ANNUAL REPORT 2022

NewMarket®

FINANCIAL HIGHLIGHTS

	2022	2021
	in thousands, except share and per-share amounts	
OPERATIONS:		
Net sales	$2,764,799	$2,356,110
Petroleum additives operating profit	$ 378,244	$ 281,055
Net income	$ 279,538	$ 190,908
Basic and diluted earnings per share	$ 27.77	$ 17.71
FINANCIAL POSITION AND OTHER DATA:		
Cash and cash equivalents	$ 68,712	$ 83,304
Long-term debt	$1,003,737	$1,139,287
Shareholders' equity	$ 762,407	$ 762,129
Shares repurchased during year	668,553	566,671

The following graphs present several financial measures, including EBITDA. EBITDA is a non-GAAP financial measure and is defined as income before the deduction of interest and financing expenses, income tax expense, depreciation (on property, plant, and equipment), and amortization (on intangibles and lease right-of-use assets). In addition, we present the non-GAAP financial measure of net debt to EBITDA in the letter to our shareholders. Net debt is defined as long-term debt, including current maturities, less cash and cash equivalents and marketable securities. Net debt to EBITDA is defined as net debt divided by EBITDA.

While EBITDA, net debt, and net debt to EBITDA are not required by or presented in accordance with United States generally accepted accounting principles (GAAP), we believe these additional financial measures enhance understanding of our financial performance and period to period comparability. These items should not be considered an alternative to results determined under GAAP. Reconciliations of the GAAP measures to these non-GAAP measures are presented on the following page.

NON-GAAP FINANCIAL INFORMATION
(In thousands, unaudited)

	Years Ended December 31,				
	2018	2019	2020	2021	2022
Net Income	$234,734	$254,286	$270,568	$ 190,908	$ 279,538
Add:					
Interest and financing expenses, net	26,723	29,241	26,328	34,218	35,202
Income tax expense	55,551	77,304	60,719	56,643	68,196
Depreciation and amortization	70,618	86,421	82,666	82,532	80,775
EBITDA	$387,626	$447,252	$440,281	$ 364,301	$ 463,711

	December 31,				
	2018	2019	2020	2021	2022
Long-term debt, including current maturities	$770,999	$642,941	$598,848	$1,139,287	$1,003,737
Less:					
Cash and cash equivalents	73,040	144,397	125,172	83,304	68,712
Marketable securities	0	0	0	375 918	0
Net Debt	$697,959	$498,544	$473,676	$ 680,065	$ 935,025
Net Debt to EBITDA	1.8	1.1	1.1	1.9	2.0

To Our Shareholders:

It is my pleasure to report that our company remains strong with a bright future. I am pleased by the overall performance of our business in 2022 and the work done by our team to navigate the many challenges of the past three years.

Our petroleum additives business reported solid results in 2022 as we continued to manage through the impact of the COVID-19 pandemic, worldwide supply chain disruptions, rising raw material and operating costs, and the Russia-Ukraine war. We adapted throughout the year and finished with strong operating results. We saw significant revenue growth and made improvements resolving customer supply chain issues. In addition, our efforts to control costs and make internal progress on efficiencies are beginning to take hold. We are still, however, challenged by the inflationary environment and rising operating costs that we expect to continue into 2023. Margin recovery and cost control will remain priorities.

Our commitment to safety excellence applies to every employee, contractor, and visitor every day, at every site. Our safety-first culture continues to be the cornerstone of our operating philosophy. The institutionalization of our “Actively Caring” safety program is yielding good results through the dedicated efforts of our committed team as we strive toward our “Vision of Zero” injuries. During 2022, both Afton and Ethyl were top performers among their industry peers with our worldwide injury/illness recordable rate of 0.44. Additionally, we had zero serious injuries across all sites, as well as zero recordable injuries at 10 of our facilities. We are committed to achieving our aspiration of zero injuries and incidents.

We continue to develop new products and technology to keep our customers well-positioned for the future by meeting evolving OEM requirements, including specific demands of hybrid and electric vehicles, industry specifications, and environmental regulations. Our leading-edge capabilities and fundamental understanding in the areas of combustion, friction control, energy efficiency, electric motor compatibility, and wear prevention are used to set the stage for the next generation of products in all areas. In 2022, we successfully launched over 70 new products across all our lubricant additives and fuel additives technology portfolio.

During the year we returned $292 million to our shareholders through dividends of $84 million and stock repurchases of $208 million. We ended the year with a healthy balance sheet and with net debt to EBITDA at 2.0X.

As we look to 2023, we will maintain our commitment to safety excellence, grow profitable volume, and stay focused on margin recovery. We will also continue our Cost-2-Serve efforts to drive efficiency in every aspect of our business to help offset the impact of inflation.

I would like to thank our dedicated employees for their loyal support to our company. I continue to be impressed by what our team can accomplish as we work together. They embody our One Team, One Goal mentality and always deliver.

Sincerely,

Thomas E. Gottwald
Chairman and CEO

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

For the transition period from ________ to ________

Commission file number 1-32190

NEWMARKET CORPORATION

Incorporated pursuant to the Laws of the Commonwealth of Virginia
Internal Revenue Service Employer Identification No. 20-0812170
330 South Fourth Street
Richmond, Virginia 23219-4350
804-788-5000

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, with no par value	**NEU**	**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	☒	Accelerated filer	☐
Non-accelerated filer	☐	(Do not check if a smaller reporting company)	
		Smaller reporting company	☐
		Emerging growth company	☐

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. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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

Aggregate market value of voting stock held by non-affiliates of the registrant as of June 30, 2022 (the last business day of the registrant's most recently completed second fiscal quarter): $2,142,263,376*

Number of shares of Common Stock outstanding as of January 31, 2023: 9,685,851

DOCUMENTS INCORPORATED BY REFERENCE

Portions of NewMarket Corporation's definitive Proxy Statement for its 2023 Annual Meeting of Shareholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A under the Securities Exchange Act of 1934 are incorporated by reference into Part III of this Annual Report on Form 10-K.

* In determining this figure, an aggregate of 2,961,543 shares of Common Stock as beneficially owned by Bruce C. Gottwald and members of his immediate family have been excluded and treated as shares held by affiliates. See Item 12. The aggregate market value has been computed on the basis of the closing price on the New York Stock Exchange on June 30, 2022.

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PART I

ITEM 1. BUSINESS

NewMarket Corporation (NewMarket) (NYSE: NEU) is a holding company and is the parent company of Afton Chemical Corporation (Afton), Ethyl Corporation (Ethyl), NewMarket Services Corporation (NewMarket Services), and NewMarket Development Corporation (NewMarket Development).

Each of our subsidiaries manages its own assets and liabilities. Afton manufactures and sells petroleum additives, while Ethyl markets antiknock compounds in North America and performs contracted manufacturing and related services. NewMarket Development manages the real property that we own in Virginia. NewMarket Services provides various administrative services to NewMarket, Afton, Ethyl, and NewMarket Development. NewMarket Services departmental and other expenses are billed to each subsidiary pursuant to services agreements between the companies.

References in this Annual Report on Form 10-K to “we,” “us,” “our,” and “NewMarket” are to NewMarket Corporation and its consolidated subsidiaries, unless the context indicates otherwise.

As a specialty chemicals company, Afton develops and manufactures highly formulated lubricant and fuel additive packages and markets and sells these products worldwide. Afton is one of the largest lubricant and fuel additives companies in the world. Lubricant and fuel additives are necessary products for efficient and reliable operation of vehicles and machinery. From custom-formulated additive packages to market-general additives, we believe Afton provides customers with products and solutions that make engines run smoother, machines last longer, and fuels burn cleaner.

Through an open, flexible, and collaborative style, Afton works closely with its customers to understand their business and help them meet their goals. This style has allowed Afton to develop long-term relationships with its customers in every major region of the world, which Afton serves through our manufacturing facilities across the globe.

We have operations in North America, Europe, Asia, and South America. The economies are generally stable in the countries where we do most of our business, although many of those countries experience economic challenges from time to time. In countries with more political or economic uncertainty, we generally minimize our risk of loss by utilizing U.S. Dollar-denominated transactions, letters of credit, and prepaid transactions. Further information on our operations in the various geographic areas is in Note 4 of the Notes to Consolidated Financial Statements.

With approximately 500 employees in research, development, and testing, Afton is dedicated to developing additive formulations that are tailored to our customers’ and the end-users’ specific needs. Afton’s portfolio of technologically-advanced, value-added products allows it to provide a full range of products, services, and solutions to its customers.

Ethyl provides contracted manufacturing and related services to Afton and to third parties and is a marketer of antiknock compounds in North America.

NewMarket Development manages the real property we own in Richmond, Virginia consisting of approximately 50 acres. Our corporate offices are included in this acreage, as well as a research and testing facility, and several acres dedicated to other uses. We are exploring various development opportunities for portions of the property as the demand warrants. This effort is ongoing in nature.

We were incorporated in the Commonwealth of Virginia in 2004. Our principal executive offices are located at 330 South Fourth Street, Richmond, Virginia, and our telephone number is (804) 788-5000.

Business Segments

Our business is composed of one segment, petroleum additives, which is primarily represented by Afton. The antiknock compounds business of Ethyl is reflected in the "All other" category. Each of these is discussed below.

Petroleum Additives—Petroleum additives are used in lubricating oils and fuels to enhance their performance in machinery, vehicles, and other equipment. We manufacture chemical components that are selected to perform one or more specific functions and combine those chemicals with other chemicals or components to form additive packages for use in specified end-user applications. The petroleum additives market is a global marketplace, with customers ranging from large, integrated oil companies to national, regional, and independent companies.

We believe our success in the petroleum additives market is largely due to our ability to deliver value to our customers through our products and our open, flexible, and collaborative working style. We accomplish this by understanding what our customers value and by applying our technical capabilities, formulation expertise, broadly differentiated product solutions, and global supply capabilities to satisfy our customers' needs. We invest significantly in research and development in order to meet our customers' needs and to adapt to the rapidly changing environment for new and improved products and services.

We view the petroleum additives marketplace as being comprised of two broad product applications: lubricant additives and fuel additives. Lubricant additives are highly formulated chemical solutions that, when blended with base fluids, improve the efficiency, durability, performance, and functionality of mineral oils, synthetic oils, and biodegradable fluids, thereby enhancing the performance of machinery and engines. Fuel additives are chemical components that help oil refiners meet fuel specifications or formulated packages that improve the performance of gasoline, diesel, biofuels, and other fuels, resulting in lower operating costs, improved vehicle performance, and reduced emissions.

Lubricant Additives

Lubricant additives are essential ingredients for making lubricating oils. Lubricant additives are used in a wide variety of vehicle and industrial applications, including engine oils, transmission fluids, off-road powertrain and hydraulic systems, gear oils, hydraulic oils, and turbine oils, and virtually any other application where metal-to-metal moving parts are utilized. Lubricant additives are organic and synthetic chemical components that enhance wear protection, prevent deposits, and protect against the hostile operating environment of an engine, transmission, axle, hydraulic pump, or industrial machine.

Lubricants are widely used in operating machinery from transportation vehicles to heavy industrial equipment. Lubricants provide a layer of protection between moving mechanical parts. Without this layer of protection, the normal functioning of machinery would not occur. Effective lubricants reduce downtime and increase efficiency. Specifically, lubricants serve the following main functions:

- friction reduction—Friction is reduced by maintaining a thin film of lubricant between moving surfaces, preventing them from coming into direct contact with one another and reducing wear on moving machinery, thereby providing longer life and operational efficiency.
- heat removal—Lubricants act as coolants by removing heat resulting either from friction or through contact with other, higher temperature materials.
- containment of contaminants—Lubricants function by carrying contaminants away from the machinery and neutralizing the harmful impact of the by-products created by combustion.

The functionality of lubricants is created through an exact balance between a base fluid and performance-enhancing additives. This balance is the goal of effective formulations achieved by experienced research and development professionals. We offer a full line of lubricant additive packages, each of which is composed of

component chemicals specially selected to perform desired functions. We manufacture most of the chemical components and blend these components to create formulated additive packages designed to meet industry and customer specifications. Lubricant additive components are generally classified based upon their intended functionality, including:

- detergents, which clean moving parts of engines and machines, suspend oil contaminants and combustion by-products, and absorb acidic combustion products;
- dispersants, which serve to inhibit the formation of sludge and particulates;
- extreme pressure/antiwear agents, which reduce wear on moving engine and machinery parts;
- viscosity index modifiers, which improve the viscosity and temperature characteristics of lubricants and help the lubricant flow evenly to all parts of an engine or machine; and
- antioxidants, which prevent oil from degrading over time.

We are one of the leading global suppliers of specially formulated lubricant additives that combine some or all of the components described above to develop our products. Our products are highly formulated, complex chemical compositions derived from extensive research and testing to ensure all additive components work together to provide the intended results. Our products are engineered to meet specifications prescribed by either the industry or a specific customer. Purchasers of lubricant additives tend to be integrated oil companies or independent compounders/blenders. We make no sales directly to end-users or to original equipment manufacturers (OEMs).

We view our participation in the lubricant marketplace in three primary areas: engine oil additives, driveline additives, and industrial additives. Our view is not necessarily the same way others view the market.

Engine Oil Additives—The largest submarket within the lubricant additives marketplace is engine oil additives which consists of additives designed for passenger cars, motorcycles, on and off-road heavy duty commercial equipment, locomotives, and large engines in ocean-going vessels. We estimate engine oil additives represent approximately 70% of the overall lubricant additives market volume.

The engine oil market's primary customers include consumers, fleet owners, mining and construction companies, farmers, railroads, shipping companies, service dealers, and OEMs. The primary functions of engine oil additives are to reduce friction, prevent wear, control formation of sludge and oxidation, and prevent rust. Engine oil additives are typically sold to lubricant manufacturers who combine them with a base oil fluid to meet internal, industry, and OEM specifications.

Key drivers of engine oil additives demand are the number of vehicles on the road, total vehicle miles driven, fuel economy, the average age of vehicles on the road, drain intervals, engine and crankcase size, changes in engine design, and temperature and specification changes driven by the OEMs. The extension of drain intervals has generally offset increased demand due to higher vehicle population, new hardware, and more miles driven. Other key drivers include industrial production rates, agricultural output, mining and construction output, environmental regulations, and infrastructure investments of commercial companies. Afton offers products that enhance the performance of mineral, part-synthetic, and fully-synthetic engine oils.

Driveline Additives—The driveline additives submarket is comprised of additives designed for products such as transmission fluids, axle fluids, and off-road powertrain fluids. This submarket shares in the 30% of the market not covered by engine oil additives. Transmission fluids primarily serve as the power transmission and heat transfer medium in the area of the transmission where the torque of the drive shaft is transferred to the gears of the vehicle. Axle fluids lubricate gears and bearings in axles, and powertrain fluids are used in off-highway powertrain and hydraulic systems. Other products in this area include power steering fluids, shock absorber fluids, gear oils, and lubricants for heavy machinery. Additionally, as a leading additive supplier to the electric vehicle market, we are investing in and delivering new technologies to enable electric vehicle market growth to

help reduce carbon emissions. We anticipated and are responding to the need for future lubricants to consider conductivity, the effect of electric fields, low friction/high speed, noise, and battery cooling or copper wire drawing. All driveline additives products must conform to highly prescribed specifications developed by vehicle OEMs for specific models or designs. Driveline additives are generally sold to oil companies for ultimate sale to vehicle OEMs for new vehicles (factory-fill), service dealers for aftermarket servicing (service-fill), retailers, and distributors.

Key drivers of the driveline additives marketplace are the number of vehicles manufactured, total number of vehicles in operation, drain intervals for transmission fluids and axle fluids, changes in engine and transmission design and temperatures, and specification changes driven by the OEMs.

Industrial Additives—The industrial additives submarket is comprised of additives designed for products for industrial applications such as hydraulic fluids, grease, industrial gear fluids, and industrial specialty applications, such as turbine oils. This submarket also shares in the 30% of the market not covered by engine oil additives. These products must conform to industry specifications, OEM requirements, and/or application and operating environment demands. Industrial additives are generally sold to oil companies, service dealers for after-market servicing, and distributors.

Key drivers of the industrial additives marketplace are gross domestic product levels and industrial production.

Fuel Additives

Fuel additives are chemical compounds that are used to improve both the oil refining process and the performance of gasoline, diesel, biofuels, and other fuels. Benefits of fuel additives in the oil refining process include reduced use of crude oil, lower processing costs, and improved fuel storage properties. Fuel performance additives enhance fuel economy, improve ignition and combustion efficiency, reduce emission particulates, maintain engine cleanliness, and protect against deposits in fuel injectors, intake valves, and the combustion chamber. Our fuel additives are extensively tested and designed to meet stringent industry, government, OEM, and individual customer requirements.

Many different types of additives are used in fuels. Their use is generally determined by customer, industry, OEM, and government specifications, and often differs from country to country. The types of fuel additives we offer include:

- gasoline performance additives, which clean and maintain key elements of the fuel delivery systems, including fuel injectors and intake valves, in gasoline engines;
- diesel fuel performance additives, which perform similar cleaning functions in diesel engines;
- cetane improvers, which increase the cetane number (ignition quality) in diesel fuel by reducing the delay between injection and ignition;
- stabilizers, which reduce or eliminate oxidation in fuel;
- corrosion inhibitors, which minimize the corrosive effects of combustion by-products and prevent rust;
- lubricity additives, which restore lubricating properties lost in the refining process;
- cold flow improvers, which improve the pumping and flow of distillate and diesel fuels in cold temperatures;
- octane enhancers, which increase octane ratings and decrease emissions; and
- static dissipating additives.

We offer a broad line of fuel additives worldwide and sell our products to major fuel marketers and refiners, as well as independent terminals and other fuel blenders.

Key drivers in the fuel additive marketplace include total vehicle miles driven, fuel economy, the introduction of new engine designs, regulations on emissions (both gasoline and diesel), quality of the crude oil slate and performance standards, and marketing programs of major oil companies.

Competition

We believe we are one of the four largest manufacturers and suppliers in the petroleum additives marketplace.

In the lubricant additives submarket, our major competitors are The Lubrizol Corporation (a wholly-owned subsidiary of Berkshire Hathaway Inc.), Infineum (a joint venture between ExxonMobil Chemical and Shell plc), and Chevron Oronite Company LLC. There are several other suppliers in the worldwide market who are competitors in their particular product areas.

The fuel additives submarket is characterized by more competitors. While we participate in many facets of the fuel additives market, our competitors tend to be more narrowly focused. In the gasoline detergent market, we compete mainly against BASF, Chevron Oronite Company LLC, Innospec Inc., and The Lubrizol Corporation. In the diesel and refinery markets, we compete mainly against The Lubrizol Corporation, Infineum, BASF, Clariant Ltd., Dorf Ketal, and Innospec Inc. We also compete against other regional companies in the fuel additives marketplace.

The competition among the participants in these industries is characterized by the need to provide customers with cost effective, technologically-capable products that meet or exceed industry specifications. The need to continually increase technology performance and lower cost through formulation technology and cost improvement programs is vital for success in this environment.

All Other—The "All other" category includes the operations of the antiknock compounds business (primarily sales of antiknock compounds in North America), as well as certain contracted manufacturing and related services performed by Ethyl. The Ethyl facility is located in Houston, Texas and is substantially dedicated to terminal operations related to antiknock compounds and other fuel additives. The financial results of the petroleum additives activities by Ethyl are reflected in the petroleum additives segment results. The "All other" category financial results include a service fee charged by Ethyl for its production services to Afton.

Raw Materials and Product Supply

We use a variety of raw materials and chemicals in our manufacturing and blending processes and believe the sources of these are adequate for our current operations. The primary raw materials for Afton are base oil, polyisobutylene, antioxidants, alcohols, solvents, detergents, friction modifiers, olefins, and copolymers.

As the performance requirements of our products become more complex, we often work with highly specialized suppliers. In some cases, we source from a single supplier. In cases where we decide to source from a single supplier, we manage our risk by maintaining safety stock of the raw material or qualifying alternate suppliers, which could take additional time to implement, but we are confident we can ensure continued supply for our customers.

During the past three years, global supply chain disruptions negatively affected both supply, as well as distribution and transportation networks. We continuously monitor our raw material supply situation and adjust our procurement strategies as conditions require.

Research, Development, and Testing

Research, development, and testing (R&D) provides Afton with new performance-based solutions for our customers in the petroleum additives market. We develop products through a combination of chemical synthesis, formulation development, engineering design, and performance testing. In addition to developing new products, R&D provides our customers and OEMs with data to substantiate product differentiation and technical support to assure total customer satisfaction.

We are committed to providing the most advanced products, comprehensive testing programs, and superior technical solutions tailored to the needs of our customers and OEMs worldwide. Afton continues to successfully implement techniques to drive efficiency in technology discovery and development, while expanding our internal testing, research, and customer support capabilities around the world in support of our goals of providing market-driven technical leadership and performance-based differentiation. In 2022, we continued to invest in and progress our technology plans.

Afton continues to develop new products and technology to keep our customers well-positioned for the future by meeting evolving OEM requirements, including specific demands of hybrid and electric vehicles, industry specifications, and environmental regulations. A significant portion of our R&D investment is dedicated to the development of products that are differentiated by their ability to deliver improved fuel efficiency in addition to robust performance in a wide range of new vehicle and industrial equipment designs. Afton's state-of-the art testing capabilities enable customized research in all areas of performance needed by both OEMs and tier one suppliers. Our leading-edge capabilities and fundamental understanding in the areas of combustion, friction control, energy efficiency, electric motor compatibility, and wear prevention are used to set the stage for next-generation products in all areas.

