation.

(a) The indemnification and advancement of Expenses provided by this Agreement are not exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the Certificate of Incorporation, the Bylaws, any agreement, a vote of stockholders or a resolution of directors, or otherwise. The indemnification and advancement of Expenses provided by this Agreement may not be limited or restricted by any amendment, alteration or repeal of this Agreement in any way with respect to any action taken or omitted by Indemnitee in Indemnitee's Corporate Status occurring prior to any amendment, alteration or repeal of this Agreement. To the extent that a change in Delaware law, whether by statute or judicial decision, permits greater indemnification or advancement of Expenses than would be afforded currently under the Bylaws, Certificate of Incorporation, or this Agreement, it is the intent of the parties hereto that Indemnitee enjoy by this Agreement the greater benefits so afforded by such change. No right or remedy herein conferred is intended to be exclusive of any other right or remedy, and every other right and remedy is cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, will not prevent the concurrent assertion or employment of any other right or remedy.

(b) To the extent that the Company maintains an insurance policy or policies providing liability insurance for directors, officers, employees, or agents of the Company, the Company will obtain a policy or policies covering Indemnitee to the maximum extent of the coverage available for any such director, officer, employee or agent under such policy or policies, including coverage in the event the Company does not or cannot, for any reason, indemnify or advance Expenses to Indemnitee as required by this Agreement. If, at the time of the receipt of a notice of a claim pursuant to this Agreement, the Company has director and officer liability insurance in effect, the Company will give prompt notice of such claim or of the commencement of a Proceeding, as the case may be, to the insurers in accordance with the procedures set forth in

the respective policies. The Company will thereafter take all reasonable action to cause such insurers to pay, on behalf of the Indemnitee, all amounts payable as a result of such Proceeding in accordance with the terms of such policies. Indemnitee agrees to assist the Company efforts to cause the insurers to pay such amounts and will comply with the terms of such policies, including selection of approved panel counsel, if required.

(c) The Company's obligation to indemnify or advance Expenses hereunder to Indemnitee for any Proceeding concerning Indemnitee's Corporate Status with an Enterprise will be reduced by any amount Indemnitee has actually received as indemnification or advancement of Expenses from such Enterprise. The Company and Indemnitee intend that any such Enterprise (and its insurers) be the indemnitor of first resort with respect to indemnification and advancement of Expenses for any Proceeding related to or arising from Indemnitee's Corporate Status with such Enterprise. The Company's obligation to indemnify and advance Expenses to Indemnitee is secondary to the obligations the Enterprise or its insurers owe to Indemnitee. Indemnitee agrees to take all reasonably necessary and desirable action to obtain from an Enterprise indemnification and advancement of Expenses for any Proceeding related to or arising from Indemnitee's Corporate Status with such Enterprise.

(d) In the event of any payment made by the Company under this Agreement, the Company will be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee from any Enterprise or its insurance carrier. Indemnitee will execute all papers required and take all action necessary to secure such rights, including execution of such documents as are necessary to enable the Company to bring suit to enforce such rights.

Section 16. Duration of Agreement. This Agreement continues until and terminates upon the later of: (a) ten (10) years after the date that Indemnitee ceases to have a Corporate Status, (b) one (1) year after the final termination of any Proceeding then pending in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder and of any Proceeding commenced by Indemnitee pursuant to Section 14 of this Agreement relating thereto, or (c) the date following the expiry of any applicable statute of limitations period. The indemnification and advancement of Expenses rights provided by or granted pursuant to this Agreement are binding upon and enforceable by the parties hereto and their respective successors and assigns (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business or assets of the Company), continue as to an Indemnitee who has ceased to be a director, officer, employee or agent of the Company or of any other Enterprise, and inure to the benefit of Indemnitee and Indemnitee's spouse, assigns, heirs, devisees, executors and administrators and other legal representatives.

Section 17. Severability. If any provision or provisions of this Agreement is held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) will not in any way be affected or impaired thereby and remain enforceable to the fullest extent permitted by law; (b) such provision or provisions will be deemed reformed to the extent necessary to conform to applicable law and to give the maximum effect to the intent of the parties hereto; and (c) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any

Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) will be construed so as to give effect to the intent manifested thereby.