In line with Afton's vision, we continue to focus our technology to make the world a better place by reducing the use of chemicals of concern, using more raw materials from sustainable sources, developing additives that enable some of the world's most fuel efficient fluids, creating fuels additives that enable engines to be more efficient, and being a market leader in transmission fluids for full battery electric vehicles. In addition, we are continuing to see benefits from our waste minimization efforts with a 33% reduction in hazardous waste generation from R&D operations in Richmond, Virginia when compared to last year.

In 2022, we successfully launched new technologies across all our lubricant additives and fuel additives product areas. We developed new engine oil products for passenger cars and commercial trucks in support of our customers in all the major regions of the world in which we operate, including engine oil technology designed for the latest fuel-efficient passenger car specifications, as well as solutions for commercial vehicles.

We continued to develop new products in multiple application areas in the industrial additives sector, including hydraulic, industrial gear, turbine, slideway, and grease additives. Research is focused on the development of technologies that will provide differentiation to our customers in multiple performance areas including equipment life, reliability, and energy efficiency, as well as eliminating or reducing chemicals of concern. This includes focusing on our wind turbine technology to maintain our technology leadership in this important and growing market.

Research continued in our transmission fluid, axle oil, and tractor fluid product lines. This included the development of new OEM-specific additives used in factory-fill fluids installed during automotive component and vehicle assembly in the United States, Germany, Japan, India, and China. We launched new OEM specific technology for full battery electric passenger and commercial vehicles for industry-leading OEMs and are a top supplier in this new and growing market. We also developed new products for the service-fill sector to provide our customers with the latest additives technology available, with specific focus on the Asia Pacific region.

We continue to provide leading technology in the fuel additives area. In 2022, we developed new technology in both gasoline performance additives and diesel performance additives. This includes launching a new technology platform that is both more efficient and better performing. In addition, we continue to maintain close interactions with regulatory, industry, and OEM leaders to guide our development of future fuel additives technologies based on well-defined market needs.

Afton remains committed to providing the most advanced products, comprehensive testing programs, and superior technical solutions tailored to the needs of our customers and OEMs worldwide.

Intellectual Property

Our intellectual property, including our patents, licenses, and trademarks, is an important component of our business. We actively protect our inventions, new technologies, and product developments by filing patent applications and maintaining trade secrets. We currently own approximately 1,500 issued or pending United States and foreign patents. In addition, we have acquired the rights under patents and inventions of others through licenses or otherwise. We take care to respect the intellectual property rights of others and we believe our products do not infringe upon those rights. We vigorously participate in patent opposition proceedings around the world, where necessary, to secure a technology base free of infringement. We believe our patent position is strong, aggressively managed, and sufficient for the conduct of our business.

We also have several hundred trademark registrations throughout the world for our marks, including NewMarket®, Afton Chemical®, Ethyl®, mmt®, HiTEC®, GREENBURN®, Passion for Solutions®, CleanStart®, Microbotz®, DriveMore®, and Axcel®.

Human Capital

Our Values are the foundation of our company and support the inclusive and respectful culture we have established in all of our locations around the world. Our Values include:

- unquestioned integrity,
- respect for people,
- safety and environmental responsibility,
- partners with customers and suppliers,
- continuously improving quality,
- citizenship, and
- economic viability.

We place the highest level of commitment on safety and strive to operate our business every day focused on its importance. Keeping our employees safe is a management priority, and the past three years were particularly challenging in that regard because of the COVID-19 pandemic. While some of our employees were required to work from home due to government mandates, all of our facilities continued to be operational throughout 2020 to 2022 since the chemical industry and our products are considered essential for the transportation of people, goods, and services. For employees working onsite at our facilities, management invested significant time and effort to ensure the safety of our employees, above and beyond local government requirements and guidance, and to help mitigate risk.

We have a diverse workforce, representative of the geographic regions in which we do business. We place a high value on diverse thoughts, skills, perspectives, cultures, and knowledge because we believe that such diversity results in better business decision making. We employed 2,058 people at the end of 2022. Approximately 1,000 were located in the United States, 500 were in the Europe/Middle East/Africa/India region, 300 were in the Asia Pacific region, and 250 were in the Latin America region. Approximately 22% of our workforce is represented by unions.

When we hire new employees, our goal is that they stay with our company for the remainder of their career. Hiring the right people for the long-term and developing them for key roles is a critical focus area. To be successful, we must attract and retain a highly qualified and technically competent workforce, including key employees in leadership positions. As technology changes in the petroleum additives industry are ongoing, the success of our business is very dependent upon our ability to attract and retain highly qualified scientific and technical personnel. In addition to utilizing our internal network, contacts, and specialized recruiters to identify and attract qualified personnel, we have established relationships with a number of universities globally and have intern and co-op programs in many of our locations.

Globally, approximately 17% of our employees have 20 years or more of service, and over the three-year period from 2020 to 2022, our resignation rate was approximately 4.6%. We believe these measures demonstrate our success in hiring the right employees for the long-term and establishing a culture where respect for people is an everyday value.

Commitment to Environmental and Safety Excellence

Our commitment to the environment and safety excellence applies to every employee, contractor, and visitor every day, at every site. Safety and environmental responsibility are a way of life at NewMarket—enhancing operations, the way we work, and the relationships we maintain with our employees, customers, supply chain partners, and the communities in which we operate. Our objective is to establish a culture where our employees understand that good environmental and safety performance is good business and understand that environmental compliance and safety are individual responsibilities. Every employee at NewMarket is responsible for ensuring that our high standards in the area of health, safety (including process safety), environmental protection, and security are upheld at all times.

Our Global Responsible Care Policy Statement includes a commitment to conduct operations in a manner that protects our employees, communities, and the environment, to comply with all applicable laws and regulations, and to reduce our environmental impacts. Additionally, in pursuit of our vision of zero incidents, we work with our employees and other key stakeholders to establish appropriate goals, objectives, and targets. "Responsible Care" is a registered service mark of the American Chemistry Council (ACC).

Both Afton and Ethyl have implemented Responsible Care® Management Systems (RC14001®) at North American facilities. Our Responsible Care® management systems are certified by an independent third-party auditing process. Additionally, Afton's Feluy, Belgium; Suzhou, China; Tsukuba, Japan; Rio de Janeiro, Brazil; Bracknell, England; and Singapore facilities are all certified to the environmental standard ISO 14001. The Suzhou and Singapore sites are also certified to ISO 45001, a global occupational health and safety standard. Our San Juan del Rio, Mexico site is formally certified to RC 14001/ISO14001. Afton's Sauget, Illinois plant continues to be an OSHA VPP (Voluntary Protection Program) "Star" worksite.

In 2022, we continued to enhance our "Actively Caring" safety program, where people look out for the safety and welfare of others with courage and compassion, enabling the achievement of an injury-free environment. Both Afton and Ethyl were top performers among their industry peers with our worldwide injury/illness recordable rate (which is the number of injuries per 200,000 hours worked) in 2022 at 0.44. Additionally, during 2022 we had zero serious injuries across all sites, as well as zero recordable injuries at our Houston, Port Arthur, Ashland, Bracknell, Feluy, Rio de Janeiro, San Juan del Rio, Singapore, Suzhou, and Tsukuba facilities. The safety performance affirmed our Vision of Zero Improvement plans and actions across the sites, as well as the importance placed on our safety-first culture. We continue to leverage site-level safety improvement plans at key sites and emphasize reporting "good catches" and "near misses" to help reduce risk and drive improved performance. We are committed to achieving our aspiration of zero injuries and incidents.

As members of the ACC, Afton and Ethyl provide data on twelve metrics used to track environmental impact, safety, energy use, community outreach and emergency preparedness, greenhouse gas intensity, and product stewardship performance of the ACC member companies. These can be viewed at https://www.americanchemistry.com/chemistry-in-america/responsible-care-driving-safety-industry-performance/metrics-transparent-reporting/individual-member-company-performance-reporting. The information on this website is not, and shall not be deemed to be, a part of this Annual Report on Form 10-K or incorporated by reference in this Annual Report on Form 10-K or any other filings we make with the Securities and Exchange Commission (SEC).

Governmental and Environmental Regulations

As a chemical company, we are subject to regulation by local, state, federal, and foreign governmental authorities specific to the production, distribution, management, and stewardship of chemicals.

In addition, in the United States and under similar foreign and state laws, we are subject to a variety of environmental laws and regulations, as well as environmental liabilities associated with the investigation and cleanup of hazardous substances. These liabilities may include personal injury, property damage, or natural resource damages arising from the release of, or exposure to, hazardous substances. They may be imposed on us in a range of situations without regard to violation of law or regulations. They may also be imposed jointly and severally, where one party may be held liable for a disproportionate share of the damages, up to and including the entire loss. These liabilities may include entities with any possible connection to the hazardous substances, including, for example, entities that formerly owned or operated a property or entities that arranged for disposal of hazardous substances from a property.

We believe we comply, in all material respects, with laws, regulations, statutes, and ordinances, including, but not limited to, those protecting the environment, as well as those related to the management and stewardship of chemicals. We have policies and procedures in place that establish regular reviews of our regulatory and environmental compliance and product stewardship, and actively monitor any significant existing or potential regulatory changes or environmental issues that could materially affect the company.

Our total accruals for environmental remediation, dismantling, and decontamination were approximately $10 million at December 31, 2022 and $11 million at December 31, 2021. As new technology becomes available, it may be possible to reduce accrued amounts. While we believe that we are currently fully accrued for known environmental issues, it is possible that unexpected future costs could have a significant financial impact on our financial position, results of operations, and cash flows.

The costs of complying with existing environmental, health, and safety laws and regulations as they pertain to our products and operations, including remediation, closure, and postclosure costs, are primarily included in cost of goods sold. We spent approximately $37 million in 2022, $35 million in 2021, and $29 million in 2020 for ongoing environmental operating and clean-up costs, excluding depreciation of previously capitalized expenditures.

In addition to the ongoing environmental compliance costs and the costs to remediate contaminated sites, worldwide capital expenditures for pollution prevention and safety projects were $11 million in 2022 and $17 million in both 2021 and 2020.

The costs of complying with governmental pollution prevention and safety regulations are subject to:

- potential changes in applicable statutes and regulations (or their enforcement and interpretation);
- uncertainty as to the success of anticipated solutions to pollution problems;
- uncertainty as to whether additional expense may prove necessary; and
- potential for emerging technology to affect remediation methods and reduce associated costs.

Availability of Reports Filed with the Securities and Exchange Commission and Corporate Governance Documents

Our internet website address is www.newmarket.com. We make available, free of charge through our website, our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended (Exchange Act), as soon as reasonably practicable after such documents are electronically filed with, or furnished to, the SEC. In addition, our Corporate Governance Guidelines, Code of Conduct, and the charters of our Audit, Compensation, and Nominating and Corporate Governance Committees are available on our website and are available in print, without charge, to any shareholder upon request by contacting our Corporate Secretary at NewMarket Corporation, 330 South Fourth Street, Richmond, Virginia 23219. The information on our website is not, and shall not be deemed to be, a part of this Annual Report on Form 10-K or incorporated by reference in this Annual Report on Form 10-K or any other filings we make with the SEC. We file our annual, quarterly and current reports, proxy statements, and other information with the SEC. Our SEC filings are available to the public on the SEC's website at www.sec.gov.

Information about our Executive Officers

The names and ages of all executive officers as of February 15, 2023 follow.

Name	Age	Positions
Thomas E. Gottwald	62	Chairman of the Board, President, and Chief Executive Officer (Principal Executive Officer)
William J. Skrobacz	63	Chief Financial Officer and Vice President (Principal Financial Officer)
Bruce R. Hazelgrove, III	62	Executive Vice President and Chief Administrative Officer
Bryce D. Jewett, III	48	Vice President and General Counsel
Gail C. Ridgeway	48	Controller (Principal Accounting Officer)
Cameron D. Warner, Jr.	64	Treasurer
Brian D. Paliotti	46	President, Afton Chemical Corporation

Our officers, at the discretion of the Board of Directors, hold office until the meeting of the Board of Directors following the next annual shareholders' meeting. Mr. Gottwald, Mr. Hazelgrove, and Mr. Warner have served in their capacity for at least the last five years. Mr. Skrobacz, Mr. Jewett, Mrs. Ridgeway, and Mr. Paliotti have served in their capacities for less than five years.

Mr. Skrobacz joined the company in May 2011 as Senior Manager, Business Assurance, was appointed Controller Designate in September 2012, appointed Principal Accounting Officer and Controller on May 1, 2013, and appointed Chief Financial Officer and Vice President on January 1, 2023. Mr. Jewett joined NewMarket Corporation in July 2020 as Vice President and General Counsel. Prior to his employment at NewMarket, he was a partner at McGuireWoods LLP. Mrs. Ridgeway joined the company in December 2011 as Tax Compliance Manager, became Tax Director in April 2017, Assistant Controller in March 2021, and Controller on January 1, 2023. Mr. Paliotti joined NewMarket in June 2008 as Financial Officer for Afton Chemical Corporation, was appointed Senior Financial Officer of NewMarket Services Corporation in October 2011, promoted to Vice President, Finance of NewMarket Services Corporation in May 2013, and promoted to Vice President and Chief Financial Officer in January 2015. He became President of Afton Chemical Corporation on January 1, 2023.

ITEM 1A. RISK FACTORS

Our business is subject to many factors that could have a material adverse effect on our future performance, results of operations, financial condition, or cash flows and could cause our actual results to differ materially from those expressed or implied by forward-looking statements made in this Annual Report on Form 10-K. Those risk factors are outlined below.

Market and Supply Chain Risks

- **Sudden, sharp, or prolonged changes in the prices of and/or demand for raw materials may adversely affect our profit margins.**

  We utilize a variety of raw materials in the manufacture of our products, including base oil, polyisobutylene, antioxidants, alcohols, solvents, detergents, friction modifiers, olefins, and copolymers. We may also enter into contracts which commit us to purchase some of our more critical raw materials based on anticipated demand. Our profitability is sensitive to changes in the quantities of raw materials we may need and the costs of those materials which may be caused by changes in supply, demand or other market conditions, including general inflation, over which we have little or no control. Political and economic conditions globally have caused, and may continue to cause, our demand for and the cost of our raw materials to fluctuate. War, armed hostilities, terrorist acts, civil unrest, inclement weather events, or other incidents may also cause a sudden, sharp, or prolonged change in our demand for and the cost of our raw materials. We cannot assure that we will be able to pass on to our customers any future increases in raw material costs in the form of price increases for our products. If our demand for raw materials were to

decline such that we would not have need for the quantities required to be purchased under commitment agreements, we could incur additional charges that would affect our profitability.

- **Lack of availability of raw materials, including sourcing from some single suppliers, could negatively impact our ability to meet customer demand.**

  The chemical industry can experience limited supply of certain materials. In addition, in some cases, we choose to source from a single supplier. Any significant disruption in supply, for any reason, could adversely affect our ability to obtain raw materials, which in turn could adversely affect our ability to ensure continued supply for our customers and to meet customer demand.

- **Competitive pressures could adversely affect our margins and profitability.**

  We face significant competition in all of the product lines and markets in which we operate. We expect that our competitors will develop and introduce new and enhanced products, which could cause a decline in the market acceptance of certain products we manufacture. In addition, as a result of price competition, we may be compelled to reduce the prices for some of our products, which could adversely affect our margins and profitability. Some of our competitors may also have greater financial, technological, and other resources than we have and may be able to maintain greater operating and financial flexibility than we are able to maintain. As a result, these competitors may be able to better withstand changes in conditions within our industry, changes in the prices for raw materials, and changes in general economic conditions.

- **We rely on a small number of significant customers concentrated in the lubricant and fuel industries. The loss of sales to any of these customers could significantly reduce our revenues and negatively affect our profitability.**

  Our principal customers are multinational oil companies in the lubricant and fuel industries. These industries are characterized by the concentration of a few large participants. This concentration of customers affects our overall risk profile, since our customers will be similarly affected by changes in economic, geopolitical, and industry conditions. Many factors affect the level of our customers' spending on our products, including, among others, general business conditions, changes in technology, interest rates, oil prices, and consumer confidence in future economic conditions. A sudden or protracted downturn in these industries could adversely affect the buying power of, and purchases by, our customers. The loss of a significant customer or a material reduction in purchases by a significant customer could reduce our revenues and negatively affect our profitability.

Operational Risks

- **A disruption in the availability or capacity of distribution systems could negatively impact our ability to meet our customers' needs and affect our competitive position.**

  We rely on a variety of modes of transportation to deliver products to our customers, including rail cars, cargo ships, and trucks. We depend upon the availability of a distribution infrastructure to deliver our products in a safe and timely manner. Any disruptions in this infrastructure network, whether caused by human error, accidents, deliberate acts of violence, limitations on capacity, repairs and improvements to infrastructure components, earthquakes, storms, or other natural disasters, could adversely affect our ability to meet customer demand.

- **A significant disruption or disaster at one of our production facilities, including those facilities which are sole producers of certain of our products, could result in our inability to meet production requirements and projected customer demand resulting in a negative impact to our profitability and relationships with our customers. These could also potentially result in us incurring significant liabilities.**

  We are dependent upon the continued safe operation of our production facilities. Several of the products we sell are produced only in one location. A prolonged disruption or disaster at one of our facilities could result in our inability to meet production requirements.

Our production facilities are subject to various hazards associated with the manufacturing, handling, storage, and transportation of chemical materials and products, including some that are reactive, explosive, and flammable. Such hazards could include leaks, ruptures, chemical spills, explosions, or fires which result in the discharge or release of toxic or hazardous substances or gases; mechanical failures; unscheduled downtime; and environmental hazards. The occurrence of any of these hazards could cause a disruption in the production of our products and may diminish our ability to meet output goals. These sites may also experience significant disruptions in operations due to inclement weather, natural disasters, flooding, and levee breaches. We cannot assure that our facilities will not experience these types of hazards and disruptions in the future or that these incidents will not result in production delays and affect our ability to meet production requirements. Any such hazards or disruptions at our facilities could result in us losing revenue or not being able to maintain our relationships with our customers.

Additionally, some of the hazards or disruptions mentioned above could result in significant liabilities related to personal injury and loss of life; severe damage to, or destruction of, property and equipment; and environmental contamination.

- **Our research and development efforts are costly and may not succeed, which could impair our ability to meet our customers' needs, affect our competitive position, and result in a loss of market share.**

  The petroleum additives industry is subject to periodic technological change, changes in performance standards, and ongoing product improvements. Further, technological changes in some or all of our customers' products or processes, including the development and customer acceptance of electric vehicles, may make some of our products obsolete. As a result, the life cycle of our products is often hard to predict. In order to maintain our profits and remain competitive, we must effectively respond to technological changes in our industry and successfully develop, manufacture, and market new or improved products in a cost-effective and timely manner. As a result, we must commit substantial resources each year to research and development to maintain and enhance our technological capabilities and meet our customers' changing needs. Ongoing investments in research and development for future products could result in higher costs without a proportional increase in profits. Additionally, for any new product program, there is a risk of technical or market failure in which case we may not be able to develop the new commercial products needed to maintain and enhance our competitive position, or we may need to commit additional resources to new product development programs. Moreover, new products may have lower margins than the products they replace.

- **In order to be successful, we must attract and retain a highly qualified workforce, including key employees in leadership positions.**

  The success of our business is highly dependent on our ability to attract and retain highly qualified personnel to support our research and development efforts and our agility in effectively responding to technological changes in our industry. To the extent that the demand for skilled personnel exceeds supply, we could experience higher labor, recruiting, or training costs in order to attract and retain such a work force. We compete with other companies, both within and outside of our industry, for qualified technical and scientific personnel such as chemical, mechanical, and industrial engineers. To the extent that we lose experienced personnel through wage competition, normal attrition (including retirement), or other means, we must be able to attract qualified candidates to fill those positions and successfully manage the transfer of critical knowledge from those individuals leaving our company. An inability to maintain a highly qualified technical workforce could adversely affect our competitive position and result in a loss of market share.

  We also must manage leadership development and succession planning throughout our business. To the extent that we are unable to attract, develop, and retain leadership talent successfully, we could experience business disruptions that adversely affect our ability to grow our business.

- **Failure to protect our intellectual property rights could harm our competitive position and could adversely affect our future performance and growth.**

  Protection of our proprietary processes, methods, compounds, and other technologies is important to our business. We depend upon our ability to develop and protect our intellectual property rights to distinguish our products from those of our competitors. Failure to protect our existing intellectual property rights may result in the loss of valuable technologies or having to pay other companies for infringing on their intellectual property rights. An inability to continue using certain of our trademarks or service marks could result in the loss of brand recognition and could require us to devote additional resources to advertise, rebrand our products, and market our brands. See Item 1, “Business-Intellectual Property.”

  We rely on a combination of patent, trade secret, trademark, and copyright laws, as well as judicial enforcement, to protect our intellectual property and technologies. We cannot assure that the measures taken by us to protect these assets and rights will provide meaningful protection or that adequate remedies will be available in the event of an unauthorized use or disclosure of our trade secrets or manufacturing expertise. We cannot assure that any of our intellectual property rights will not be challenged, invalidated, circumvented, or rendered unenforceable. In addition, we have manufacturing operations in countries where we may not have the same strength of intellectual property protection and enforcement as in North America or Europe, resulting in a greater risk of a third party appropriating our intellectual property.