Section 18. Interpretation. Any ambiguity in the terms of this Agreement will be resolved in favor of Indemnitee and in a manner to provide the maximum indemnification and advancement of Expenses permitted by law. The Company and Indemnitee intend that this Agreement provide to the fullest extent permitted by law for indemnification and advancement in excess of that expressly provided, without limitation, by the Certificate of Incorporation, the Bylaws, or Disinterested Directors, or applicable law.

Section 19. Enforcement.

(a) The Company expressly confirms and agrees that it has entered into this Agreement and assumed the obligations imposed on it hereby in order to induce Indemnitee to serve, or continue to serve, as a director or officer of the Company, and the Company acknowledges that Indemnitee is relying upon this Agreement in serving or continuing to serve as a director or officer of the Company.

(b) This Agreement constitutes the entire agreement between the parties hereto with respect to the subject matter hereof and supersedes all prior agreements and understandings, oral, written and implied, between the parties hereto with respect to the subject matter hereof; provided, however, that this Agreement is a supplement to and in furtherance of the Certificate of Incorporation, the Bylaws, any directors' and officers' insurance maintained by the Company and applicable law, and is not a substitute therefor, nor to diminish or abrogate any rights of Indemnitee thereunder.

Section 20. Modification and Waiver. No supplement, modification or amendment of this Agreement is binding unless executed in writing by the parties hereto. No waiver of any of the provisions of this Agreement will be deemed or constitutes a waiver of any other provisions of this Agreement nor will any waiver constitute a continuing waiver.

Section 21. Notice by Indemnitee. Indemnitee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating to any Proceeding or matter which may be subject to indemnification or advancement of Expenses covered hereunder. The failure of Indemnitee to so notify the Company does not relieve the Company of any obligation which it may have to the Indemnitee under this Agreement or otherwise.

Section 22. Notices. All notices, requests, demands and other communications under this Agreement will be in writing and will be deemed to have been duly given if (a) delivered by hand to the other party, (b) sent by reputable overnight courier to the other party or (c) sent by facsimile transmission or electronic mail, with receipt of oral confirmation that such communication has been received:

(a) If to Indemnitee, at the address indicated on the signature page of this Agreement, or such other address as Indemnitee provides to the Company.

(b) If to the Company to:

Arch Resources, Inc.

Address: One CityPlace Drive, Suite 300, St. Louis, Missouri
63141

Attention: [Office of the General Counsel]

Fax: [•]

Email: [•]

or to any other address as may have been furnished to Indemnitee by the Company.

Section 23. Contribution. To the fullest extent permissible under applicable law, if the indemnification provided for in this Agreement is unavailable to Indemnitee for any reason whatsoever, the Company, in lieu of indemnifying Indemnitee, will contribute to the amount incurred by Indemnitee, whether for judgments, fines, penalties, excise taxes, amounts paid or to be paid in settlement and/or for Expenses, in connection with any claim relating to an indemnifiable event under this Agreement, in such proportion as is deemed fair and reasonable in light of all of the circumstances of such Proceeding in order to reflect (i) the relative benefits received by the Company and Indemnitee as a result of the event(s) and/or transaction(s) giving cause to such Proceeding; and/or (ii) the relative fault of the Company (and its directors, officers, employees and agents) and Indemnitee in connection with such event(s) and/or transaction(s).

Section 24. Applicable Law and Consent to Jurisdiction. This Agreement and the legal relations among the parties are governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. Except with respect to any arbitration commenced pursuant to Section 14(a) of this Agreement, the Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action, claim, or proceeding between the parties arising out of or in connection with this Agreement may be brought only in the Delaware Court and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action, claim, or proceeding arising out of or in connection with this Agreement, (iii) waive any objection to the laying of venue of any such action, claim, or proceeding in the Delaware Court, and (iv) waive, and agree not to plead or to make, any claim that any such action, claim, or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

Section 25. Identical Counterparts. This Agreement may be executed in one or more counterparts, each of which will for all purposes be deemed to be an original but all of which together constitutes one and the same Agreement. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

Section 26. Headings. The headings of this Agreement are inserted for convenience only and do not constitute part of this Agreement or affect the construction thereof.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed as of the day and year first above written.