  Furthermore, we cannot assure that any pending patent application filed by us will result in an issued patent, or if patents are issued to us, that those patents will provide meaningful protection against competitors or against competitive technologies. We could face patent infringement claims from our competitors or others alleging that our processes or products infringe on their proprietary technologies. If we were found to be infringing on the proprietary technology of others, we may be liable for damages, and we may be required to change our processes, redesign our products partially or completely, pay to use the technology of others, or stop using certain technologies or producing the infringing product entirely. Even if we ultimately prevail in an infringement suit, the existence of the suit could prompt customers to switch to products that are not the subject of infringement suits. We may not prevail in any intellectual property litigation and such litigation may result in significant legal costs or otherwise impede our ability to produce and distribute key products.

  We also rely on unpatented proprietary manufacturing expertise, continuing technological innovation, trade secrets, and other intellectual property to develop and maintain our competitive position. While we generally enter into confidentiality agreements with our employees and third parties to protect our intellectual property, we cannot assure that our confidentiality agreements will not be breached, that they will provide meaningful protection for our trade secrets and proprietary manufacturing expertise, or that adequate remedies will be available in the event of an unauthorized use or disclosure of our trade secrets or manufacturing expertise.

  In addition, our trade secrets and know-how may be improperly obtained by other means, such as a breach of our information technology security systems or direct theft. Any unauthorized disclosure of our material know-how or trade secrets could adversely affect our business and results of operations.

- **An information technology system failure may adversely affect our business.**

  We rely on information technology systems, some of which are managed by third parties, to transact our business. An information technology system failure due to computer viruses, internal or external security breaches, cybersecurity attacks, power interruptions, hardware failures, fire, natural disasters, human error or other causes could disrupt our operations, lead to loss of confidential information (such as the personally identifiable information of individuals, including our employees) or intellectual property, and/or prevent us from being able to process transactions with our customers, operate our manufacturing facilities, and properly report transactions in a timely manner. Cybersecurity threats, in particular, continue to increase in sophistication. We have security processes and disaster recovery

plans in place to mitigate these threats. Nonetheless, these may not be sufficient to identify a threat in a timely manner or protect our operations from such a threat, potentially resulting in financial, legal, business, or reputational damage to our company.

A significant or protracted information technology system failure may adversely affect our results of operations, financial condition, or cash flows.

Furthermore, we are subject both to changing cybersecurity rules and evolving data privacy rules and regulations, such as the European Union's General Data Protection Regulation, in countries, states, and other jurisdictions where we conduct business. Any failure to comply with these rules and regulations could result in significant financial penalties and increase our cost of doing business.

- **The occurrence or threat of extraordinary events, including domestic or international terrorist attacks, war, armed hostilities, or health-related epidemics, may disrupt our operations, decrease demand for our products, and increase our expenses.**

  Chemical-related assets may be at greater risk of future terrorist attacks than other possible targets in the United States and throughout the world. Federal legislation has imposed significant site security requirements, specifically on chemical manufacturing facilities. Federal regulations have also been enacted to increase the security of the transportation of hazardous chemicals in the United States. The enactment of further federal regulations to increase the security of the transportation of hazardous chemicals in the United States could increase our cost of doing business.

  The occurrence of extraordinary events, including future terrorist attacks, the outbreak or escalation of war, armed hostilities, or a health-related epidemic cannot be predicted, but their occurrence can be expected to negatively affect the economy in general, as well as the markets for our products, and could result in production downtime. In addition, the damage from a direct attack on our facilities or other assets or facilities or other assets used by us could include loss of life or property damage, and our insurance coverage may not be sufficient to cover all of the damage incurred or securing coverage for these types of events may be prohibitively expensive.

- **The COVID-19 pandemic has had an impact on our financial results and could have a material adverse effect on our results of operations, financial position, and cash flows in the future.**

  The COVID-19 pandemic has created significant uncertainty and economic disruption. The extent to which it will continue to impact our business, results of operations, financial position, and cash flows is difficult to predict, varies by region, and is dependent upon many factors over which we have no control. These factors include, but are not limited to, the duration and severity of the pandemic; the effectiveness, acceptance, and speed of application of vaccines; government restrictions on businesses and individuals; the impact of the pandemic on our customers' businesses and the resulting demand for our products; the impact on our suppliers and supply chain network; the impact on U.S. and global economies and the timing and rate of economic recovery; and potential adverse effects on the financial markets.

- **We face risks related to our foreign operations that may negatively affect our business.**

  In 2022, sales to customers outside of the United States accounted for approximately 65% of consolidated net sales. We do business in all major regions of the world, some of which do not have stable economies or governments. In particular, we sell and market products in countries experiencing political and/or economic instability in the Middle East, Asia Pacific, Latin America, and Europe. Our international operations are subject to international business risks, including unsettled political conditions, war, expropriation, import and export restrictions, trade policies, increases in royalties, exchange controls, national and regional labor strikes, taxes, government royalties, inflationary or unstable economies, currency exchange rate fluctuations, and changes in laws and policies governing operations of foreign-based companies (such as restrictions on repatriation of earnings or proceeds from liquidated assets of foreign subsidiaries). The occurrence of any one or a combination of these factors may increase our costs or have other adverse effects on our business.

- **The insurance we maintain may not fully cover all potential exposures.**

  We maintain property, business interruption, and casualty insurance, but such insurance may not cover all risks associated with the hazards of our business and is subject to limitations, including deductibles and maximum liabilities covered. We may incur losses beyond the limits, or outside the coverage, of our insurance policies, including liabilities for environmental remediation. In the future, we may not be able to obtain coverage at current levels, and our premiums may increase significantly on coverage that we maintain.

Legislative and Regulatory Risks

- **Our business could be adversely affected by current and future governmental regulation.**

  We are subject to regulation by local, state, federal, and foreign governmental authorities. In some circumstances, before we may sell certain products, these authorities must approve these products, our manufacturing processes, and our facilities. We are also subject to ongoing reviews of our products, manufacturing processes, and facilities by governmental authorities. Any delay in obtaining or failure to obtain or maintain these approvals would adversely affect our ability to introduce new products and generate sales from those products.

  New laws and regulations, including climate change regulations and global tax legislation, may be introduced in the future and could result in additional compliance costs, which could prevent or inhibit the development, distribution, and sale of our products. If we fail to comply with applicable laws and regulations, we may be subject to civil remedies, including fines, injunctions, recalls, or seizures.

  We are subject to the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, and similar anti-bribery laws in other jurisdictions which generally prohibit companies and their intermediaries from making improper payments to foreign officials for the purpose of obtaining or retaining business. We are also subject to export and import laws and regulations which restrict trading with embargoed or sanctioned countries and certain individuals. Although we have policies and procedures designed to facilitate compliance with these laws and regulations, our employees, contractors and agents may take actions in violation of our policies. Any such violation, even if prohibited by our policies, could adversely affect our business and/or our reputation.

- **Legal proceedings and other claims could impose substantial costs on us.**

  We are involved in numerous administrative and legal proceedings that result from, and are incidental to, the conduct of our business. From time to time, these proceedings involve environmental, product liability, tetraethyl lead, premises asbestos liability, and other matters. See Item 3, "Legal Proceedings." There is no assurance that our available insurance will cover these claims, that our insurers will not challenge coverage for certain claims, or that final damage awards will not exceed our available insurance coverage.

  At any given time, we are involved in claims, litigation, administrative proceedings, and investigations of various types in a number of jurisdictions involving potential environmental liabilities, including clean-up costs associated with waste disposal sites, natural resource damages, property damage, and personal injury. We cannot assure that the resolution of these environmental matters will not have an adverse effect on our results of operations, financial condition, or cash flows.

- **Environmental matters could have a substantial negative impact on our business.**

  As a manufacturer and distributor of chemical products, we are generally subject to extensive local, state, federal, and foreign environmental, safety, and health laws and regulations concerning, among other things, emissions to the air; discharges to land and water; the generation, handling, treatment, and disposal of hazardous waste and other materials; and remediation of contaminated soil, as well as surface and ground water. Our operations entail the risk of violations of those laws and regulations, many of which provide for substantial fines and criminal sanctions for violations. We believe that we comply in all material respects with laws, regulations, statutes, and ordinances protecting the

environment, including those related to the discharge of materials. However, we cannot assure that we have been or will be at all times in compliance with all of these requirements.

In addition, these requirements, and the enforcement or interpretation of these requirements, may become more stringent in the future. Although we cannot predict the ultimate cost of compliance with any such requirements, the costs could be material. Noncompliance could subject us to material liabilities, such as government fines, damages arising from third-party lawsuits, or the suspension and potential cessation of non-compliant operations. We may also be required to make significant site or operational modifications at substantial cost. Future developments could also restrict or eliminate the use of or require us to make modifications to our products.

There may be environmental problems associated with our properties of which we are unaware. The discovery of environmental liabilities attached to our properties could have an adverse effect on our business even if we did not create or cause the problem.

We may also face liability arising from current or future claims alleging personal injury, product liability, or property damage due to exposure to chemicals or other hazardous substances, such as premises asbestos, at or from our facilities. We may also face liability for personal injury, product liability, property damage, natural resource damage, or clean-up costs for the alleged migration of contaminants or hazardous substances from our facilities or for future accidents or spills.

In some cases, we have been identified, and in the future may be identified, as a potentially responsible party (PRP) in connection with state and federal laws regarding environmental clean-up projects. As a PRP, we may be liable for a share of the costs associated with cleaning up hazardous waste sites, such as a landfill to which we may have sent waste.

The ultimate costs and timing of environmental liabilities are difficult to predict. Liability under environmental laws relating to contaminated sites can be imposed retroactively and on a joint and several basis. A liable party could be held responsible for all costs at a site, whether currently or formerly owned or operated, regardless of fault, knowledge, timing of the contamination, cause of the contamination, percentage of contribution to the contamination, or the legality of the original disposal. We could incur significant costs, including clean-up costs, natural resource damages, civil or criminal fines and sanctions, and third-party claims, as a result of past or future violations of, or liabilities under, environmental laws.

Financial and Economic Risks

- **A substantial amount of indebtedness could adversely impact our business and limit our operational and financial flexibility.**

We have incurred, and may in the future incur, substantial amounts of indebtedness to support our operations. To the degree that our indebtedness is at variable interest rates, increasing interest rates in the market will result in higher interest expense in our results of operations. Substantial amounts of indebtedness could, among other things, require us to dedicate a substantial portion of our cash flow to repaying and servicing our indebtedness, thus reducing the amount of funds available for other general corporate purposes; limit our ability to borrow additional funds necessary for working capital, capital expenditures or other general corporate purposes; and limit our flexibility in planning for, or reacting to, changes in our business.

Our ability to make payments on or refinance our indebtedness will depend on our ability to generate cash from operations in the future. This, to a certain extent, is subject to general economic, financial, competitive, legislative, regulatory, and other factors that are beyond our control.

We cannot guarantee that our business will generate sufficient cash flow from operations or that future borrowings will be available to us under our credit facilities in an amount sufficient to enable us to repay our debt, service our indebtedness, or to fund other liquidity needs. Furthermore, substantially all of our business is conducted through our subsidiaries, and we cannot guarantee that our subsidiaries will be able to distribute funds to us for these purposes.

We may need to refinance all or a portion of our indebtedness on or before maturity. We cannot guarantee that we will be able to refinance any of our indebtedness on commercially reasonable terms or at all.

Additionally, our debt instruments contain restrictive covenants. These covenants may constrain our activities and limit our operational and financial flexibility. Failure to comply with these covenants could result in an event of default.

In January 2023, we replaced LIBOR as an interest rate option under our revolving credit facility with the Secured Overnight Financing Rate (SOFR). The use of SOFR in place of LIBOR could result in an increase in the cost of borrowings under the revolving credit facility.

- **We are exposed to fluctuations in foreign exchange rates, which may adversely affect our results of operations.**

  We conduct our business in the local currency of many of the countries in which we operate. The financial condition and results of operations of our foreign operating subsidiaries are reported in the relevant local currency and then translated to U.S. Dollars at the applicable currency exchange rate for inclusion in our consolidated financial statements. Changes in exchange rates between these foreign currencies and the U.S. Dollar will affect the recorded amounts of our assets and liabilities, as well as our revenues, costs, and operating margins. The primary foreign currencies in which we have exchange rate fluctuation exposure are the European Union Euro, British Pound Sterling, Japanese Yen, Chinese Renminbi, Indian Rupee, Singapore Dollar, Mexican Peso, Australian Dollar, and Canadian Dollar. Exchange rates between these currencies and the U.S. Dollar have fluctuated significantly in recent years and may do so in the future.

- **We could be required to make additional contributions to our pension plans, which may be underfunded due to any underperformance of equity markets.**

  Our pension plan asset allocation is predominantly weighted towards equities. Cash contribution requirements to our pension plans are sensitive to changes in our plans' actual return on assets. Reductions in our plans' return on assets due to poor performance of equity markets could cause our pension plans to be underfunded and require us to make additional cash contributions.

Acquisition and Investment Risks

- **We may be unable to consummate a proposed acquisition transaction due to a lack of regulatory approval or the failure of one or more parties to satisfy conditions to close. In addition, we may not be able to realize the expected benefits from future acquisitions or from investments in our infrastructure, or it may take longer to realize those benefits than originally planned. The inability to achieve our objectives related to these activities could result in unanticipated expenses and losses.**

  As part of our business growth strategy, we intend to continue pursuing acquisitions and investing in our infrastructure. Our ability to implement these components of our growth strategy will be limited by our ability to identify appropriate acquisition or joint venture candidates; our ability to consummate proposed transactions, which may be subject to, among other things, regulatory approval or the parties satisfaction of conditions required for closing; and the availability of financial resources, including cash and borrowing capacity. When we acquire new businesses or invest in infrastructure improvements (for example, building new plant facilities), we consider the benefits we expect to realize and time frames over which we will realize those benefits. The expenses incurred in completing these types of activities, the time it takes to integrate the activities into our ongoing business, or our failure to realize the expected benefits from the activities in the planned time frames could result in unanticipated expenses and losses. The process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our principal operating properties are shown below. Unless indicated, we own the research, development, and testing facilities, as well as the manufacturing and distribution properties, which primarily support the petroleum additives business segment.

Research, Development, and Testing	Richmond, Virginia Bracknell, England Tsukuba, Japan Ashland, Virginia Suzhou, China
Manufacturing and Distribution	Feluy, Belgium *(lubricant additives; also storage and distribution)* Houston, Texas *(lubricant and fuel additives; also storage and distribution)* Jurong Island, Singapore *(lubricant and fuel additives; leased land)* Port Arthur, Texas *(lubricant additives)* Rio de Janeiro, Brazil *(lubricant and fuel additives storage and distribution; equipment is owned; building is leased)* San Juan del Rio, Mexico *(lubricant additives)* Sauget, Illinois *(lubricant additives)* Suzhou, China *(lubricant additives)*

We own our corporate headquarters located in Richmond, Virginia, and generally lease our regional and sales offices located in a number of areas worldwide.

NewMarket Development manages the real property we own in Richmond, Virginia consisting of approximately 50 acres. Our corporate offices are included in this acreage, as well as a research and testing facility and several acres dedicated to other uses. We are exploring various development opportunities for portions of the property as the demand warrants. This effort is ongoing in nature.

Production Capacity

We believe our plants and supply agreements are sufficient to meet expected sales levels. Operating rates of the plants vary with product mix and normal sales swings. We believe that our facilities are well maintained and in good operating condition.

ITEM 3. LEGAL PROCEEDINGS

We are involved in legal proceedings that are incidental to our business and may include administrative or judicial actions. Some of these legal proceedings involve governmental authorities and relate to environmental matters. For further information, see the Environmental section in Note 21.

While it is not possible to predict or determine with certainty the outcome of any legal proceeding, we believe the outcome of any of these proceedings, or all of them combined, will not result in a material adverse effect on our consolidated results of operations, financial condition, or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

Our common stock, with no par value, has traded on the New York Stock Exchange (NYSE) under the symbol "NEU" since June 21, 2004 when we became the parent holding company of Ethyl, Afton, NewMarket Services, NewMarket Development, and their subsidiaries. We had 1,862 shareholders of record at January 31, 2023.

On October 28, 2021, our Board of Directors approved a share repurchase program authorizing management to repurchase up to $500 million of NewMarket's outstanding common stock until December 31, 2024, as market conditions warrant and covenants under our existing debt agreements permit. We may conduct the share repurchases in the open market, in privately negotiated transactions, through block trades, or pursuant to trading plans intended to comply with Rule 10b5-1 and/or Rule 10b-18 of the Securities Exchange Act of 1934. The repurchase program does not require the Company to acquire any specific number of shares and may be terminated or suspended at any time. At December 31, 2022, approximately $274 million remained available under the 2021 authorization.

The following table outlines the purchases during the fourth quarter of 2022 under this authorization.

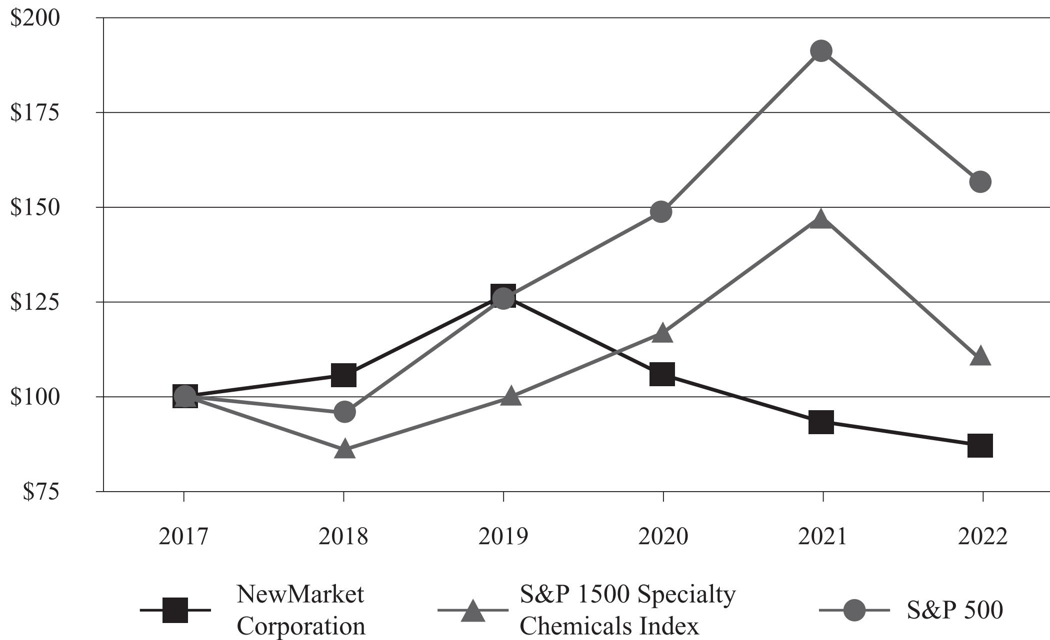
Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 to October 31	72,841	$305.95	72,841	$304,344,445
November 1 to November 30	31,676	312.30	31,676	294,452,135
December 1 to December 31	64,761	310.49	64,761	274,344,541
Total	169,278	$308.87	169,278	$274,344,541

Cash dividends declared and paid totaled $8.40 per share for the year ended December 31, 2022 and $8.00 per share for the year ended December 31, 2021. The declaration and payment of dividends is subject to the discretion of our Board of Directors. Future dividends will depend on various factors, including our financial condition, earnings, cash requirements, legal requirements, restrictions in agreements governing our outstanding indebtedness, and other factors deemed relevant by our Board of Directors.

The performance graph showing the five-year cumulative total return on our common stock as compared to chemical companies in the S&P 1500 Specialty Chemicals Index and the S&P 500 is shown below. The graph assumes $100 invested on the last day of December 2017, and the reinvestment of all dividends. The graph is based on historical data and is not intended to be a forecast or indication of future performance of our common stock.

Performance Graph
Comparison of Five-Year Cumulative Total Return
Performance Through December 31, 2022



	December 31,					
	2017	**2018**	**2019**	**2020**	**2021**	**2022**
NewMarket Corporation	$100.00	$105.52	$126.64	$105.78	$ 93.16	$ 86.92
S&P 1500 Specialty Chemicals Index	100.00	85.82	98.98	116.69	147.47	109.70
S&P 500	100.00	95.62	125.72	148.85	191.58	156.88

The graph and table above are not deemed “filed” with the SEC for purposes of Section 18 of the Exchange Act or otherwise subject to the liabilities of that section, nor are they incorporated by reference into other filings made by us with the SEC.

ITEM 6. RESERVED

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

Forward-Looking Statements

The following discussion, as well as other discussions in this Annual Report on Form 10-K, contains forward-looking statements about future events and expectations within the meaning of the Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements on our current expectations and projections about future results. When we use words in this document such as "anticipates," "intends," "plans," "believes," "estimates," "projects," "expects," "should," "could," "may," "will," and similar expressions, we do so to identify forward-looking statements. Examples of forward-looking statements include, but are not limited to, statements we make regarding future prospects of growth in the petroleum additives market, other trends in the petroleum additives market, our ability to maintain or increase our market share, and our future capital expenditure levels.

We believe our forward-looking statements are based on reasonable expectations and assumptions, within the bounds of what we know about our business and operations. However, we offer no assurance that actual results will not differ materially from our expectations due to uncertainties and factors that are difficult to predict and beyond our control.