ARCH RESOURCES, INC.

INDEMNITEE

By: _____
Name:
Office:

Name:
Address: _____

Subsidiaries of the Company

The following is a complete list of the direct and indirect subsidiaries of Arch Resources, Inc., a Delaware corporation, including their respective states of incorporation or organization, as of February 16, 2023:

Arch Coal Asia-Pacific PTE. LTD. (Singapore)	100%
Arch of Australia PTY LTD (Australia)	100%
Arch Coal Australia PTY LTD (Australia)	100%
Arch Coal Australia Holdings PTY LTD (Australia)	100%
Arch Coal Europe Limited (Europe)	100%
Arch Coal Operations LLC (Delaware)	42.2%
Catenary Coal Holdings LLC (Delaware)	100%
ICG East Kentucky, LLC (Delaware)	100%
ICG Eastern, LLC (Delaware)	100%
ICG Tygart Valley, LLC (Delaware)	100%
Shelby Run Mining Company, LLC (Delaware)	100%
Hunter Ridge LLC (Delaware)	100%
Bronco Mining Company LLC (West Virginia)	100%
Hawthorne Coal Company LLC (West Virginia)	100%
Hunter Ridge Coal LLC (Delaware)	100%
Juliana Mining Company LLC (West Virginia)	100%
King Knob Coal Co. LLC (West Virginia)	100%
Marine Coal Sales LLC (Delaware)	100%
Melrose Coal Company LLC (West Virginia)	100%
Patriot Mining Company LLC (West Virginia)	100%
Upshur Property LLC (Delaware)	100%
Vindex Energy LLC (West Virginia)	100%
White Wolf Energy LLC (Virginia)	100%
Wolf Run Mining LLC (West Virginia)	100%
The Sycamore Group, LLC (West Virginia)	50%
Mingo Logan Coal LLC (Delaware)	100%
Arch Coal Sales Company, Inc. (Delaware)	100%
Arch Energy Resources, LLC (Delaware)	100%
Maidsville Landing Terminal, LLC	100%
Arch Land LLC (Delaware)	57.6%
Ark Land LLC (Delaware)	100%
Western Energy Resources LLC (Delaware)	100%
Ark Land KH LLC (Delaware)	100%
Ark Land LT LLC (Delaware)	100%
Ark Land WR LLC (Delaware)	100%
Atlantic Holdings JV LLC (Delaware)	100%
Allegheny Land LLC (Delaware)	100%
Arch Coal West, LLC (Delaware)	100%
Arch Reclamation Services LLC (Delaware)	100%
CoalQuest Development LLC (Delaware)	100%
Energy Development LLC (Iowa)	100%
ICG Eastern Land, LLC (Delaware)	100%
ICG Natural Resources, LLC (Delaware)	100%
Mountain Gem Land LLC (West Virginia)	100%
Mountain Mining LLC (Delaware)	100%

Mountaineer Land LLC (Delaware)	100%
Otter Creek Coal, LLC (Delaware)	100%
Arch Receivable Company, LLC (Delaware)	100%
Arch Western Acquisition Corporation (Delaware)	100%
Arch Western Acquisition, LLC (Delaware)	100%
Arch Western Resources, LLC (Delaware)	.5%
Arch Western Resources, LLC (Delaware)	99.5%
Arch of Wyoming, LLC (Delaware)	100%
Arch Western Bituminous Group, LLC (Delaware)	100%
Mountain Coal Company, L.L.C. (Delaware)	100%
Thunder Basin Coal Company, L.L.C. (Delaware)	100%
Triton Coal Company, LLC (Delaware)	100%
ACI Terminal, LLC (Delaware)	100%
Ashland Terminal, Inc. (Delaware)	100%
International Energy Group, LLC (Delaware)	100%
ICG, LLC (Delaware)	100%
Arch Coal Group, LLC (Delaware)	100%
Arch Coal Operations LLC (Delaware)	56.8%
Arch Land LLC (Delaware)	1.4%
ICG Beckley, LLC (Delaware)	100%
Arch Land LLC (Delaware)	41%
Hunter Ridge Holdings, Inc. (Delaware)	100%
Arch Coal Operations LLC (Delaware)	1%
Meadow Coal Holdings, LLC (Delaware)	100%
Prairie Holdings, Inc. (Delaware)	100%

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-214373) pertaining to the Arch Resources, Inc. Omnibus Incentive Plan of our reports dated February 16, 2023, with respect to the consolidated financial statements and schedule of Arch Resources, Inc. and subsidiaries, and the effectiveness of internal control over financial reporting of Arch Resources, Inc. and subsidiaries included in this Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

St. Louis, Missouri

February 16, 2023

WEIR

Weir International, Inc.
Mining, Geology and Energy Consultants

February 14, 2023
Project No. 6355.3
Via Email: SStewart@archrsc.com

Executive Towers West I
1431 Opus Place, Suite 210
Downers Grove, Illinois 60515
USA

Mr. Wm. Scott Stewart Arch
Resources, Inc.
1 CityPlace Drive, Suite 300 St.
Louis, Missouri 63141

Tel: 630-968-5400
Fax: 630-968-5401
weir@weirintl.com

Reference: Consent of Independent Experts

Dear Mr. Stewart:

We hereby consent to the reference to Weir International, Inc. in the Annual Report on Form 10-K of Arch Resources, Inc. for the year ended December 31, 2022.

We further wish to advise that Weir International, Inc. was not employed on a contingent basis and that at the time of preparation of our report, as well as at present, neither Weir International, Inc. nor any of its employees had, or now has, a substantial interest in Arch Resources, Inc. or any of its affiliates or subsidiaries.

Respectfully submitted,

Weir International, Inc.



Fran X. Taglia President



582 Industrial Park Road, Bluefield, VA 24605-9364 ■ Phone 276.322.5467
www.mma1.com ■ info@mma1.com

February 14, 2023

Via Email: SStewart@archrsc.com

Mr. Wm. Scott Stewart
Arch Resources, Inc.
1 CityPlace Drive, Suite 300
St. Louis, Missouri 63141

Reference: Consent of Independent Experts

Dear Mr. Stewart:

We hereby consent to the reference to Marshall Miller & Associates, Inc. in the Annual Report on Form 10-K of Arch Resources, Inc. for the year ended December 31, 2022.

We further wish to advise that Marshall Miller & Associates, Inc. was not employed on a contingent basis and that at the time of preparation of our report, as well as at present, neither Marshall Miller & Associates, Inc. nor any of its employees had, or now has, a substantial interest in Arch Resources, Inc. or any of its affiliates or subsidiaries.

Respectfully submitted,
MARSHALL MILLER & ASSOCIATES, INC.


Steven A. Keim, PhD, PE
President

ENERGY & MINERAL RESOURCES ■ HYDROGEOLOGY & GEOLOGY ■ GEOPHYSICAL LOGGING SERVICES
CARBON MANAGEMENT ■ EXPERT WITNESS TESTIMONY ■ MINING ENGINEERING ■ PETROLEUM ENGINEERING

Power of Attorney

KNOW ALL PERSONS BY THESE PRESENTS: That each of the undersigned directors and/or officers of Arch Resources, Inc., a Delaware corporation ("Arch Resources"), hereby constitutes and appoints Paul A. Lang, Matthew C. Giljum and Rosemary L. Klein, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power to act without the other, to sign Arch Resources' Annual Report on Form 10-K for the year ended December 31, 2022, to be filed with the Securities and Exchange Commission under the provisions of the Securities Exchange Act of 1934, as amended; to file such report and the exhibits thereto and any and all other documents in connection therewith, including without limitation, amendments thereto, with the Securities and Exchange Commission; and to do and perform any and all other acts and things requisite and necessary to be done in connection with the foregoing as fully as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, may lawfully do or cause to be done by virtue hereof.

DATED: February 9, 2023

/s/ Patrick J. Bartels, Jr.

Patrick J. Bartels, Jr.