Factors that could cause actual results to differ materially from expectations include, but are not limited to, the availability of raw materials and distribution systems; disruptions at production facilities, including single-sourced facilities; hazards common to chemical businesses; the ability to respond effectively to technological changes in our industry; failure to protect our intellectual property rights; sudden, sharp, or prolonged raw material price increases; competition from other manufacturers; current and future governmental regulations; the loss of significant customers; failure to attract and retain a highly-qualified workforce; an information technology system failure or security breach; the occurrence or threat of extraordinary events, including natural disasters, terrorist attacks, wars, and health-related epidemics such as the COVID-19 pandemic; risks related to operating outside of the United States; political, economic, and regulatory factors concerning our products; the impact of substantial indebtedness on our operational and financial flexibility; the impact of fluctuations in foreign exchange rates; resolution of environmental liabilities or legal proceedings; limitation of our insurance coverage; our inability to realize expected benefits from investment in our infrastructure or from future acquisitions, or our inability to successfully integrate future acquisitions into our business; and the underperformance of our pension assets resulting in additional cash contributions to our pension plans. Risk factors are discussed in Item 1A. "Risk Factors."

You should keep in mind that any forward-looking statement made by us in this discussion or elsewhere speaks only as of the date on which we make it. New risks and uncertainties arise from time to time, and it is impossible for us to predict these events or how they may affect us. We have no duty to, and do not intend to, update or revise the forward-looking statements in this discussion after the date hereof, except as may be required by law. In light of these risks and uncertainties, any forward-looking statement made in this discussion or elsewhere, might not occur.

OVERVIEW

When comparing the results of the petroleum additives segment for 2022 with 2021, net sales increased 17.5% primarily due to higher selling prices, partially offset by decreases in product shipments and an unfavorable foreign currency impact. Petroleum additives operating profit was 34.6% higher when comparing 2022 with 2021, reflecting the higher selling prices that favorably impacted net sales, partially offset by significantly higher raw material costs and higher operating costs during 2022, including costs for utilities, logistics, insurance, and third-party manufacturing services. A full discussion and comparison of our 2022 and 2021 results follows this overview.

We also believe that it is useful to consider our 2022 results versus those of 2019, as the last three years have been characterized by unprecedented factors, including the impact of the COVID-19 pandemic, worldwide supply chain disruptions, inflation, and war. The 2019 results were the last full year before these factors impacted our operating results. Petroleum additives net sales in 2022 were $578 million higher than in 2019, an increase of 26%. Petroleum additives operating profit in 2022 was $19 million higher, an increase of 5% over 2019, and shipments were 2.8% higher in 2022 than in 2019. The petroleum additives operating margin for 2022 was 13.7% versus 16.5% for 2019.

During 2022, we also repurchased 668,553 shares of our common stock for a total of $207 million, redeemed our 4.10% senior notes, and sold all of our marketable securities.

Our operations generate cash that is in excess of the needs of the business. We continue to invest in and manage our business for the long-term with the goal of helping our customers succeed in their marketplaces. Our investments continue to be in organizational talent, technology development and processes, and global infrastructure, consisting of technical centers, production capability, and geographic expansion.

IMPACT OF THE CURRENT ECONOMIC ENVIRONMENT

As mentioned above, the economic environment in which we operated during 2022 was characterized by steadily rising costs, including raw material costs, limitations on certain supply availability, and a challenging global supply chain network. Because of our active business continuity process and global network, we were able to substantially manage through these factors during the year. We made good progress during the year towards resolving our supply chain issues in order to better meet our customers' growing needs, and we will continue working with our customers to deliver products. At the same time, while we are beginning to see some stabilization in the marketplace, we also expect to be challenged by these economic factors as we manage our business in 2023.

In addition to the general inflationary environment in which we operate, the Russia-Ukraine war has introduced additional challenges to our business. While this conflict has not had a material impact on our financial results for 2022, numerous countries have imposed sanctions against Russia. We are complying with these sanctions.

Despite the challenging economic environment, our financial position remains strong. We have sufficient access to capital, if needed, and do not anticipate any issues with meeting the covenants for all our debt agreements. Our major capital projects are continuing to progress substantially as planned.

The chemical industry and our products are essential for transportation of people, goods, and services. Our business continuity planning process focuses our efforts on managing through this challenging time and helping our customers do the same.

RESULTS OF OPERATIONS

Management's discussion and analysis of our results of operations is presented below for the comparative periods of 2022 versus 2021. The discussion and analysis of our results of operations for 2021 compared to 2020 is available in Item 7 of our 2021 Annual Report on Form 10-K.

Net Sales

Our consolidated net sales for 2022 amounted to $2.8 billion, an increase of $409 million, or 17.3% from 2021.

No single customer accounted for 10% or more of our total net sales in 2022, 2021, or 2020.

The following table shows net sales by segment and product line for each of the last three years.

(in millions)	Years Ended December 31, 2022	2021	2020
Petroleum additives			
Lubricant additives	$2,342	$1,999	$1,687
Fuel additives	412	345	315
Total	2,754	2,344	2,002
All other	11	12	9
Consolidated revenue	$2,765	$2,356	$2,011

Petroleum Additives - The regions in which we operate include North America (the United States and Canada), Latin America (Mexico, Central America, and South America), Asia Pacific, and the Europe/Middle East/Africa/India (EMEAI) region. The percentage of net sales being generated in the regions has remained fairly consistent over the past three years, with some limited fluctuation due to various factors, including the impact of regional economic trends. North America represents around 35% of our petroleum additives net sales, while EMEAI contributes about 30%, Asia Pacific about 25%, and Latin America the remaining amount. As shown in the table above, lubricant additives net sales and fuel additives net sales compared to total petroleum additives net sales has remained substantially consistent over the past three years.

Petroleum additives net sales for 2022 of $2.8 billion were approximately 17.5% higher than 2021 levels. The increase was across all regions. The North America region represented approximately 54% of the petroleum additives increase in net sales, EMEAI represented approximately 23%, the Latin America region represented approximately 13%, and the Asia Pacific region represented approximately 10%.

The approximate components of the petroleum additives increase in net sales of $410 million when comparing 2022 to 2021 are shown below in millions.

Net sales for year ended December 31, 2021	$2,344
Lubricant additives shipments	(50)
Fuel additives shipments	(18)
Selling prices	536
Foreign currency impact, net	(58)
Net sales for year ended December 31, 2022	$2,754

When comparing 2022 with 2021, higher selling prices were the predominant factor in the increase in petroleum additives net sales. The higher selling prices were partially offset by lower shipments for both lubricant additives and fuel additives products, as well as an unfavorable impact from foreign currency exchange rates. The United States Dollar strengthened against all of the major currencies in which we transact with the majority of the unfavorable impact arising from net sales denominated in the Euro and the Japanese Yen.

On a worldwide basis, the volume of product shipments for petroleum additives decreased 2.9% when comparing 2022 with 2021. The worldwide decrease in petroleum additives shipments primarily resulted from lower lubricant additives shipments, with a small decrease in fuel additives shipments. The primary contributors to the decline in shipments were due to supply chain disruptions and new sanctions introduced during 2022 as a result of the Russia-Ukraine war. The decrease in lubricant additives shipments when comparing 2022 with 2021 was across all regions except for EMEAI, which was substantially unchanged between the two years. Most of the decrease in lubricant additives shipments was in the Asia Pacific region with smaller decreases in North America and Latin America. The decrease in fuel additives shipments when comparing 2022 and 2021 was in the EMEAI and Asia Pacific regions, which was partially offset by shipment increases in North America and Latin America.

All Other - The "All other" category includes the operations of the antiknock compounds business, and certain contracted manufacturing and services performed by Ethyl.

Segment Operating Profit

NewMarket evaluates the performance of the petroleum additives business based on segment operating profit. NewMarket Services expenses are charged to each subsidiary pursuant to services agreements between the companies. Depreciation on segment property, plant, and equipment, as well as amortization of segment intangible assets and lease right-of-use assets, is included in segment operating profit.

The following table reports segment operating profit for the last three years. A reconciliation of segment operating profit to income before income tax expense is in Note 4.

	Years Ended December 31,		
(in millions)	**2022**	**2021**	**2020**
Petroleum additives	$378	$281	$333
All other	$ (2)	$ (1)	$ 0

Petroleum Additives - Petroleum additives segment operating profit increased $97 million and gross profit increased $86 million when comparing 2022 to 2021. Cost of goods sold as a percentage of net sales was 76.8% in 2022 and 76.7% in 2021. The operating profit margin was 13.7% in 2022 and 12.0% in 2021.

When comparing 2022 and 2021, both operating profit and gross profit included the favorable impact of significantly higher selling prices, which were partially offset by significantly higher raw material costs. Operating and conversion costs were also unfavorable.

Throughout most of 2021, we experienced declining operating margins due mainly to the prolonged period of escalating raw material costs. While raw material costs, along with other operating costs, increased in 2022, we were able to make adjustments to selling prices resulting in some improvement in margins. Nonetheless, we remain challenged by the ongoing inflationary environment and continue to experience a lag between when price increases go into effect and when margin recovery is realized. This lag will continue until raw material costs, as well as other operating costs, stabilize.

In this uncertain economic environment of continuing increasing costs, operating profit margins are a priority for us. Margin recovery and cost control will remain priorities throughout 2023. While operating margins will fluctuate from quarter to quarter due to multiple factors, we believe the fundamentals of our business and industry as a whole are unchanged.

Petroleum additives selling, general, and administrative expenses (SG&A) were $0.4 million, or 0.3% lower in 2022 compared to 2021. SG&A as a percentage of net sales was 4.4% in 2022 and 5.2% in 2021. Our SG&A costs are primarily personnel-related and include salaries, benefits and other costs associated with our workforce, including travel-related expenses. While personnel-related costs fluctuate from year to year, there were no significant changes in the drivers of these costs when comparing 2022 and 2021.

Our investment in petroleum additives research, development, and testing (R&D) decreased approximately $4 million when comparing 2022 with 2021. As a percentage of net sales, R&D was 5.1% in 2022 and 6.1% in 2021. Our R&D investments reflect our efforts to support the development of solutions that meet our customers' needs, meet new and evolving standards, and support our expansion into new product areas. Our approach to R&D investments, as it is with SG&A, is one of purposeful spending on programs to support our current product base and to ensure that we develop products to support our customers' programs in the future. R&D investments include personnel-related costs, as well as costs for internal and external testing of our products. Substantially all

investments in new product development are incurred in the United States and the U.K., with approximately 70% of total R&D being attributable to the North America and EMEAI regions. The remaining R&D is attributable to the Asia Pacific and Latin America regions and represents customer technology support services in those regions. All of our R&D is related to the petroleum additives segment.

The following discussion references certain captions on the Consolidated Statements of Income.

Interest and Financing Expenses

Interest and financing expenses were $35 million in 2022 and $34 million in 2021. The increase in interest and financing expense between 2022 and 2021 resulted primarily from lower capitalized interest. The average interest rate was lower in 2022 resulting in a favorable impact to interest and financing expenses but was substantially offset by an unfavorable impact from higher outstanding debt in 2022 than in 2021.

Other Income (Expense), Net

Other income (expense), net was income of $35 million in 2022 and $24 million in 2021. The amounts for both periods included the components of net periodic benefit cost (income), except for service costs, from defined benefit pension and postretirement plans. See Note 18 for further information on total periodic benefit cost (income). The 2022 amount included a loss on marketable securities of $3 million compared to a loss of $7 million on marketable securities in 2021.

Income Tax Expense

Income tax expense was $68 million in 2022 and $57 million in 2021. The effective tax rate was 19.6% in 2022 and 22.9% in 2021. When comparing 2022 and 2021, income tax expense increased $23 million due to the higher income before income taxes, partially offset by a lower effective tax rate, which resulted in a decrease of $12 million in income tax expense. The decrease in the effective tax rate was primarily the result of the impact from our foreign operations.

CASH FLOWS DISCUSSION

We generated cash from operating activities of $109 million in 2022 and $165 million in 2021.

During 2022, we used the $109 million of cash generated from operations along with the proceeds of $373 million from the sale of marketable securities, $213 million of borrowings under the revolving credit facility, and $15 million of cash on hand to redeem $350 million of our 4.10% senior notes, repurchase $207 million of our common stock, pay $84 million of dividends on our common stock, and fund $56 million of capital expenditures. Cash flows from operating activities included a decrease of $205 million from higher working capital requirements, which is further discussed in the Working Capital section below, and cash contributions of $10 million to our pension and postretirement plans.

During 2021, we used the $165 million cash generated from operations along with proceeds of $395 million from the issuance of 2.70% senior notes, $148 million of borrowings under the revolving credit facility, and cash on hand of $42 million to invest $382 million in marketable securities, repurchase $196 million of our common stock, pay $86 million of dividends on our common stock, and fund capital expenditures of $79 million. Cash flows from operating activities included cash contributions of $10 million to our pension and postretirement plans, as well as a decrease of $116 million from higher working capital requirements.

FINANCIAL POSITION AND LIQUIDITY

Cash

At December 31, 2022, we had cash and cash equivalents of $69 million as compared to $83 million at the end of 2021.

Cash and cash equivalents held by our foreign subsidiaries amounted to approximately $65 million at December 31, 2022 and $81 million at December 31, 2021. Periodically, we repatriate cash from our foreign subsidiaries to the United States through intercompany dividends and loans. We do not anticipate significant tax consequences of future distributions of foreign earnings.

A portion of our foreign cash balances is associated with earnings that we have asserted are indefinitely reinvested. We plan to use these indefinitely reinvested earnings to support growth outside of the United States through funding of operating expenses, research and development expenses, capital expenditures, and other cash needs of our foreign subsidiaries.

Debt

A summary of our debt instruments follows. A full discussion is in Note 14.

2.70% Senior Notes - On March 18, 2021, we issued $400 million aggregate principal amount of 2.70% senior notes due 2031 at an issue price of 98.763%. We used the net proceeds from the offering for the repayment or redemption of our 4.10% senior notes and for general corporate purposes. We incurred financing costs in 2021 of approximately $4 million related to the 2.70% senior notes, which are being amortized over the term of the notes. We were in compliance with all covenants under the indenture governing the 2.70% senior notes as of December 31, 2022 and December 31, 2021.

4.10% Senior Notes - At December 31, 2021, we had $350 million of 4.10% senior notes due 2022 with interest payable semiannually and which were senior unsecured obligations. On March 15, 2022, we redeemed the 4.10% senior notes at a redemption price of 100% of the principal amount of $350 million plus the accrued and unpaid interest on the notes and the applicable premium as outlined in the Indenture dated December 20, 2012. The 4.10% senior notes were due December 2022. We recognized a loss of $7.5 million on the early extinguishment including cash paid of $7.1 million for the premium on the early redemption and a write-off of $0.4 million of unamortized deferred financing costs. We were in compliance with all covenants under the indenture governing the 4.10% senior notes as of December 31, 2021.

3.78% Senior Notes - On January 4, 2017, we issued $250 million in senior unsecured notes in a private placement with The Prudential Insurance Company of America and certain other purchasers. These notes bear interest at 3.78% and mature on January 4, 2029. Interest is payable semiannually. Principal payments of $50 million are payable annually beginning on January 4, 2025. We have the right to make optional prepayments on the notes at any time, subject to certain limitations. We were in compliance with all covenants under the 3.78% senior notes as of December 31, 2022 and December 31, 2021.

Revolving Credit Facility – On March 5, 2020, NewMarket and certain foreign subsidiary borrowers entered into a Credit Agreement (the Credit Agreement) with a term of five years. The Credit Agreement provides for a $900 million, multicurrency revolving credit facility with a $500 million sublimit for foreign currency borrowings, a $50 million sublimit for letters of credit, and a $20 million sublimit for swingline loans. The Credit Agreement includes an expansion feature which allows us, subject to certain conditions, to request an increase in the aggregate amount of the revolving credit facility or obtain incremental term loans in an amount up to $425 million. NewMarket's obligations under the Credit Agreement are unsecured and the obligations of foreign subsidiary borrowers are fully and unconditionally guaranteed by NewMarket. The revolving credit facility is available on a revolving basis until March 5, 2025. Effective January 11, 2023, the revolving credit facility was amended to eliminate the use of LIBOR on borrowings, replacing it with SOFR.

There was $361 million outstanding borrowings under the revolving credit facility at December 31, 2022 compared to $148 million outstanding borrowings at December 31, 2021. Outstanding letters of credit amounted to $2 million at both December 31, 2022 and December 31, 2021 resulting in the unused portion of the applicable credit facility amounting to $537 million at December 31, 2022 and $750 million at December 31, 2021.

The average interest rate for borrowings under the credit facilities was 3.5% during 2022 and 1.6% during 2021.

The Credit Agreement contains financial covenants that require NewMarket to maintain a consolidated Leverage Ratio (as defined in the Credit Agreement) of no more than 3.75 to 1.00 except during an Increased Leverage Period (as defined in the Credit Agreement). At December 31, 2022, the Leverage Ratio was 2.23. We were in compliance with all covenants under the revolving credit facility at December 31, 2022 and at December 31, 2021.

Other Borrowings - Two of our subsidiaries in Singapore and China each have access to separate short-term lines of credit of $10 million. One of our subsidiaries in the U.K. has access to a short-term line of credit of 10 million Euro. There was no activity on these lines of credit in 2022 or 2021.

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We had long-term debt of $1.0 billion at December 31, 2022 and $1.1 billion at December 31, 2021. The small decrease in debt resulted from the redemption of the 4.10% senior notes which was mostly offset by additional borrowings on the revolving credit facility during 2022.

As a percentage of total capitalization (total long-term debt and shareholders' equity), our total long-term debt percentage decreased from 59.9% at the end of 2021 to 56.8% at the end of 2022. The change in the percentage was primarily the result of the decrease in long-term debt, along with a small increase in shareholders' equity. The change in shareholders' equity primarily reflects our earnings and an increase in the funded position of our defined benefit plans mostly offset by stock repurchases, dividend payments, and the impact of the foreign currency translation adjustment. Normally, we repay any outstanding long-term debt with cash from operations or refinancing activities.

Working Capital

Including cash and cash equivalents and the impact of foreign currency on the balance sheet, at December 31, 2022, we had working capital of $768 million, resulting in a current ratio of 2.81 to 1. Our working capital at December 31, 2021 on the same basis was $663 million, resulting in a current ratio of 1.91 to 1.

The most significant change in working capital since December 31, 2021 included a decrease in marketable securities, which was mostly offset by the decrease in the current portion of long-term debt due to the redemption of the 4.10% senior notes in March 2022. In addition to these items, cash and cash equivalents decreased as outlined in the cash flows discussion above, while accounts receivable, inventories, and accounts payable all increased.

Trade accounts receivable balances increased when compared to December 31, 2021 resulting primarily from higher selling prices this year. The increase in inventories was primarily caused by higher raw material costs, as well as an increase in quantities. The increase in accounts payable reflected higher costs, including raw material costs, as well as normal fluctuations across the regions.

Capital Expenditures

Capital expenditures were $56 million for 2022 and $79 million for 2021. We currently estimate capital expenditures in 2023 will be in the range of $70 million to $80 million as we anticipate spending on several improvements to our manufacturing and R&D infrastructure around the world. We expect to continue to finance capital spending through cash provided from operations, as well as with borrowing available under our revolving credit facility.

Environmental Expenses

We spent approximately $37 million in 2022 and $35 million in 2021 for ongoing environmental operating and clean-up costs, excluding depreciation of previously capitalized expenditures. These environmental operating and

clean-up expenses are included in cost of goods sold. We expect to continue to fund these costs through cash provided by operations.

Liquidity and Contractual Obligations

We have both current and long-term obligations that have known payment streams and are discussed throughout this Annual Report on Form 10-K. These include debt-related obligations, lease obligations, purchase commitments, including those for property, plant, and equipment, contributions to pension and postretirement benefit plans, and environmental dismantling and decontamination.

The debt-related contractual obligations include both principal payments on outstanding long-term debt and the related interest payments. The maturity dates and interest rates, as well as information on the repayment of the principal on our long-term debt is detailed above in the Debt section, as well as in Note 14. At December 31, 2022, all of our long-term debt was at fixed rates, except for the revolving credit facility. Interest is paid semi-annually on our fixed rate long-term debt agreements.

LIBOR will be completely eliminated in the market by June 2023. Until January 11, 2023 when we amended our revolving credit facility, LIBOR was utilized in establishing interest rates on the revolving credit facility. With new borrowings after January 11, 2023, our revolving credit facility uses SOFR in place of LIBOR to establish interest rates on borrowings under the revolving credit facility.

Note 17 provides information by year on our lease obligations which have commenced, as well as lease commitments which have not yet commenced. Note 18 includes information on contributions to pension and postretirement benefit plans, as well as benefit payments to participants. Benefit payments under these plans are predominantly paid from assets held in trust. Further information on purchase commitments, including those for purchases of property, plant, and equipment, is in Note 21.

The annual operating expenses and capital expenditures associated with compliance with environmental, health, and safety regulations are included in Item 1, Governmental and Environmental Regulations. In addition to these costs, there are expected cash flows for dismantling and decontamination of environmental sites. At December 31, 2022, these costs were estimated at $1 million in each of 2023 through 2027, and $9 million thereafter.

We expect that cash from operations, together with borrowing available under our credit facilities, will continue to be sufficient for our operating needs and planned capital expenditures for both a short-term and long-term horizon.

Pension and Postretirement Benefit Plans

Our U.S. and foreign benefit plans are discussed separately below. The information applies to all of our U.S. benefit plans. Our foreign plans are quite diverse, and the actuarial assumptions used by the various foreign plans are based upon the circumstances of each particular country and retirement plan. We use a December 31 measurement date to determine our pension and postretirement expenses and related financial disclosure information. Additional information on our pension and postretirement plans is in Note 18.