Director

/s/ James N. Chapman

James N. Chapman

Director

/s/ John W. Eaves

John W. Eaves

Director

/s/ Holly Keller Koepfel

Holly Keller Koepfel

Director

/s/ Patrick A. Kriegshauser

Patrick A. Kriegshauser

Director

/s/ Paul A. Lang

Paul A. Lang

Director

/s/ Richard A. Navarre

Richard A. Navarre

Director

/s/ Peifang (Molly) Zhang

Peifang (Molly) Zhang

Director

Certification

I, Paul A. Lang, certify that:

1. I have reviewed this annual report on Form 10-K of Arch Resources, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Paul A. Lang

Paul A. Lang

Chief Executive Officer, Director

February 16, 2023

Certification

I, Matthew C. Giljum, certify that:

1. I have reviewed this annual report on Form 10-K of Arch Resources, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Matthew C. Giljum

Matthew C. Giljum

Senior Vice President and Chief Financial Officer

February 16, 2023

Certification of Chief Executive Officer of Arch Resources, Inc. Pursuant to 18.U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, Paul A. Lang, Chief Executive Officer of Arch Resources, Inc., certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Annual Report on Form 10-K for the year ended December 31, 2022 (the "Periodic Report") which this statement accompanies fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
- (2) information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of Arch Resources, Inc.

/s/ Paul A. Lang

Paul A. Lang

Chief Executive Officer, Director

February 16, 2023

Certification of Chief Financial Officer of Arch Resources, Inc. Pursuant to 18.U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

I, Matthew C. Giljum, Senior Vice President and Chief Financial Officer of Arch Resources, Inc., certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) the Annual Report on Form 10-K for the year ended December 31, 2022 (the "Periodic Report") which this statement accompanies fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
- (2) information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of Arch Resources, Inc.

/s/ Matthew C. Giljum

Matthew C. Giljum
Senior Vice President and Chief Financial Officer
February 16, 2023

Mine Safety and Health Administration Safety Data

We believe that Arch Resources, Inc. (“Arch Resources”) is one of the safest coal mining companies in the world. Safety is a core value at Arch Resources and at our subsidiary operations. We have in place a comprehensive safety program that includes extensive health & safety training for all employees, site inspections, emergency response preparedness, crisis communications training, incident investigation, regulatory compliance training and process auditing, as well as an open dialogue between all levels of employees. The goals of our processes are to eliminate exposure to hazards in the workplace, ensure that we comply with all mine safety regulations, and support regulatory and industry efforts to improve the health and safety of our employees along with the industry as a whole.

The operation of our mines is subject to regulation by the Federal Mine Safety and Health Administration (MSHA) under the Federal Mine Safety and Health Act of 1977 (Mine Act). MSHA inspects our mines on a regular basis and issues various citations, orders and violations when it believes a violation has occurred under the Mine Act. We present information below regarding certain mining safety and health violations, orders and citations, issued by MSHA and related assessments and legal actions and mine-related fatalities with respect to our coal mining operations. In evaluating the above information regarding mine safety and health, investors should take into account factors such as: (i) the number of citations and orders will vary depending on the size of a coal mine, (ii) the number of citations issued will vary from inspector to inspector and mine to mine, and (iii) citations and orders can be contested and appealed, and in that process are often reduced in severity and amount, and are sometimes dismissed or vacated.

The table below sets forth for the twelve months ended December 31, 2022 for each active MSHA identification number of Arch Resources and its subsidiaries, the total number of: (i) violations of mandatory health or safety standards that could significantly and substantially contribute to the cause and effect of a coal or other mine safety or health hazard under section 104 of the Mine Act for which the operator received a citation from MSHA; (ii) orders issued under section 104(b) of the Mine Act; (iii) citations and orders for unwarrantable failure of the mine operator to comply with mandatory health or safety standards under section 104(d) of the Mine Act; (iv) flagrant violations under section 110(b)(2) of the Mine Act; (v) imminent danger orders issued under section 107(a) of the Mine Act; (vi) proposed assessments from MSHA (regardless of whether Arch Resources has challenged or appealed the assessment); (vii) mining-related fatalities; (viii) notices from MSHA of a pattern of violations of mandatory health or safety standards that are of such nature as could have significantly and substantially contributed to the cause and effect of coal or other mine health or safety hazards under section 104(e) of the Mine Act; (ix) notices from MSHA regarding the potential to have a pattern of violations as referenced in (viii) above; and (x) pending legal actions before the Federal Mine Safety and Health Review Commission (as of December 31, 2022) involving such coal or other mine, as well as the aggregate number of legal actions instituted and the aggregate number of legal actions resolved during the reporting period.