U.S. Pension and Postretirement Benefit Plans—The average remaining service period of active participants for our U.S. plans is 13.2 years, while the average remaining life expectancy of inactive participants is 22.7 years. We utilize the sex distinct Pri-2012 table with separate rates for annuitants, non-annuitants, and contingent annuitants, projected generationally using Scale MP-2021 in determining the impact of the U.S. benefit plans on our financial statements.

Investment Return Assumptions and Asset Allocation—We periodically review our assumptions for the long-term expected return on pension plan assets. As part of the review and to develop expected rates of return, we

considered an analysis of expected returns based on the U.S. plans' asset allocation as of both January 1, 2023 and January 1, 2022. This analysis reflects our expected long-term rates of return for each significant asset class or economic indicator. The range of returns developed relies both on forecasts and on broad-market historical benchmarks for expected return, correlation, and volatility for each asset class. The asset allocation for our U.S. pension plans is predominantly weighted toward equities. Through the ongoing monitoring of our investments and review of market data, we have determined that we should maintain the expected long-term rate of return for our U.S. pension plans at 8.0% at December 31, 2022.

An actuarial loss on the assets occurred during 2022 as the actual investment return for all of our U.S. qualified pension plans was less than the expected return by $149 million. An actuarial gain on the assets occurred during 2021 as the actual investment return for all of our U.S. qualified pension plans exceeded the expected return by approximately $83 million. Investment gains and losses are recognized in earnings on an amortized basis over a period of 5 years. The amortization of the actuarial net gain is expected to be approximately $2 million in 2023 resulting primarily from the actuarial gain related to the increase in discount rate, which was only partially offset by actuarial losses on plan assets. We expect that there will be continued volatility in pension expense as actual investment returns vary from the expected return, but we continue to believe the potential long-term benefits justify the risk premium for equity investments.

At December 31, 2022, our expected long-term rate of return on our postretirement plans was 4.0%. This rate varies from the pension rate of 8.0% primarily because of the difference in investment of assets. The assets of the postretirement plan are held in an insurance contract, which results in a lower assumed rate of investment return.

Pension expense and the life insurance portion of postretirement expense are sensitive to changes in the expected return on assets. For example, decreasing the expected rate of return by 100 basis points to 7.0% for pension assets and 3.0% for postretirement benefit assets (while holding other assumptions constant) would increase the forecasted 2023 expense for our U.S. pension and postretirement plans by approximately $6 million. Similarly, a 100 basis point increase in the expected rate of return to 9.0% for pension assets and 5.0% for postretirement benefit assets (while holding other assumptions constant) would reduce forecasted 2023 pension and postretirement expense by $6 million.

Discount Rate Assumption—We develop the discount rate assumption by determining the single effective discount rate for a unique hypothetical portfolio constructed from investment-grade bonds that, in the aggregate, match the projected cash flows of each of our retirement plans. The discount rate is developed based on the hypothetical portfolio on the last day of December. The discount rate at December 31, 2022 was 5.625% for all plans.

Pension and postretirement benefit expense is also sensitive to changes in the discount rate. For example, decreasing the discount rate by 100 basis points to 4.625% (while holding other assumptions constant) would increase the forecasted 2023 expense for our U.S. pension and postretirement benefit plans by approximately $4 million. A 100 basis point increase in the discount rate to 6.625% (while holding other assumptions constant) would reduce forecasted 2023 pension and postretirement benefit expense by approximately $4 million.

Rate of Projected Compensation Increase—We have maintained our rate of projected compensation increase at December 31, 2022 at 3.5%. The rate assumption was based on an analysis of our projected compensation increases for the foreseeable future.

Liquidity—Cash contribution requirements to the pension plan are sensitive to changes in assumed interest rates and investment gains or losses in the same manner as pension expense. While we do not expect to make a cash contribution to our U.S. qualified pension plans, we expect our aggregate cash contributions to the U.S. pension plans will be approximately $3 million in 2023. We expect our contributions to the postretirement benefit plans will be approximately $2 million in 2023.

Foreign Pension Benefit Plans—Our foreign pension plans are quite diverse. The following information applies only to our U.K. pension plan, which represents the majority of the amounts recorded in our financial statements

for our foreign pension plans. The average remaining service period of active participants for our U.K. plan is 14 years, while the average remaining life expectancy of inactive participants is 22 years. In determining the impact of the U.K. pension plans on our financial statements, we utilize the S3P (Light) mortality tables weighted by 103% for males and 106% for females and allow for future projected improvements in life expectancy in line with the CMI 2021 model with the core smoothing parameter, an initial addition to mortality improvements of 0.3% per year, and an experience weighting of 7.5% on 2020 and 2021 data, with a long-term rate of improvement of 1% per year based on the membership of the plan.

Investment Return Assumptions and Asset Allocation—We periodically review our assumptions for the long-term expected return on the U.K. pension plan assets. The expected long-term rate of return is based on both the asset allocation and yields available in the U.K. markets.

The target asset allocation in the U.K. is 40% in pooled equities funds, 40% in pooled government bonds, and 20% in pooled diversified growth funds. The actual allocation at the end of 2022 was 47% in pooled equities funds, 32% in pooled government bonds, and 21% in pooled diversified growth funds. Based on the actual asset allocation and the expected yields available in the U.K. markets, the expected long-term rate of return for the U.K. pension plan was 6.7% at December 31, 2022.

An actuarial loss on the assets occurred during 2022 as the actual investment return was less than the expected investment return by approximately $44 million. An actuarial gain on the assets occurred during 2021 as the actual investment return exceeded the expected investment return by approximately $8 million. Investment gains and losses are recognized in earnings on an amortized basis over a period of years. The combined investment loss and actuarial gain on plan liabilities results in no expected amortization in 2023. We expect that there will be continued volatility in pension expense as actual investment returns vary from the expected return, but we continue to believe the potential benefits justify the risk premium for the target asset allocation.

Pension expense is sensitive to changes in the expected return on assets. For example, decreasing the expected rate of return by 100 basis points to 5.7% (while holding other assumptions constant) would increase the forecasted 2023 expense for our U.K. pension plan by approximately $2 million. Similarly, a 100 basis point increase in the expected rate of return to 7.7% (while holding other assumptions constant) would reduce forecasted 2023 pension expense by approximately $2 million.

Discount Rate Assumption—We utilize a yield curve based on AA-rated corporate bond yields in developing a discount rate assumption. The yield appropriate to the duration of the U.K. plan liabilities is then used. The discount rate at December 31, 2022 was 4.8%.

Pension expense is also sensitive to changes in the discount rate. For example, decreasing the discount rate by 100 basis points to 3.8% (while holding other assumptions constant) would increase the forecasted 2023 expense for our U.K. pension plans by approximately $0.5 million. A 100 basis point increase in the discount rate to 5.8% (while holding other assumptions constant) would reduce forecasted 2023 pension expense by approximately $0.4 million.

Rate of Projected Compensation Increase—Our rate of projected compensation increase at December 31, 2022 is 3.5%. The rate assumption was based on an analysis of our projected compensation increases for the foreseeable future.

Liquidity—Cash contribution requirements to the U.K. pension plan are sensitive to changes in assumed interest rates and investment gains or losses. We expect our aggregate U.K. cash contributions will be approximately $4 million in 2023.

OUTLOOK

Our stated goal is to provide a 10% compounded return per year for our shareholders over any five-year period (defined by earnings per share growth plus dividend yield), although we may not necessarily achieve a 10%

return each year. We continue to have confidence in our customer-focused strategy and approach to the market. We believe the fundamentals of how we run our business—a long-term view, safety-first culture, customer-focused solutions, technology-driven product offerings, and world-class supply chain capability—will continue to be beneficial for all of our stakeholders over the long term.

We expect our petroleum additives segment to experience impacts to its operating performance due to the current economic environment, as we continue to see challenges with the global supply network, inflationary trends, and raw material price escalation and volatility. We expect that the petroleum additives market will grow in the 1% to 2% range annually for the foreseeable future. We plan to exceed that growth rate over the long-term.

Over the past several years we have made significant investments in our business as the industry fundamentals remain positive. These investments have been and will continue to be in organizational talent, technology development and processes, and global infrastructure, consisting of technical centers, production capability and geographic expansion. We intend to utilize these investments to improve our ability to deliver the solutions that our customers value, expand our global reach, and enhance our operating results. We will continue to invest in our capabilities to provide even better value, service, technology, and customer solutions.

Our business generates significant amounts of cash beyond its operational needs. We regularly review our many internal opportunities to utilize excess cash from technological, geographic, production capability, and product line perspectives. We believe our capital spending is creating the capability we need to grow and support our customers worldwide, and our research and development investments are positioning us well to provide added value to our customers. Our primary focus in the acquisition area remains on the petroleum additives industry. It is our view that this industry segment will provide the greatest opportunity for solid returns on our investments while minimizing risk. We remain focused on this strategy and will evaluate any future opportunities. We will continue to evaluate all alternative uses of cash to enhance shareholder value, including stock repurchases and dividends.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The following discussion highlights some of the more critical areas where a significant change in facts and circumstances in our operating and financial environment could cause a change in future reported financial results.

Income Taxes

We file United States, foreign, state, and local income tax returns. Significant judgment is required in determining our worldwide provision for income taxes and recording the related tax assets and liabilities. Any significant impact as a result of changes in underlying facts, law, tax rates, or tax audits could lead to adjustments to our income tax expense, effective tax rate, financial position, or cash flow.

Deferred income taxes are provided for the estimated income tax effect of temporary differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities, as well as for net operating losses and tax credit carryforwards. When recording these deferred tax assets and liabilities, we must estimate the tax rates we expect will apply to taxable income in the periods in which the deferred tax liability or asset is expected to be settled or realized. In addition, we may record valuation allowances to reduce deferred tax assets if it is more likely than not that some portion or all of the deferred tax assets will not be realized. Judgment is required as we consider the scheduled reversal of deferred tax assets and liabilities, projected future taxable income, and tax planning strategies in making this assessment. If our estimates and assumptions change from those used when we recorded deferred tax assets and liabilities, the effect on our results of operations and financial position could be material.

The income tax returns for our entities in the United States and in foreign jurisdictions are open for examination by tax authorities. We assess our income tax positions and record a liability for all years open for examination

based upon our evaluation of the facts, circumstances, and information available at the reporting date. The economic benefit associated with a tax position will be recognized only if we determine it is more likely than not to be upheld on audit. Although we believe our estimates and judgments are reasonable, actual results could differ, resulting in gains or losses that may be material to our results of operations and financial position.

At each interim reporting period, we estimate an effective income tax rate that is expected to be applicable for the full year. Our provision for income taxes is impacted by the income tax rates of the countries where we operate. A change in the geographical source of our income can affect the effective tax rate. Significant judgment is involved regarding the application of global income tax laws and regulations when projecting the jurisdictional mix of income. Additionally, interpretations of tax laws, court decisions, or other guidance provided by taxing authorities influence our estimate of the effective income tax rate. As a result, our actual effective income tax rate and related income tax liabilities may differ materially from our estimated effective tax rate and related income tax liabilities.

Intangibles (net of amortization) and Goodwill

We have certain identifiable intangibles amounting to $2 million and goodwill amounting to $124 million at December 31, 2022 that are discussed in Note 11. These intangibles and goodwill relate to our petroleum additives business. The intangibles are being amortized over periods with up to approximately 6 years of remaining life. We continue to assess the market related to the intangibles and goodwill, as well as their specific values and evaluate the intangibles and goodwill for any potential impairment when significant events or circumstances occur that might impair the value of these assets. We have concluded the values are appropriate, as are the amortization periods for the intangibles. However, if conditions were to substantially deteriorate in the petroleum additives market, it could possibly cause a decrease in the estimated useful lives of the intangible assets or result in a noncash write-off of all or a portion of the intangibles and goodwill carrying amounts. A reduction in the amortization period of the intangibles would have no effect on cash flows. We do not anticipate such a change in the market conditions in the near term.

Pension Plans and Other Postretirement Benefits

We use assumptions to record the impact of the pension and postretirement benefit plans in the financial statements. These assumptions include the discount rate and the expected long-term rate of return on plan assets. A change in any of these assumptions could cause different results for the plans and therefore, impact our results of operations, cash flows, and financial condition. We develop these assumptions after considering available information that we deem relevant. Information is provided on the pension and postretirement plans in Note 18. In addition, further disclosure of the effect of changes in these assumptions is provided in the Financial Position and Liquidity section of Item 7.

Environmental and Legal Proceedings

We have disclosed our environmental matters in Item 1 of this Annual Report on Form 10-K, as well as in Note 21. Our estimates for costs that will be incurred to satisfy our obligations related to environmental matters are affected by many variables, including our judgment regarding the extent of remediation that will be required, future changes in and enforcement and interpretation of laws and regulations, current and future technology available, and timing of remediation activities. While we currently do not anticipate significant changes to the many factors that could impact our environmental requirements, we continue to keep our accruals consistent with these requirements as they change.

Also, as noted in the discussion of Legal Proceedings in Item 3 of this Annual Report on Form 10-K, while it is not possible to predict or determine with certainty the outcome of any legal proceeding, it is our opinion, based on our current knowledge, that we will not experience any material adverse effects on our results of operations, cash flows, or financial condition as a result of any pending or threatened proceeding.

RECENTLY ISSUED ACCOUNTING STANDARDS

For a full discussion of the more significant recently issued accounting standards, see Note 23.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to many market risk factors, including changes in the cost of raw materials, as well as interest and foreign currency rates. These risk factors may affect our results of operations, cash flows, and financial position.

We manage these risks through regular operating and financing methods, including the use of derivative financial instruments when deemed appropriate. When we have derivative instruments, they are with major financial institutions and are not for speculative or trading purposes.

The following analysis presents the effect on our results of operations, cash flows, and financial position as if the hypothetical changes in market risk factors occurred at December 31, 2022. We analyzed only the potential impacts of our hypothetical assumptions. This analysis does not consider other possible effects that could impact our business.

Interest Rate Risk

At December 31, 2022, we had total long-term debt of $1 billion. All of the long-term debt is at fixed rates except for debt outstanding under the revolving credit facility. There was no interest rate risk at the end of the year associated with the fixed rate debt.

At December 31, 2022, we had $361 million outstanding variable rate debt under our revolving credit facility. Holding all other variables constant, if the variable portion of the interest rates hypothetically increased 10%, the effect on our earnings and cash flow would have been additional interest expense of $2 million.

A hypothetical 100 basis point decrease in interest rates, holding all other variables constant, would have resulted in a change of $41 million in fair value of our debt at December 31, 2022.

Foreign Currency Risk

We sell to customers in foreign markets through our foreign subsidiaries, as well as through export sales from the United States. These transactions are often denominated in currencies other than the U.S. Dollar. Our primary currency exposures are the European Union Euro, British Pound Sterling, Japanese Yen, Chinese Renminbi, Indian Rupee, Singapore Dollar, Mexican Peso, Australian Dollar, and Canadian Dollar. We may enter into forward contracts as hedges to minimize the fluctuation of intercompany accounts receivable denominated in foreign currencies. At December 31, 2022, we had no outstanding forward contracts.

Raw Material Price Risk

We utilize a variety of raw materials in the manufacture of our products, including base oil, polyisobutylene, antioxidants, alcohols, solvents, detergents, friction modifiers, olefins, and copolymers. We may also enter into contracts which commit us to purchase some of our more critical raw materials based on anticipated demand. Our profitability is sensitive to changes in the quantities of raw materials we may need and the costs of those materials which may be caused by changes in supply, demand or other market conditions, over which we have little or no control. In addition, political and economic conditions in certain regions of the world in which we operate have caused, and may continue to cause, our demand for and the cost of our raw materials to fluctuate. War, armed hostilities, terrorist acts, civil unrest, inclement weather events, or other incidents may also cause a sudden, sharp, or prolonged change in our demand for and the cost of our raw materials. If we experience such increases in the cost of our raw materials, we may not be able to pass them along to our customers in the form of price increases for our products. The inability to do so would have a negative impact on our operating profit. In addition, if our demand for raw materials were to decline such that we would not have need for the quantities required to be purchased under commitment agreements, we could incur additional charges that would affect our profitability.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of NewMarket Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of NewMarket Corporation and its subsidiaries (the "Company") as of December 31, 2022 and 2021, and the related consolidated statements of income, of comprehensive income, of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2022, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of 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 accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail,

accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters 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 accounts or disclosures to which it relates.

Valuation of Pension Benefit Obligation

As described in Note 18 to the consolidated financial statements, the Company's consolidated pension benefit obligation, excluding other postretirement benefits, was $466 million as of December 31, 2022. Management develops the actuarial assumptions used by the various US and foreign plans based upon the circumstances of each particular country and pension plan. As disclosed by management, the determination of the pension benefit obligation requires the use of estimates and assumptions. Management's assumption in the determination of the pension benefit obligation is the discount rate.

The principal considerations for our determination that performing procedures relating to the valuation of the pension benefit obligation is a critical audit matter are the significant judgment by management to determine the pension benefit obligation. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate management's significant assumption used in the valuation of the pension benefit obligation, specifically the discount rate. In addition, the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the valuation of the pension benefit obligation, including controls over the Company's methods, significant assumption, and data. These procedures also included, among others, testing the completeness, accuracy, and relevance of underlying data used in the valuation of the pension benefit obligation. With the involvement of professionals with specialized skill and knowledge to assist, these procedures also included testing management's process for determining the pension benefit obligation, evaluating the appropriateness of the methods, and evaluating the reasonableness of the significant assumption, specifically the discount rate.

/s/ PricewaterhouseCoopers LLP

Richmond, Virginia

February 15, 2023

We have served as the Company's or its predecessor's auditor since 1947.

NewMarket Corporation and Subsidiaries

Consolidated Statements of Income

(in thousands, except per-share amounts)	Years Ended December 31, 2022	2021	2020
Net sales	$2,764,799	$2,356,110	$2,010,931
Cost of goods sold	2,124,302	1,808,403	1,415,899
Gross profit	640,497	547,707	595,032
Selling, general, and administrative expenses	145,106	145,973	142,863
Research, development, and testing expenses	140,252	143,952	140,367
Operating profit	355,139	257,782	311,802
Interest and financing expenses, net	35,202	34,218	26,328
Loss on early extinguishment of debt	7,545	0	0
Other income (expense), net	35,342	23,987	45,813
Income before income tax expense	347,734	247,551	331,287
Income tax expense	68,196	56,643	60,719
Net income	$ 279,538	$ 190,908	$ 270,568
Earnings per share - basic and diluted	$ 27.77	$ 17.71	$ 24.64

See accompanying Notes to Consolidated Financial Statements

NewMarket Corporation and Subsidiaries

Consolidated Statements of Comprehensive Income

(in thousands)	Years Ended December 31,		
	2022	**2021**	**2020**
Net income	$279,538	$190,908	$270,568
Other comprehensive income (loss):			
Pension plans and other postretirement benefits:			
Prior service credit (cost) arising during the period, net of income tax expense (benefit) of $(21) in 2022, $8 in 2021 and $(16) in 2020	(65)	27	(49)
Amortization of prior service cost (credit) included in net periodic benefit cost (income), net of income tax expense (benefit) of $(627) in 2022, $(628) in 2021 and $(680) in 2020	(1,993)	(1,977)	(2,120)
Actuarial net gain (loss) arising during the period, net of income tax expense (benefit) of $17,552 in 2022, $29,035 in 2021 and $(5,852) in 2020	53,084	89,167	(25,441)
Amortization of actuarial net loss (gain) included in net periodic benefit cost (income), net of income tax expense (benefit) of $655 in 2022, $2,263 in 2021 and $1,460 in 2020	2,014	7,076	4,634
Total pension plans and other postretirement benefits	53,040	94,293	(22,976)
Foreign currency translation adjustments, net of income tax expense (benefit) of $468 in 2022, $(380) in 2021 and $(636) in 2020	(42,808)	(3,356)	12,560
Other comprehensive income (loss)	10,232	90,937	(10,416)
Comprehensive income	$289,770	$281,845	$260,152

See accompanying Notes to Consolidated Financial Statements

NewMarket Corporation and Subsidiaries

Consolidated Balance Sheets

(in thousands, except share amounts)	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 68,712	$ 83,304
Marketable securities	0	375,918
Trade and other accounts receivable, net	453,692	391,779
Inventories	631,383	498,539
Prepaid expenses and other current assets	38,338	38,633
Total current assets	1,192,125	1,388,173
Property, plant, and equipment, net	659,998	676,770
Intangibles (net of amortization) and goodwill	126,069	127,752
Prepaid pension cost	302,584	242,604
Operating lease right-of-use assets	62,417	68,402
Deferred charges and other assets	63,625	54,735
Total assets	$2,406,818	$2,558,436
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 273,289	$ 246,097
Accrued expenses	89,508	85,103
Dividends payable	17,850	16,648
Income taxes payable	16,109	4,442
Operating lease liabilities	15,569	15,709
Current portion of long-term debt	0	349,434
Other current liabilities	11,562	7,654
Total current liabilities	423,887	725,087
Long-term debt	1,003,737	789,853
Operating lease liabilities - noncurrent	46,968	52,591
Other noncurrent liabilities	169,819	228,776
Total liabilities	1,644,411	1,796,307
Commitments and contingencies (Note 21)		
Shareholders' equity:		
Common stock and paid-in capital (with no par value; authorized shares - 80,000,000; issued and outstanding - 9,702,147 at December 31, 2022 and 10,362,722 at December 31, 2021)	0	0
Accumulated other comprehensive loss	(71,995)	(82,227)
Retained earnings	834,402	844,356
Total shareholders' equity	762,407	762,129
Total liabilities and shareholders' equity	$2,406,818	$2,558,436

See accompanying Notes to Consolidated Financial Statements

NewMarket Corporation and Subsidiaries

Consolidated Statements of Shareholders' Equity

(in thousands, except share and per-share amounts)	Common Stock and Paid-in Capital Shares	Common Stock and Paid-in Capital Amount	Accumulated Other Comprehensive Loss	Retained Earnings	Total Shareholders' Equity
Balance at December 31, 2019	11,188,549	$ 1,965	$(162,748)	$ 843,881	$ 683,098
Net income				270,568	270,568
Other comprehensive income (loss)			(10,416)		(10,416)
Cash dividends ($7.60 per share)				(83,417)	(83,417)
Repurchases of common stock	(270,963)	(2,630)		(98,804)	(101,434)
Tax withholdings related to stock-based compensation	(1,547)	(641)			(641)
Stock-based compensation	5,338	2,023		43	2,066
Balance at December 31, 2020	10,921,377	717	(173,164)	932,271	759,824
Net income				190,908	190,908
Other comprehensive income (loss)			90,937		90,937
Cash dividends ($8.00 per share)				(85,910)	(85,910)
Repurchases of common stock	(566,671)	(3,305)		(192,915)	(196,220)
Stock-based compensation	8,016	2,588		2	2,590
Balance at December 31, 2021	10,362,722	0	(82,227)	844,356	762,129
Net income				279,538	279,538
Other comprehensive income (loss)			10,232		10,232
Cash dividends ($8.40 per share)				(84,263)	(84,263)
Repurchases of common stock	(668,553)	(2,205)		(205,265)	(207,470)
Stock-based compensation	7,978	2,205		36	2,241
Balance at December 31, 2022	9,702,147	$ 0	$ (71,995)	$ 834,402	$ 762,407

See accompanying Notes to Consolidated Financial Statements

NewMarket Corporation and Subsidiaries

Consolidated Statements of Cash Flows

(in thousands)	Years Ended December 31,		
	2022	2021	2020
Cash and cash equivalents at beginning of year	$ 83,304	$ 125,172	$ 144,397
Cash flows from operating activities:			
Net income	279,538	190,908	270,568
Adjustments to reconcile net income to cash flows from operating activities:			
Depreciation and amortization	82,285	84,320	84,002
Deferred income tax (benefit) expense	(42,645)	1,978	7,554
Loss on early extinguishment of debt	7,545	0	0
Gain on sale of land	0	0	(16,483)
Change in assets and liabilities:			
Trade and other accounts receivable, net	(73,089)	(53,990)	2,591
Inventories	(166,558)	(96,199)	(33,111)
Prepaid expenses and other current assets	2,159	(2,691)	(6,138)
Accounts payable and accrued expenses	35,532	60,407	7,077
Operating lease liabilities	(18,275)	(18,204)	(17,801)
Other current liabilities	4,009	(6,240)	228
Income taxes payable	11,586	562	(6,935)
Loss on marketable securities	2,977	7,440	0
Cash pension and postretirement contributions	(9,748)	(10,342)	(10,655)
Other, net	(6,696)	7,387	3,257
Cash provided from (used in) operating activities	108,620	165,336	284,154
Cash flows from investing activities:			
Capital expenditures	(56,169)	(78,934)	(93,316)
Purchases of marketable securities	(787)	(393,434)	0
Proceeds from sales and maturities of marketable securities	372,846	10,957	0
Proceeds from sale of land	0	0	20,000
Other, net	0	0	(927)
Cash provided from (used in) investing activities	315,890	(461,411)	(74,243)
Cash flows from financing activities:			
Redemption of 4.10% senior notes	(350,000)	0	0
Net borrowings (repayments) under revolving credit facility	213,000	148,000	(44,678)
Issuance of 2.70% senior notes	0	395,052	0
Dividends paid	(84,263)	(85,910)	(83,417)
Repurchases of common stock	(207,470)	(196,220)	(101,434)
Cash costs of 4.10% senior notes redemption	(7,099)	0	0
Debt issuance costs	0	(3,897)	(1,349)
Other, net	(3,525)	(1,892)	(585)
Cash provided from (used in) financing activities	(439,357)	255,133	(231,463)
Effect of foreign exchange on cash and cash equivalents	255	(926)	2,327
(Decrease) increase in cash and cash equivalents	(14,592)	(41,868)	(19,225)
Cash and cash equivalents at end of year	$ 68,712	$ 83,304	$ 125,172

See accompanying Notes to Consolidated Financial Statements

Notes to Consolidated Financial Statements

1. Summary of Significant Accounting Policies

Consolidation—Our consolidated financial statements include the accounts of NewMarket Corporation and its subsidiaries. All intercompany transactions are eliminated upon consolidation. References to "we," "us," "our," the "company," and "NewMarket" are to NewMarket Corporation and its consolidated subsidiaries, unless the context indicates otherwise.

NewMarket is the parent company of separate operating companies, each managing its own assets and liabilities. Those companies are Afton, which focuses on petroleum additive products; Ethyl, representing certain contracted manufacturing and related services, as well as the antiknock compounds business; and NewMarket Development, which manages the real property and improvements that we own in Virginia. NewMarket is also the parent company of NewMarket Services, which provides various administrative services to NewMarket, Afton, Ethyl, and NewMarket Development.

Certain reclassifications have been made to the accompanying consolidated financial statements and/or the related notes to conform to the current presentation.

Foreign Currency Translation—We translate the balance sheets of our foreign subsidiaries into U.S. Dollars based on the current exchange rate at the end of each period. We translate the statements of income using the weighted-average exchange rates for the period. NewMarket includes translation adjustments in the Consolidated Balance Sheets as part of accumulated other comprehensive loss and transaction adjustments in the Consolidated Statements of Income as part of cost of goods sold. Foreign currency transaction adjustments resulted in a net loss of $4 million in 2022, $6 million in 2021, and $3 million in 2020.

Revenue Recognition—We recognize revenue when control of the product is transferred to our customer and for an amount that reflects the consideration we expect to collect from the customer. Net sales (revenues) are reported at the gross amount billed, including amounts related to shipping that are charged to the customer. Provisions for rebates to customers are recorded in the same period that the related sales are recorded. Freight costs incurred on the delivery of products are included in the Consolidated Statements of Income in cost of goods sold. Our standard terms of delivery are included in our contracts, sales order confirmation documents, and invoices. Taxes assessed by a governmental authority concurrent with sales to our customers, including sales, use, value-added, and revenue-related excise taxes, are not included as net sales, but are reflected in accrued expenses until remitted to the appropriate governmental authority.

Cash and Cash Equivalents—Our cash equivalents consist of government obligations and commercial paper with original maturities of 90 days or less. Throughout the year, we have cash balances in excess of federally insured amounts on deposit with various financial institutions. We state cash and cash equivalents at cost, which approximates fair value.

Marketable Securities—Our trading and equity securities are recorded at estimated fair value. Unrealized gains and losses on trading and equity securities are included in net income.

Accounts Receivable—We record our accounts receivable at outstanding principal adjusted for allowances for credit losses. The allowance for credit losses represents probable losses to be incurred if our customers do not make required payments. We determine the adequacy of the allowance by periodically evaluating each customer's receivable balance, considering their financial condition and credit history, and considering current economic conditions. The allowance for credit losses was not material at December 31, 2022 or December 31, 2021.

Inventories—NewMarket values its inventories at the lower of cost or net realizable value. In the United States, petroleum additives inventory cost is determined on the last-in, first-out (LIFO) basis. For all other inventory, we

determine cost using a weighted-average method. Inventory cost includes raw materials, direct labor, and manufacturing overhead.

Property, Plant, and Equipment—We state property, plant, and equipment at cost less accumulated depreciation and compute depreciation by the straight-line method based on the estimated useful lives of the assets. We capitalize expenditures for significant improvements that extend the useful life of the related property. We expense repairs and maintenance, including plant turnaround costs, as incurred. When property is sold or retired, we remove the cost and accumulated depreciation from the accounts and any related gain or loss is included in earnings.

Intangibles (Net of Amortization) and Goodwill—Identifiable intangibles include the cost of acquired contracts, formulas and technology, trademarks and trade names, and customer bases. We assign a value to identifiable intangibles based on independent third-party appraisals and management's assessment at the time of acquisition. NewMarket amortizes the cost of the customer bases by an accelerated method and the cost of the remaining identifiable intangibles by the straight-line method over the estimated economic life of the intangible.

Goodwill arises from the excess of cost over the net assets of businesses acquired. Goodwill represents the residual purchase price after allocation to all identifiable net assets. We test goodwill for impairment each year, as well as whenever a significant event or circumstance occurs which could reduce the fair value of the reporting unit to which the goodwill applies below the carrying amount of the reporting unit.

Impairment of Long-Lived Assets—When significant events or circumstances occur that might impair the value of long-lived assets, we evaluate recoverability of the recorded cost of these assets. Assets are considered to be impaired if their carrying amount is not recoverable from the estimated undiscounted future cash flows associated with the assets. If we determine an asset is impaired and its recorded cost is higher than estimated fair market value based on the estimated present value of future cash flows, we adjust the asset to estimated fair market value.

Environmental Costs—NewMarket capitalizes environmental compliance costs if they extend the useful life of the related property or prevent future contamination. Environmental compliance costs also include maintenance and operation of pollution prevention and control facilities. We expense these compliance costs in cost of goods sold as incurred.

Accrued environmental remediation and monitoring costs relate to an existing condition caused by past operations. NewMarket accrues these costs in current operations within cost of goods sold in the Consolidated Statements of Income when it is probable that we have incurred a liability and the amount can be reasonably estimated. These estimates are based on an assessment of the site, available clean-up methods, and prior experience in handling remediation.

When we can reliably determine the amount and timing of future cash flows, we discount these liabilities, incorporating an inflation factor.

Legal Costs—We expense legal costs in the period incurred.

Employee Savings Plan—Most of our full-time salaried and hourly employees may participate in defined contribution savings plans. Employees who are covered by collective bargaining agreements may also participate in a savings plan according to the terms of their bargaining agreements. Employees, as well as NewMarket, contribute to the plans. We made contributions of $7 million in each of 2022, 2021, and 2020 related to these plans.

Notes to Consolidated Financial Statements

Research, Development, and Testing Expenses—NewMarket expenses all research, development, and testing costs as incurred. R&D costs include personnel-related costs, as well as internal and external testing of our products.

Income Taxes—We recognize deferred income taxes for temporary differences between the financial reporting basis and the income tax basis of assets and liabilities. We also adjust for changes in tax rates and laws at the time the changes are enacted. A valuation allowance is recorded when it is more likely than not that a deferred tax asset will not be realized. We typically remove a tax impact from accumulated other comprehensive loss when the underlying circumstance which gave rise to the tax impact no longer exists. We recognize accrued interest and penalties associated with uncertain tax positions as part of income tax expense on our Consolidated Statements of Income.

Leases—We determine if an arrangement includes a lease at the inception of the agreement. The right-of-use asset and lease liability are determined at the lease commencement date and are based on the present value of estimated lease payments.

Our lease agreements contain both fixed and variable lease payments. In some cases, variable lease payments are based on a rate or an index. Fixed lease payments, as well as variable lease payments which are based on a rate or index, are included in the determination of the right-of-use asset and lease liability at lease inception. Variable lease payments that are not based on a rate or index are expensed when incurred.

The present value of estimated lease payments is determined utilizing the rate implicit in the lease agreement, if that rate can be determined. If the implicit rate cannot be determined, the present value of estimated lease payments is determined utilizing our incremental borrowing rate. The incremental borrowing rate is determined at the lease commencement date and is developed utilizing a readily available market interest rate curve adjusted for our credit quality.

Some of our leases include an option to renew that can extend the lease term. For those leases which are reasonably certain to be renewed, we include the renewal in the lease term.

We do not recognize leases with terms of 12 months or less on the balance sheet for any lease class, except the railcar lease class. For the short-term leases not recorded on the balance sheet, the lease payments are recognized in the Consolidated Statements of Income on a straight-line basis over the lease term.

We account for the lease and nonlease components as a single lease component in determining the right-of-use assets and lease liabilities for all lease classes.

Derivative Financial Instruments and Hedging Activities—We are exposed to certain risks arising from both our business operations and economic conditions. We manage our exposures to a wide variety of business and operational risks through management of our core business activities.

We manage certain economic risks, including interest rate, liquidity, and credit risk primarily by managing the amount, sources, and duration of our debt funding, as well as through the use of derivative financial instruments. We sometimes enter into interest rate swaps to manage our exposure to interest rate movements.

In addition, our foreign operations expose us to fluctuations of foreign exchange rates. These fluctuations may impact our results of operations, financial position, and cash flows. To manage this exposure, we sometimes enter into foreign currency forward contracts to minimize currency exposure due to cash flows from foreign operations.

We record all derivatives on the balance sheet at fair value. The accounting for changes in the fair value of derivatives depends on the intended use of the derivative, whether we have elected to designate a derivative in a hedging relationship and apply hedge accounting, and whether the hedging relationship has satisfied the criteria necessary to apply hedge accounting. We may enter into derivative contracts that are intended to economically hedge certain of our risks, even though hedge accounting does not apply, or we elect not to apply hedge accounting. We do not enter into derivative instruments for speculative purposes. We had no derivative financial instruments outstanding at December 31, 2022 or December 31, 2021.

Stock-based Compensation—We calculate the fair value of restricted stock and restricted stock units based on the closing price of our common stock on the date of grant. If award recipients are entitled to receive dividends during the vesting period, we make no adjustment to the fair value of the award for dividends. If the award does not entitle recipients to dividends during the vesting period, we reduce the grant-date price of our common stock by the present value of the dividends expected to be paid on the underlying shares during the vesting period, discounted at the risk-free interest rate.

We recognize stock-based compensation expense for the number of awards expected to vest on a straight-line basis over the requisite service period.

Estimates and Risks Due to Concentration of Business—The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

In addition, our financial results can be influenced by certain risk factors. Some of our significant concentrations of risk include the following:

- reliance on a small number of significant customers;
- customers concentrated in the fuel and lubricant industries; and
- production of several of our products solely at one facility.

2. Net Sales

Our revenues are primarily derived from the manufacture and sale of petroleum additives products. We sell petroleum additives products across the world including to customers located in our North America, Latin America, Asia Pacific, and EMEAI regions. Our customers primarily consist of global, national, and independent oil companies. While some of our customers have payment terms beyond 30 days, we do not provide extended payment terms of a year or more, nor do our contracts include a financing component. Our allowance for credit losses is immaterial, as are any bad debts we incur. In limited cases, we collect funds in advance of shipping product to our customers and recognizing the related revenue. These prepayments from customers are recorded as a contract liability to our customer until we recognize the revenue. Prepayments from our customers totaled $1 million at both December 31, 2022 and December 31, 2021. Revenue recognized from funds collected in advance from customers in an earlier period was $1 million in 2022, $2 million in 2021, and $1 million in 2020.

We recognize revenue when control of the product is transferred to our customer and for an amount that reflects the consideration we expect to collect from the customer. Control is generally transferred to the customer when title transfers (which may include physical possession by the customer), we have a right to payment from the customer, the customer has accepted the product, and the customer has assumed the risks and rewards of ownership. We have supplier managed inventory arrangements with some of our customers to facilitate on-demand product availability. In some cases, the inventory resides at a customer site, although title has not

transferred, we are not entitled to payment, and we have not invoiced for the product. We have evaluated the contract terms under these arrangements and have determined that control transfers when the customer uses the product, at which time revenue is recognized. Our contracts generally include one performance obligation, which is providing petroleum additives products. The performance obligation is satisfied at a point in time when products are shipped, delivered, or consumed by the customer, depending on the underlying contracts.

Taxes assessed by a governmental authority which are concurrent with sales to our customers, including sales, use, value-added, and revenue-related excise taxes, are collected by us from the customer and are not included in net sales, but are reflected in accrued expenses until remitted to the appropriate governmental authority. When we are responsible for shipping and handling costs after title has transferred, we account for those as fulfillment costs and include them in cost of goods sold.

Some of our contracts include variable consideration in the form of rebates or business development funds. We record rebates at the point of sale as contra-revenue when we can reasonably estimate the amount of the rebate. The estimates are based on our best judgment at the time of sale, which includes anticipated as well as historical performance. Depending upon the specific terms of a business development fund, amounts are accrued as contra-revenue at the point of sale or are expensed when costs are incurred by us. We regularly review both rebates and business development funds and make adjustments when necessary, recognizing the full amount of any adjustment in the period identified. We recognized an increase to net sales of $2 million for 2022, $4 million for 2021, and $2 million for 2020 related to adjustments to rebates or business development funds which were recognized in revenue in a prior period. At December 31, 2022, accrued rebates were $28 million and accrued business development funds were $0.4 million. At December 31, 2021, accrued rebates were $26 million and accrued business development funds were $2 million.

The following table provides information on our net sales by geographic area. Information on net sales by segment is in Note 4.

	Years Ended December 31,		
(in thousands)	2022	2021	2020
Net sales			
United States	$ 974,963	$ 780,278	$ 650,654
China	181,283	255,219	213,788
Europe, Middle East, Africa, India	807,782	708,675	651,645
Asia Pacific, except China	435,684	325,621	279,847
Other foreign	365,087	286,317	214,997
Net sales	$2,764,799	$2,356,110	$2,010,931

3. Earnings Per Share

We had 33,055 shares in 2022, 26,572 shares in 2021, and 19,951 shares in 2020 of nonvested restricted stock that were excluded from the calculation of diluted earnings per share, as their effect on earnings per share would be anti-dilutive.

The nonvested restricted stock is considered a participating security since the restricted stock contains nonforfeitable rights to dividends. As such, we use the two-class method to compute basic and diluted earnings per share for all periods presented since this method yields the most dilutive result. The following table illustrates the earnings allocation method utilized in the calculation of basic and diluted earnings per share.

(in thousands, except per-share amounts)	Years Ended December 31, 2022	2021	2020
Earnings per share numerator:			
Net income attributable to common shareholders before allocation of earnings to participating securities	$279,538	$190,908	$270,568
Earnings allocated to participating securities	(876)	(462)	(448)
Net income attributable to common shareholders after allocation of earnings to participating securities	$278,662	$190,446	$270,120
Earnings per share denominator:			
Weighted-average number of shares of common stock outstanding - basic and diluted	10,035	10,756	10,961
Earnings per share - basic and diluted	$ 27.77	$ 17.71	$ 24.64

4. Segment and Geographic Area Information

Segment Information—The tables below show our consolidated segment results. The "All other" category includes the operations of the antiknock compounds business, as well as certain contracted manufacturing and related services associated with Ethyl.

The segment accounting policies are the same as those described in Note 1. We evaluate the performance of the petroleum additives business based on segment operating profit. NewMarket Services departmental and other expenses are billed to Afton and Ethyl based on the services provided under the holding company structure. Depreciation on segment property, plant, and equipment, as well as amortization of segment intangible assets and lease right-of-use assets are included in segment operating profit. No transfers occurred between the petroleum additives segment and the "All other" category during the periods presented. The table below reports net sales and operating profit by segment, as well as a reconciliation to income before income tax expense, for the last three years.

(in thousands)	Years Ended December 31, 2022	2021	2020
Net sales			
Petroleum additives			
Lubricant additives	$2,342,622	$1,998,772	$1,686,649
Fuel additives	411,688	345,170	314,918
Total	2,754,310	2,343,942	2,001,567
All other	10,489	12,168	9,364
Net sales (a)	$2,764,799	$2,356,110	$2,010,931
Segment operating profit			
Petroleum additives	$ 378,244	$ 281,055	$ 333,241
All other	(1,782)	(1,525)	(100)
Segment operating profit	376,462	279,530	333,141
Corporate, general, and administrative expenses	(21,579)	(21,214)	(21,744)
Interest and financing expenses, net	(35,202)	(34,218)	(26,328)
Loss on early extinguishment of debt	(7,545)	0	0
Other income (expense), net	35,598	23,453	46,218
Income before income tax expense	$ 347,734	$ 247,551	$ 331,287

(a) No single customer accounted for 10% or more of our total net sales in 2022, 2021, or 2020.

The following tables show asset information by segment and the reconciliation to consolidated assets. Segment assets consist of accounts receivable, inventory, and long-lived assets. Long-lived assets included in the petroleum additives segment amounts in the table below include property, plant, and equipment (net of depreciation), intangibles (net of amortization) and goodwill, and lease right-of-use assets. The additions to long-lived assets include property, plant, and equipment and lease right-of-use assets.

(in thousands)	December 31, 2022	2021
Segment assets		
Petroleum additives	$1,929,340	$1,752,467
All other	18,738	12,602
	1,948,078	1,765,069
Cash and cash equivalents	68,712	83,304
Marketable securities	0	375,918
Non-segment other accounts receivable	2,220	11,884
Prepaid expenses and other current assets	38,338	38,633
Non-segment property, plant, and equipment, net	32,191	30,352
Prepaid pension cost	302,584	242,604
Non-segment lease right-of-use assets	26	105
Non-segment deferred charges and other assets	14,669	10,567
Total assets	$2,406,818	$2,558,436

(in thousands)	Years Ended December 31, 2022	2021	2020
Additions to long-lived assets			
Petroleum additives	$ 64,456	$134,873	$109,536
All other	147	22	3
Corporate	3,983	686	2,453
Total additions to long-lived assets	$ 68,586	$135,581	$111,992
Depreciation and amortization			
Petroleum additives	$ 78,744	$ 80,495	$ 80,811
All other	51	51	52
Corporate	3,490	3,774	3,139
Total depreciation and amortization	$ 82,285	$ 84,320	$ 84,002

Geographic Area Information - We have operations in the North America, Latin America, Asia Pacific, and EMEAI regions. Our foreign customers consist primarily of global, national, and independent oil companies.