Mine or Operating Name / MSHA Identification Number	Section 104 S&S Citations (#)	Section 104(b) Orders (#)	Section 104(d) Citations and Orders (#)	Section 110(b)(2) Violations (#)	Section 107(a) Orders (#)	Total Dollar Value of MSHA Assessments Proposed (in thousands) (\$)	Total Number of Mining Related Fatalities (#)	Received Notice of Pattern of Violations Under Section 104(e) (Yes/No)	Received Notice of Potential to Have Pattern of Violations Under Section 104(e) (Yes/No)	Legal Actions Initiated During Period (#)	Legal Actions Resolved During Period (#)	Legal Actions Pending as of Last Day of Period(1) (#)
<u>Active Operations</u>												
Vindex Wolf Den Run / 18-00790	—	—	—	—	—	—	—	No	No	—	—	—
Beckley Pocahontas Mine / 46-05252	47	—	—	—	—	181.4	—	No	No	10	7	6
Beckley Pocahontas Plant / 46-09216	—	—	—	—	—	—	—	No	No	—	—	—
Sentinel Mine / 46-04168	62	—	—	—	—	368.2	—	No	No	—	—	—
Sentinel Prep Plant / 46-08777	—	—	—	—	—	1.1	—	No	No	—	—	—
Mingo Logan Mountaineer II / 46-09029	63	3	10	—	—	457.9	—	No	No	15	16	4
Mingo Logan Cardinal Prep Plant / 46-09046	—	—	—	—	—	0.7	—	No	No	3	3	—
Mingo Logan Daniel Hollow / 46-09047	—	—	—	—	—	—	—	No	No	—	—	—
Leer #1 Mine / 46-09192	27	—	—	—	—	53.5	—	No	No	—	—	—
Arch of Wyoming Elk Mountain / 48-01694	—	—	—	—	—	—	—	No	No	—	—	—
Black Thunder / 48-00977	16	—	1	—	—	150.2	—	No	No	1	—	1
Coal Creek / 48-01215	—	—	—	—	—	2.1	—	No	No	1	1	—
West Elk Mine / 05-03672	24	—	—	—	—	98.4	—	No	No	—	—	—
Leer #1 Prep Plant / 46-09191	1	—	—	—	—	1.5	—	No	No	—	—	—
Wolf Run Mining – Sawmill Run Prep Plant / 46-05544	—	—	—	—	—	—	—	No	No	—	—	—
Vindex Dobbin Ridge Prep Plant / 04607837	—	—	—	—	—	—	—	No	No	—	—	—
Wolf Run – Upshur Complex / 04605823	—	—	—	—	—	—	—	No	No	—	—	—
Birch River Mine / 04607945	—	—	—	—	—	—	—	No	No	—	—	—
Wolf Run Mining – Imperial / 46-09115	—	—	—	—	—	—	—	No	No	—	—	—

(1) See table below for additional details regarding Legal Actions Pending as of December 31, 2022

X` Mine or Operating Name/MSHA Identification Number	Contests of Citations, Orders (as of December 31, 2022)	Contests of Proposed Penalties (as of December 31, 2022)	Complaints for Compensation (as of December 31, 2022)	Complaints of Discharge, Discrimination or Interference (as of December 31, 2022)	Applications for Temporary Relief (as of December 31, 2022)	Appeals of Judges' Decisions or Orders (as of December 31, 2022)
Beckley Pocahontas Mine / 46-05252	—	6	—	—	—	—
Mingo Logan Mountaineer II / 46-09029	—	4	—	—	—	—
Thunder Basin / Black Thunder / 48-00977	—	1	—	—	—	—