The tables below report net sales, total assets, and long-lived assets by geographic area, as well as by country for those countries with significant net sales or long-lived assets. Since our foreign operations are significant to our overall business, we are also presenting net sales in the table below by the major regions in which we operate. NewMarket assigns net sales to geographic areas based on the location to which the product was shipped to a third party. Long-lived assets in the table below include property, plant, and equipment, net of depreciation, and lease right-of-use assets.

(in thousands)	Years Ended December 31, 2022	2021	2020
Net sales			
United States	$ 974,963	$ 780,278	$ 650,654
China	181,283	255,219	213,788
Europe, Middle East, Africa, India	807,782	708,675	651,645
Asia Pacific, except China	435,684	325,621	279,847
Other foreign	365,087	286,317	214,997
Net sales	$2,764,799	$2,356,110	$2,010,931

(in thousands)	December 31, 2022	2021
Total assets		
United States	$ 990,037	$1,255,464
Foreign	1,416,781	1,302,972
Total assets	$2,406,818	$2,558,436
Long-lived assets		
United States	$ 363,211	$ 360,204
Singapore	247,218	263,614
Other foreign	148,879	160,944
Total long-lived assets	$ 759,308	$ 784,762

5. Supplemental Cash Flow Information

(in thousands)	Years Ended December 31, 2022	2021	2020
Cash paid during the year for			
Interest and financing expenses (net of capitalization)	$40,531	$30,465	$26,148
Income taxes	88,866	67,917	62,328
Supplemental disclosure of non-cash transactions			
Non-cash additions to property, plant, and equipment	$ 4,087	$ 4,872	$ 5,106

6. Marketable Securities

During 2021, NewMarket invested in both debt, which was designated as trading, and equity marketable securities. Subsequently, during the first three months of 2022, we sold all of the marketable securities. While held, the marketable securities were recorded on a settlement date basis at estimated fair value and were classified as current assets in the Consolidated Balance Sheets. Gains and losses, as well as the investment income attributable to the debt and equity securities, are reported in Other income (expense), net in the Consolidated Statements of Income. The debt securities had a cost basis of $50 million and the equity securities had a cost basis of $334 million at December 31, 2021. At December 31, 2022, the cost basis for all marketable securities was zero.

The following table provides information on the fair value of the marketable securities, as well as the related level within the fair value hierarchy. The estimated fair value of debt securities was based on reported trades of the debt security adjusted for other observable market data including, but not limited to, benchmark yield curves, market-based quotes of similar assets, and other market-corroborated inputs. The estimated fair value of equity securities was based on actively quoted market prices.

	December 31, 2021			
		Fair Value Measurements Using		
(in thousands)	Fair Value	Level 1	Level 2	Level 3
Debt securities				
Corporate bonds	$ 48,727	$ 0	$48,727	$0
Equity securities				
U.S. government income mutual fund	327,191	327,191	0	0
Total marketable securities	$375,918	$327,191	$48,727	$0

7. Trade and Other Accounts Receivable, Net

(in thousands)	December 31, 2022	2021
Trade receivables	$384,636	$316,702
Income and other tax receivables	60,745	64,887
Other	8,311	10,190
	$453,692	$391,779

8. Inventories

(in thousands)	December 31, 2022	December 31, 2021
Finished goods and work-in-process	$497,652	$393,778
Raw materials	113,484	86,856
Stores, supplies, and other	20,247	17,905
	$631,383	$498,539

Our U.S. petroleum additives finished goods, work-in-process, and raw materials inventories, which are stated on the LIFO basis, amounted to $165 million at December 31, 2022 and were below replacement cost by approximately $114 million. At December 31, 2021, LIFO basis inventories were $124 million, which was approximately $78 million below replacement cost.

Our foreign inventories amounted to $451 million at December 31, 2022 and $357 million at December 31, 2021.

Reserves for obsolete and slow-moving inventory included in the table above were not material at December 31, 2022 or December 31, 2021.

9. Prepaid Expenses and Other Current Assets

(in thousands)	December 31, 2022	December 31, 2021
Dividend funding	$17,850	$16,648
Income taxes on intercompany profit	6,925	6,879
Other	13,563	15,106
	$38,338	$38,633

10. Property, Plant, and Equipment, at Cost

(in thousands)	December 31, 2022	December 31, 2021
Land	$ 37,088	$ 37,746
Land improvements	64,061	61,491
Leasehold improvements	1,832	1,893
Buildings	183,030	185,216
Machinery and equipment	1,279,425	1,275,828
Construction in progress	30,916	27,012
	1,596,352	1,589,186
Less: accumulated depreciation and amortization	936,354	912,416
Net property, plant, and equipment	$ 659,998	$ 676,770

We depreciate the cost of property, plant, and equipment by the straight-line method over the following estimated useful lives:

Land improvements	15 - 40 years
Buildings	10 - 46 years
Machinery and equipment	3 - 30 years

Depreciation expense was $60 million in 2022, $61 million in 2021, and $61 million in 2020.

11. Intangibles (Net of Amortization) and Goodwill

The net carrying amount of intangibles and goodwill was $126 million at December 31, 2022 and $128 million at December 31, 2021. The gross carrying amount and accumulated amortization of each type of intangible asset and goodwill are presented in the table below.

	December 31,			
	2022		2021	
(in thousands)	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Amortizing intangible assets				
Formulas and technology	$ 6,200	$ 5,683	$ 6,200	$ 4,650
Contract	2,000	1,200	2,000	1,000
Customer base	5,440	4,350	5,440	4,160
Goodwill	123,662		123,922	
	$137,302	$ 11,233	$137,562	$ 9,810
Aggregate amortization expense		$ 1,423		$ 2,156

Aggregate amortization expense was $3 million in 2020. All of the intangibles relate to the petroleum additives segment. The change in the gross carrying amount between 2021 and 2022 was due to foreign currency fluctuations. There is no accumulated goodwill impairment.

Estimated annual amortization expense related to our intangible assets for the next five years is expected to be (in thousands):

2023	$907
2024	390
2025	390
2026	390
2027	190

We amortize formulas and technology over 6 years, the contract over 10 years, and the customer base over 20 years.

12. Deferred Charges and Other Assets

	December 31,	
(in thousands)	2022	2021
Finance lease right-of-use assets	$36,893	$39,590
Deferred income tax assets	3,575	5,318
Asbestos insurance receivables	2,994	3,429
Deferred financing costs, net of amortization	1,095	1,601
Deposit on future leased plant and equipment	12,063	0
Other	7,005	4,797
	$63,625	$54,735

Deferred financing costs, net of amortization, in the table above include only those costs associated with the revolving credit facility. The amount of deferred financing costs, net of amortization related to the 4.10% senior notes in 2021 and the 2.70% senior notes in both 2022 and 2021 is reported as components of long-term debt. See Note 14 for further information on our long-term debt.

Notes to Consolidated Financial Statements

13. Accrued Expenses

(in thousands)	December 31, 2022	December 31, 2021
Employee benefits, payroll, and related taxes	$36,878	$35,607
Customer rebates	27,752	25,505
Taxes other than income and payroll	3,715	4,514
Interest on long-term debt	8,710	8,531
Other	12,453	10,946
	$89,508	$85,103

14. Long-term Debt

(in thousands)	December 31, 2022	December 31, 2021
Senior notes - 2.70% due 2031 (net of related deferred financing costs)	$ 392,737	$ 391,853
Senior notes - 3.78% due 2029	250,000	250,000
Senior notes - 4.10% due 2022 (net of related deferred financing costs)	0	349,434
Revolving credit facility	361,000	148,000
	1,003,737	1,139,287
Less: Current maturity of 4.10% senior notes	0	349,434
	$1,003,737	$ 789,853

2.70% Senior Notes - On March 18, 2021, we issued $400 million aggregate principal amount of 2.70% senior notes due 2031 at an issue price of 98.763%. The 2.70% senior notes are general unsecured senior obligations and rank equally with our other unsecured senior indebtedness. The offer and sale of the notes were registered under the Securities Act of 1933, as amended. We incurred financing costs in 2021 of approximately $4 million related to the 2.70% senior notes, which are being amortized over the term of the notes.

The indenture governing the 2.70% senior notes includes certain customary covenants that, among other things and subject to certain qualifications and exceptions, limit our ability and the ability of our subsidiaries to:

- grant liens to secure indebtedness;
- engage in sale and lease back transactions;
- merge or consolidate with, or convey, transfer or lease all or substantially all of our assets to a third party.

We were in compliance with all covenants under the indenture governing the 2.70% senior notes as of December 31, 2022 and December 31, 2021.

3.78% Senior Notes - On January 4, 2017, we issued $250 million in senior unsecured notes in a private placement with The Prudential Insurance Company of America and certain other purchasers. These notes bear interest at 3.78% and mature on January 4, 2029. Interest is payable semiannually. Principal payments of $50 million are payable annually beginning on January 4, 2025. We have the right to make optional prepayments on the notes at any time, subject to certain limitations. The note purchase agreement contains representations, warranties, terms, and conditions customary for transactions of this type. These include negative covenants, certain financial covenants, and events of default which are substantially similar to the covenants and events of default in our revolving credit facility.

We were in compliance with all covenants under the 3.78% senior notes as of December 31, 2022 and December 31, 2021.

4.10% Senior Notes - In 2012, we issued $350 million aggregate principal amount of 4.10% senior notes due 2022 at an issue price of 99.83%. The notes were senior unsecured obligations. We incurred financing costs totaling approximately $5 million related to the 4.10% senior notes, which were being amortized over the term of the agreement. Interest was payable semiannually.

The 4.10% senior notes ranked:

- equal in right of payment with all of our existing and future senior unsecured indebtedness; and
- senior in right of payment to any of our future subordinated indebtedness.

The indenture governing the 4.10% senior notes contained covenants that, among other things, limited our ability and the ability of our subsidiaries to:

- create or permit to exist liens;
- enter into sale-leaseback transactions;
- incur additional guarantees; and
- sell all or substantially all of our assets or consolidate or merge with or into other companies.

On March 15, 2022, we redeemed the 4.10% senior notes at a redemption price of 100% of the principal amount of $350 million plus the accrued and unpaid interest on the notes and the applicable premium as outlined in the Indenture dated December 20, 2012. The 4.10% senior notes were due December 2022. We recognized a loss of $7.5 million on the early extinguishment including cash paid of $7.1 million for the premium on the early redemption and a write-off of $0.4 million of unamortized deferred financing costs.

Revolving Credit Facility - On March 5, 2020, NewMarket and certain foreign subsidiary borrowers entered into a Credit Agreement (the Credit Agreement) with a term of five years. The Credit Agreement provides for a $900 million, multicurrency revolving credit facility with a $500 million sublimit for foreign currency borrowings, a $50 million sublimit for letters of credit, and a $20 million sublimit for swingline loans. The Credit Agreement includes an expansion feature which allows us, subject to certain conditions, to request an increase in the aggregate amount of the revolving credit facility or obtain incremental term loans in an amount up to $425 million. NewMarket's obligations under the Credit Agreement are unsecured and the obligations of foreign subsidiary borrowers are fully and unconditionally guaranteed by NewMarket. The revolving credit facility is available on a revolving basis until March 5, 2025.

Borrowings made under the revolving credit facility bear interest at a variable rate determined, at our option, at an annual rate equal to (i) the Alternate Base Rate (ABR), (ii) the Adjusted Term SOFR Rate (SOFR), or (iii) the Adjusted EURIBO Rate (EURIBO), each plus the Applicable Rate and all as defined in the Credit Agreement. The Applicable Rate is based, at our option, on our Leverage Ratio (as defined in the Credit Agreement) or credit rating. Prior to January 11, 2023, when we amended our revolving credit facility, LIBOR was utilized instead of SOFR as an option to establish interest rates on the revolving credit facility.

We paid financing costs in 2020 of approximately $1.3 million related to this revolving credit facility and carried over deferred financing costs from our previous revolving credit facility of approximately $1.2 million, resulting in total deferred financing costs of $2.5 million, which we are amortizing over the term of the Credit Agreement.

There were outstanding borrowings amounting to $361 million under the revolving credit facility at December 31, 2022 compared to $148 million outstanding borrowings at December 31, 2021. Outstanding letters of credit amounted to $2 million at both December 31, 2022 and December 31, 2021, resulting in the unused portion of the applicable credit facility amounting to $537 million at December 31, 2022 and $750 million at December 31, 2021.

The average interest rate for borrowings under the credit facilities was 3.5% during 2022 and 1.6% during 2021.

The Credit Agreement contains certain customary covenants, including financial covenants that require NewMarket to maintain a consolidated Leverage Ratio (as defined in the Credit Agreement) of no more than 3.75 to 1.00 except during an Increased Leverage Period (as defined in the Credit Agreement). We were in compliance with all covenants under the revolving credit facility in effect at December 31, 2022 and at December 31, 2021.

15. Other Noncurrent Liabilities

(in thousands)	December 31, 2022	December 31, 2021
Deferred income tax liabilities	$ 61,993	$ 89,438
Employee benefits	58,974	86,542
Finance lease liabilities	22,433	25,044
Environmental remediation	9,454	9,370
Asbestos litigation reserve	5,354	6,515
Deemed repatriation of earnings	2,956	2,956
Other	8,655	8,911
	$169,819	$228,776

16. Stock-based Compensation

The 2014 Incentive Compensation and Stock Plan (the Plan) was approved on April 24, 2014. Any employee of our company or an affiliate or a person who is a member of our Board of Directors or the board of directors of an affiliate is eligible to participate in the Plan if the Compensation Committee of the Board of Directors (the Administrator), in its sole discretion, determines that such person has contributed or can be expected to contribute to the profits or growth of our company or its affiliates (each, a participant). Under the terms of the Plan, we may grant participants stock awards, incentive awards, stock units, or options (which may be either incentive stock options or nonqualified stock options), or stock appreciation rights (SARs), which may be granted with a related option. Stock options entitle the participant to purchase a specified number of shares of our common stock at a price that is fixed by the Administrator at the time the option is granted; provided, however, that the price cannot be less than the shares' fair market value on the date of grant. The maximum period in which an option may be exercised is fixed by the Administrator at the time the option is granted but, in the case of an incentive stock option, cannot exceed 10 years. No participant may be granted or awarded, in any calendar year, shares, options, SARs, or stock units covering more than 200,000 shares of our common stock in the aggregate. For purposes of this limitation and the individual limitation on the grant of options, an option and corresponding SAR are treated as a single award.

The maximum aggregate number of shares of our common stock that may be issued under the Plan is 1,000,000. At December 31, 2022, 938,034 shares were available for grant. During 2022, we granted 1,495 shares to five of our non-employee directors, which vested immediately.

A summary of activity during 2022 related to NewMarket's restricted stock and restricted stock units (stock awards) is presented below in whole shares:

	Number of Shares	Weighted Average Grant-Date Fair Value
Unvested stock awards at January 1, 2022	27,644	$415.18
Granted in 2022	8,593	312.49
Vested in 2022	0	0.00
Forfeited in 2022	(1,825)	406.00
Unvested stock awards at December 31, 2022	34,412	390.02

The weighted average grant-date fair value was $392.63 for stock awards granted in 2021 and $414.33 for stock awards granted in 2020. The fair value of shares vested was $2 million in 2020. No shares vested in 2021. We recognized compensation expense of $2 million in each of 2022, 2021, and 2020 related to stock awards. At December 31, 2022, total unrecognized compensation expense related to stock awards was $5 million, which is expected to be recognized over a period of 2.3 years.

17. Leases

Our leases are for land, real estate, railcars, vehicles, pipelines, plant equipment, and office equipment. We have leases with remaining terms ranging from less than one year to 48 years. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

The components of lease cost were as follows:

	Years Ended December 31,		
(in thousands)	2022	2021	2020
Operating lease cost	$18,573	$18,343	$17,371
Finance lease cost:			
Amortization of assets	2,771	2,795	3,047
Interest on lease liabilities	712	517	417
Short-term lease cost	6,246	6,607	4,665
Variable lease cost	8,152	6,364	4,579
Total lease cost	$36,454	$34,626	$30,079

Variable lease costs also include leases that do not have a right-of-use asset or lease liability but are capitalized as part of inventory.

Supplemental balance sheet information related to leases was as follows:

(in thousands)	Balance Sheet Classification	December 31, 2022	December 31, 2021
Operating leases			
Right-of-use assets	Operating lease right-of-use assets	$62,417	$68,402
Current liability	Operating lease liabilities	$15,569	$15,709
Noncurrent liability	Operating lease liabilities-noncurrent	46,968	52,591
		$62,537	$68,300
Finance leases			
Right-of-use assets	Deferred charges and other assets	$36,893	$39,590
Current liability	Other current liabilities	$ 2,706	$ 2,828
Noncurrent liability	Other noncurrent liabilities	22,433	25,044
		$25,139	$27,872

	December 31, 2022	2021	2020
Weighted average remaining lease term (in years)			
Operating leases	12	12	13
Finance leases	15	16	10
Weighted average incremental borrowing rate			
Operating leases	3.21%	3.02%	3.33%
Finance leases	2.72%	2.74%	3.05%

Supplemental cash flow information related to leases was as follows:

(in thousands)	Years Ended December 31, 2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$18,632	$18,296	$17,563
Operating cash flows from finance leases	712	517	417
Financing cash flows from finance leases	2,834	2,841	3,031
Right-of-use assets obtained in exchange for new lease obligations			
Operating leases	$12,333	$25,035	$17,694
Finance leases	84	31,612	982

Maturities of lease liabilities at December 31, 2022 were as follows:

(in thousands)	Operating Leases	Finance Leases
2023	$17,151	$ 3,348
2024	12,166	3,304
2025	10,129	3,273
2026	6,851	3,245
2027	4,367	3,229
Thereafter	29,608	11,813
Total lease payments	80,272	28,212
Less: imputed interest	17,735	3,073
Total lease obligations	$62,537	$25,139

Operating lease payments in the table above include approximately $16 million related to options to extend lease terms that are reasonably certain of being exercised. At December 31, 2022, we have entered into leases that have not yet commenced but provide for right-of-use assets of approximately $30 million with remaining related lease obligations of approximately $18 million, which are not included in the above table. Most of the commitments relate to plant and equipment that is being constructed or procured by the future lessors. These leases are expected to commence in 2023.

18. Pension Plans and Other Postretirement Benefits

NewMarket uses a December 31 measurement date for all of our plans.

The service cost component of net periodic benefit cost (income) is included in cost of goods sold; selling, general, and administrative expenses; or research, development, and testing expenses, to reflect where other compensation costs arising from services rendered by the pertinent employee are recorded on the Consolidated Statements of Income. The remaining components of net periodic benefit cost (income) are recorded in other income (expense), net on the Consolidated Statements of Income.

U.S. Retirement Plans

NewMarket sponsors four pension plans for all full-time U.S. employees that offer a benefit based primarily on years of service and compensation. Employees do not contribute to these pension plans. The plans are as follows:

- Salaried employees pension plan;
- Afton pension plan for union employees (the Sauget plan);
- NewMarket retirement income plan for union employees in Houston, Texas (the Houston plan); and
- Afton Chemical Additives pension plan for union employees in Port Arthur, Texas (the Port Arthur plan).

In addition, we offer an unfunded, nonqualified supplemental pension plan. This plan restores the pension benefits from our regular pension plans that would have been payable to designated participants if it were not for limitations imposed by U.S. federal income tax regulations. We also provide postretirement health care benefits and life insurance to eligible retired employees.

The components of net periodic pension and postretirement benefit cost (income), as well as other amounts recognized in other comprehensive income (loss), are shown below.

	Years Ended December 31,					
	Pension Benefits			Postretirement Benefits		
(in thousands)	2022	2021	2020	2022	2021	2020
Net periodic benefit cost (income)						
Service cost	$ 18,935	$ 19,316	$ 16,544	$ 1,093	$ 1,079	$ 912
Interest cost	13,478	13,018	13,771	1,163	1,158	1,340
Expected return on plan assets	(43,765)	(38,675)	(37,226)	(790)	(907)	(938)
Amortization of prior service cost (credit)	271	271	271	(3,028)	(3,028)	(3,028)
Amortization of actuarial net (gain) loss	1,988	5,708	4,674	51	36	0
Net periodic benefit cost (income)	(9,093)	(362)	(1,966)	(1,511)	(1,662)	(1,714)
Other changes in plan assets and benefit obligations recognized in other comprehensive income (loss)						
Actuarial net (gain) loss	(17,083)	(79,688)	(4,933)	(12,445)	(257)	2,410
Prior service cost (credit)	86	(35)	65	0	0	0
Amortization of actuarial net gain (loss)	(1,988)	(5,708)	(4,674)	(51)	(36)	0
Amortization of prior service (cost) credit	(271)	(271)	(271)	3,028	3,028	3,028
Total recognized in other comprehensive income (loss)	(19,256)	(85,702)	(9,813)	(9,468)	2,735	5,438
Total recognized in net periodic benefit cost (income) and other comprehensive income (loss)	$(28,349)	$(86,064)	$(11,779)	$(10,979)	$ 1,073	$ 3,724

Changes in the plans' benefit obligations and assets follow.

	December 31,			
	Pension Benefits		Postretirement Benefits	
(in thousands)	2022	2021	2022	2021
Change in benefit obligation				
Benefit obligation at beginning of year	$ 478,809	$457,721	$ 41,348	$ 41,707
Service cost	18,935	19,316	1,093	1,079
Interest cost	13,478	13,018	1,163	1,158
Actuarial net (gain) loss	(166,409)	3,217	(12,064)	(141)
Plan amendment	86	0	0	0
Benefits paid	(14,527)	(14,463)	(2,626)	(2,455)
Benefit obligation at end of year	330,372	478,809	28,914	41,348
Change in plan assets				
Fair value of plan assets at beginning of year	663,193	553,171	20,972	21,372
Actual return on plan assets	(105,560)	121,615	1,171	1,022
Employer contributions	2,434	2,870	1,217	1,033
Benefits paid	(14,527)	(14,463)	(2,626)	(2,455)
Fair value of plan assets at end of year	545,540	663,193	20,734	20,972
Funded status	$ 215,168	$184,384	$ (8,180)	$(20,376)
Amounts recognized in the Consolidated Balance Sheets				
Noncurrent assets	$ 244,210	$223,002	$ 0	$ 0
Current liabilities	(2,834)	(2,799)	(1,086)	(1,058)
Noncurrent liabilities	(26,208)	(35,819)	(7,094)	(19,318)
	$ 215,168	$184,384	$ (8,180)	$(20,376)
Amounts recognized in accumulated other comprehensive loss				
Actuarial net (gain) loss	$ (40,813)	$ (21,742)	$ (7,811)	$ 4,686
Prior service cost (credit)	145	330	(13,561)	(16,591)
	$ (40,668)	$ (21,412)	$(21,372)	$(11,905)

The accumulated benefit obligation for all domestic defined benefit pension plans was $296 million at December 31, 2022 and $411 million at December 31, 2021.

The fair market value of plan assets exceeded both the accumulated benefit obligation and projected benefit obligation for all domestic plans, except the nonqualified plan, at December 31, 2022 and December 31, 2021.

The net asset position for plans in which assets exceeded the projected benefit obligation is included in prepaid pension cost on the Consolidated Balance Sheets. The net liability position of plans in which the projected benefit obligation exceeded assets is included in other noncurrent liabilities on the Consolidated Balance Sheets.

A portion of the accrued benefit cost for the nonqualified plan is included in current liabilities at both December 31, 2022 and December 31, 2021. As the nonqualified plan is unfunded, the amount reflected in current liabilities represents the expected benefit payments related to the nonqualified plan during the following year.

The table below shows selected information on domestic pension and postretirement benefit plans.

(in thousands)	December 31, 2022	2021
Pension plans with the accumulated benefit obligation in excess of the fair market value of plan assets		
Accumulated benefit obligation	$28,838	$38,161
Fair market value of plan assets	0	0
Pension plans with the projected benefit obligation in excess of the fair market value of plan assets		
Projected benefit obligation	29,042	38,618
Fair market value of plan assets	0	0
Postretirement benefit plans with the accumulated postretirement benefit obligation in excess of the fair market value of plan assets		
Accumulated postretirement benefit obligation	17,782	25,323
Fair market value of plan assets	0	0

There are no assets held by the trustee for the retired beneficiaries of the nonqualified plan. Payments to retired beneficiaries of the nonqualified plan are made with cash from operations. The postretirement healthcare benefits are also unfunded and paid with cash from operations. The benefits from the postretirement life insurance plan are funded through an insurance contract.

Assumptions—We used the following assumptions to calculate the results of our retirement plans:

	Pension Benefits			Postretirement Benefits		
	2022	2021	2020	2022	2021	2020
Weighted-average assumptions used to determine net periodic benefit cost (income) for years ended December 31,						
Discount rate	2.875%	2.875%	3.50%	2.875%	2.875%	3.50%
Expected long-term rate of return on plan assets	8.00%	8.00%	8.50%	4.00%	4.50%	4.50%
Rate of projected compensation increase	3.50%	3.50%	3.50%			
Weighted-average assumptions used to determine benefit obligations at December 31,						
Discount rate	5.625%	2.875%	2.875%	5.625%	2.875%	2.875%
Rate of projected compensation increase	3.50%	3.50%	3.50%			

For pension plans, we base the assumed expected long-term rate of return for plan assets on an analysis of our actual investments, including our asset allocation, as well as an analysis of expected returns. This analysis reflects the expected long-term rates of return for each significant asset class and economic indicator. The range of returns relies both on forecasts and on broad-market historical benchmarks for expected return, correlation, and volatility for each asset class. Our asset allocation is predominantly weighted towards equities. Through ongoing monitoring of our investments and review of market data, we have determined that we should maintain the expected long-term rate of return for our U.S. plans at 8.0% for the year beginning January 1, 2023. For the postretirement plan, we based the assumed expected long-term rate of return for plan assets on an evaluation of projected interest rates, as well as the guaranteed interest rate for our insurance contract. As a result of that evaluation, we have maintained the expected long-term rate of return to 4.0% for the year beginning January 1, 2023.

Plan Assets—Pension plan assets are held and distributed by trusts and consist principally of equity securities and investment-grade fixed income securities. We invest directly in equity securities, as well as in funds which

primarily hold equity and debt securities. Our target allocation is 90% to 97% in equities, 3% to 10% in debt securities and 1% to 5% in cash.

The pension obligation is long-term in nature and the investment philosophy followed by the Pension Investment Committee is likewise long-term in its approach. The majority of the pension funds are invested in equity securities as historically, equity securities have outperformed debt securities and cash investments, resulting in a higher investment return over the long-term. While in the short-term, equity securities may underperform other investment classes, we are less concerned with short-term results and more concerned with long-term improvement. The pension funds are managed by several different investment companies who predominantly invest in U.S. and international equities. Each investment company's performance is reviewed quarterly. A small portion of the funds is in investments such as cash and cash equivalents or short-term bonds, which historically has been less vulnerable to short-term market swings. These funds are used to provide the cash needed to meet our monthly obligations.

There are no significant concentrations of risk within plan assets, nor do the equity securities include any NewMarket common stock for any year presented.

The assets of the postretirement benefit plan are invested completely in an insurance contract. No NewMarket common stock is included in these assets.

The following table provides information on the fair value of our pension and postretirement benefit plans assets, as well as the related level within the fair value hierarchy. Investments that are measured at fair value using the net asset value per share (or its equivalent) practical expedient have not been classified by level in the fair value hierarchy.

	December 31, 2022				December 31, 2021			
		Fair Value Measurements Using				Fair Value Measurements Using		
(in thousands)	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3
Pension Plans								
Equity securities:								
U. S. companies	$417,687	$417,687	$ 0	$ 0	$490,775	$490,775	$ 0	$ 0
International companies	19,022	19,022	0	0	19,762	19,762	0	0
Cash and cash equivalents	18,979	18,979	0	0	12,451	12,451	0	0
Pooled investment funds:								
Fixed income securities—mutual funds	29,838	29,838	0	0	18,345	18,345	0	0
International equities—mutual fund	0	0	0	0	21,020	21,020	0	0
Common collective trusts measured at net asset value	60,014				100,840			
	$545,540	$485,526	$ 0	$ 0	$663,193	$562,353	$ 0	$ 0
Postretirement Plans								
Insurance contract	$ 20,734	$ 0	$20,734	$ 0	$ 20,972	$ 0	$20,972	$ 0

The valuation methodologies used to develop the fair value measurements for the investments in the table above are outlined below. There have been no changes in the valuation techniques used to value the investments.

- Equity securities are valued at the closing price reported on a national exchange.
- Cash and cash equivalents are valued at cost.
- The mutual funds in pooled investment funds are valued at the closing price reported on a national exchange.
- The common collective trusts (the trusts) are valued at the net asset value of units held based on the quoted market value of the underlying investments held by the funds. One of the trusts invests primarily in a diversified portfolio of equity securities included in the S&P 500 index and the other trust invests primarily in a diversified portfolio of equity securities included in the Russell 1000 Value index. There are no restrictions on redemption for the index trusts and there were no unfunded commitments. In 2021, there was a third common collective trust that invested primarily in a diversified portfolio of equity securities of companies located outside of the United States and Canada, as determined by a company's jurisdiction of incorporation. We could make withdrawals from this trust on the first business day of each month with notice of at least 10 days. We sold our interest in this trust during 2022.
- The insurance contracts are unallocated funds deposited with an insurance company and are stated at an amount equal to the sum of all amounts deposited less the sum of all amounts withdrawn, adjusted for investment return.

Cash Flows—For U.S. plans, NewMarket expects to contribute $3 million to our pension plans and $2 million to our postretirement benefit plan in 2023. The expected benefit payments for the next ten years are as follows.

(in thousands)	Expected Pension Benefit Payments	Expected Postretirement Benefit Payments
2023	$ 15,574	$2,249
2024	16,626	2,107
2025	17,573	2,008
2026	18,469	1,932
2027	19,445	1,866
2028 through 2032	112,278	9,122

Foreign Retirement Plans

For most employees of our foreign subsidiaries, NewMarket has defined benefit pension plans that offer benefits based primarily on years of service and compensation. These defined benefit plans provide benefits for employees of our foreign subsidiaries located in Belgium, the U.K., Germany, Canada, and Mexico. NewMarket generally contributes to investment trusts and insurance accounts to provide for these plans.

The components of net periodic pension cost (income), as well as other amounts recognized in other comprehensive income (loss), for these foreign defined benefit pension plans are shown below.

(in thousands)	Years Ended December 31, 2022	2021	2020
Net periodic benefit cost (income)			
Service cost	$ 8,546	$ 10,260	$ 8,544
Interest cost	4,105	3,305	3,866
Expected return on plan assets	(9,827)	(10,659)	(9,729)
Amortization of prior service cost (credit)	137	152	(43)
Amortization of actuarial net (gain) loss	630	3,595	1,420
Net periodic benefit cost (income)	3,591	6,653	4,058
Other changes in plan assets and benefit obligations recognized in other comprehensive income (loss)			
Actuarial net (gain) loss	(41,108)	(38,259)	33,816
Prior service cost (credit)	0	0	0
Amortization of actuarial net gain (loss)	(630)	(3,595)	(1,420)
Amortization of prior service (cost) credit	(137)	(152)	43
Total recognized in other comprehensive income (loss)	(41,875)	(42,006)	32,439
Total recognized in net periodic benefit cost (income) and other comprehensive income (loss)	$(38,284)	$(35,353)	$36,497

Changes in the benefit obligations and assets of the foreign defined benefit pension plans follow.

(in thousands)	December 31, 2022	December 31, 2021
Change in benefit obligation		
Benefit obligation at beginning of year	$235,347	$262,589
Service cost	8,546	10,260
Interest cost	4,105	3,305
Employee contributions	693	771
Actuarial net (gain) loss	(87,076)	(31,254)
Benefits paid	(5,403)	(5,832)
Foreign currency translation	(20,412)	(4,492)
Benefit obligation at end of year	135,800	235,347
Change in plan assets		
Fair value of plan assets at beginning of year	230,389	212,617
Actual return on plan assets	(34,748)	19,216
Employer contributions	5,981	6,543
Employee contributions	693	771
Benefits paid	(5,403)	(5,832)
Foreign currency translation	(22,364)	(2,926)
Fair value of plan assets at end of year	174,548	230,389
Funded status	$ 38,748	$ (4,958)
Amounts recognized in the Consolidated Balance Sheets		
Noncurrent assets	$ 58,374	$ 19,602
Current liabilities	(321)	(330)
Noncurrent liabilities	(19,305)	(24,230)
	$ 38,748	$ (4,958)
Amounts recognized in accumulated other comprehensive loss		
Actuarial net (gain) loss	$ 1,706	$ 43,444
Prior service cost (credit)	532	669
	$ 2,238	$ 44,113

The accumulated benefit obligation for all foreign defined benefit pension plans was $122 million at December 31, 2022 and $204 million at December 31, 2021.

The fair market value of plan assets exceeded both the accumulated benefit obligation and projected benefit obligation for the Canada and U.K. plans at both year-end 2022 and 2021. The net asset position of the Canada and U.K. plans are included in prepaid pension cost on the Consolidated Balance Sheets at December 31, 2022 and December 31, 2021. The accumulated benefit obligation and projected benefit obligation exceeded the fair market value of plan assets for the Germany, Belgium, and Mexico plans at December 31, 2022 and December 31, 2021. The accrued benefit cost of these plans is included in other noncurrent liabilities on the Consolidated Balance Sheets for both years.

As the Germany plan is unfunded, a portion of the accrued benefit cost is included in current liabilities at year-end 2022 and 2021, reflecting the expected benefit payments related to the plan for the following year.

The table below shows selected information on foreign pension plans.

(in thousands)	December 31, 2022	December 31, 2021
Pension plans with the accumulated benefit obligation in excess of the fair market value of plan assets		
Accumulated benefit obligation	$22,625	$26,415
Fair market value of plan assets	13,072	13,110
Pension plans with the projected benefit obligation in excess of the fair market value of plan assets		
Projected benefit obligation	32,699	37,670
Fair market value of plan assets	13,072	13,110

Assumptions—We used the following weighted-average assumptions to calculate the results of our foreign defined benefit pension plans.

	2022	2021	2020
Weighted-average assumptions used to determine net periodic benefit cost (income) for the years ended December 31,			
Discount rate	1.91%	1.14%	1.81%
Expected long-term rate of return on plan assets	4.59%	4.95%	5.23%
Rate of projected compensation increase	4.07%	3.94%	3.96%
Weighted-average assumptions used to determine benefit obligations at December 31,			
Discount rate	4.61%	1.91%	1.14%
Rate of projected compensation increase	3.55%	4.07%	3.94%

The actuarial assumptions used by the various foreign locations are based upon the circumstances of each particular country and pension plan. The factors impacting the determination of the long-term rate of return for a particular foreign pension plan include the market conditions within a particular country, as well as the investment strategy and asset allocation of the specific plan.

Plan Assets—Pension plan assets vary by foreign location and plan. Assets are held and distributed by trusts and, depending upon the foreign location and plan, consist primarily of pooled equity funds, pooled debt securities funds, pooled diversified funds, equity securities, debt securities, cash, and insurance contracts. The combined weighted-average target allocation of our foreign pension plans is 38% in equities (including pooled funds), 36% in debt securities (including pooled funds), 7% in insurance contracts, and 19% in pooled diversified funds.

While the pension obligation is long-term in nature for each of our foreign plans, the investment strategies followed by each plan vary to some degree based upon the laws of a particular country, as well as the provisions of the specific pension trust. The U.K. and Canada plans are invested predominantly in equity securities funds, diversified funds, and debt securities funds. The funds of these plans are managed by various trustees and investment companies whose performance is reviewed throughout the year. The Belgium plan is invested in an insurance contract. The Mexico plans are invested in mutual funds, equities, and debt securities. The Germany plan has no assets.

There are no significant concentrations of risk within plan assets, nor do the equity securities include any NewMarket common stock for any year presented.

The following table provides information on the fair value of our foreign pension plans assets, as well as the related level within the fair value hierarchy. Investments that are measured at fair value using net asset value per share (or its equivalent) have not been classified by level in the fair value hierarchy.

	December 31, 2022				December 31, 2021			
		Fair Value Measurements Using				Fair Value Measurements Using		
(in thousands)	Fair Value	Level 1	Level 2	Level 3	Fair Value	Level 1	Level 2	Level 3
Insurance contract	$ 11,199	$ 0	$11,199	$0	$ 11,223	$ 0	$11,223	$0
Equity securities—international companies	492	492	0	0	626	626	0	0
Debt securities	734	734	0	0	438	438	0	0
Pooled investment funds—mutual funds	647	647	0	0	822	822	0	0
Cash and cash equivalents	384	384	0	0	755	755	0	0
Pooled investment funds (measured at net asset value):								
Equity securities—U.S. companies	0				16,596			
Equity securities—international companies	76,177				75,931			
Debt securities	49,494				81,224			
Diversified growth funds	35,421				42,774			
	$174,548	$2,257	$11,199	$0	$230,389	$2,641	$11,223	$0

The valuation methodologies used to develop the fair value measurements for the investments in the table above are outlined below. There have been no changes in the valuation techniques used to value the investments.

- The insurance contract represents funds deposited with an insurance company and is stated at an amount equal to the sum of all amounts deposited less the sum of all amounts withdrawn, adjusted for investment return.
- Equity securities are valued at the closing price reported on a national exchange.
- Debt securities are valued by quoted market prices or valued based on yields currently available on comparable securities of issuers with similar credit ratings.
- Pooled investment mutual funds are valued at the closing price reported on a national exchange.
- Cash and cash equivalents are valued at cost.
- The pooled investment funds are valued at the net asset value of units held by the plans based on the quoted market value of the underlying investments held by the fund. The U.K. pension plan is invested in units of life insurance policies that are linked to equity securities funds, government bond funds, and diversified growth funds. The underlying assets of the equity funds, bond funds, and diversified growth funds are traded on a national exchange and are based on tracking various indices of the London Stock Exchange. There are no redemption restrictions on these funds. There were no unfunded commitments for the U.K. pension plan funds. The Canada pension plan is invested in a pooled Canadian equity fund and a pooled diversified fund. The Canadian equity fund invests in a diversification (sector and industry) of equities listed on a recognized Canadian exchange. The diversified fund invests in a

diversified mix of equities, fixed income securities, cash, and cash equivalent securities. There are no redemption restrictions on the pooled Canadian funds and there were no unfunded commitments.

Cash Flows—For foreign pension plans, NewMarket expects to contribute $6 million to the plans in 2023. The expected benefit payments for the next ten years for our foreign pension plans are shown in the following table.

(in thousands)	Expected Pension Benefit Payments
2023	$ 6,649
2024	7,133
2025	5,606
2026	5,726
2027	6,381
2028 through 2032	38,082

19. Income Taxes

Our income before income tax expense, as well as our provision for income taxes is shown in the table below.

	Years Ended December 31,		
(in thousands)	2022	2021	2020
Income before income tax expense			
Domestic	$170,785	$ 97,245	$149,791
Foreign	176,949	150,306	181,496
	$347,734	$247,551	$331,287
Income tax expense			
Current income taxes			
Federal	$ 57,778	$ 13,166	$ 14,861
State	12,515	7,639	6,106
Foreign	40,548	33,860	32,198
	110,841	54,665	53,165
Deferred income taxes			
Federal	(34,088)	1,232	4,498
State	(8,491)	38	1,090
Foreign	(66)	708	1,966
	(42,645)	1,978	7,554
Total income tax expense	$ 68,196	$ 56,643	$ 60,719

The reconciliation of the U.S. federal statutory rate to the effective income tax rate follows.

	% of Income Before Income Tax Expense		
	2022	2021	2020
Federal statutory rate	21.0%	21.0%	21.0%
State taxes, net of federal tax	0.9	2.4	1.7
Foreign operations	1.4	2.4	0.7
Research tax credit	(1.6)	(2.2)	(1.7)
Foreign-derived intangible tax benefit	(3.0)	(0.7)	(0.4)
Uncertain tax positions	0.3	(0.1)	(1.7)
Taxes applicable to prior years	(0.1)	(0.4)	(1.4)
Other items and adjustments	0.7	0.5	0.1
Effective income tax rate	19.6%	22.9%	18.3%

Our deferred income tax assets and liabilities follow.

	December 31,	
(in thousands)	2022	2021
Deferred income tax assets		
Capitalized research expenses	$ 53,249	$ 15,708
Lease liabilities	11,868	12,775
Operating loss and credit carryforwards	15,336	12,746
Foreign currency translation adjustments	5,261	4,054
Other	14,159	11,027
Gross deferred income tax assets	99,873	56,310
Valuation allowance	(13,012)	(12,219)
Total deferred income tax assets	86,861	44,091
Deferred income tax liabilities		
Depreciation and amortization	78,058	79,023
Future employee benefits	52,446	32,253
Lease assets	12,174	12,790
Other	2,601	4,145
Total deferred income tax liabilities	145,279	128,211
Net deferred income tax (liabilities) assets	$ (58,418)	$ (84,120)

Net deferred income tax (liabilities) assets in the table above are reflected in the Consolidated Balance Sheets on a net jurisdictional basis. Deferred income tax assets are included in deferred charges and other assets. See Note 12. Deferred income tax liabilities are included in other noncurrent liabilities. See Note 15.

Our deferred taxes are in a net liability position at December 31, 2022. Our deferred tax assets include $15 million of foreign operating loss carryforwards, foreign capital loss carryforwards, foreign non-trading deficit carryforwards, and foreign and state tax credits. The operating loss carryforwards expire in 2028 through 2040 and certain tax credits expire in 2026 through 2027. Based on current forecasted operating plans and historical profitability, we believe that we will recover the full benefit of our deferred tax assets with the exception of $13 million of the aforementioned operating loss, capital loss, and tax credit carryforwards. Therefore, as of December 31, 2022, we have recorded an offsetting valuation allowance in this amount. During 2021, we released the valuation allowance on a negligible amount of net operating losses that we utilized during the year. During 2022, we did not release any valuation allowances.

We do not expect to distribute earnings from our foreign subsidiaries in a manner that would result in significant U.S. tax, as these earnings have been previously taxed in the U.S. or meet the requirements for a dividends received deduction. However, at December 31, 2021, we had a $2 million deferred tax liability for the currency impact and for the withholding taxes that will not be creditable upon distribution. As of December 31, 2022, we have an immaterial deferred tax liability for withholding taxes that will not be creditable upon distribution.

We have not provided a deferred tax liability on approximately $268 million of temporary differences related to investments in foreign subsidiaries that are essentially permanent in duration, as these earnings are considered to be indefinitely reinvested. If we were to repatriate these earnings, we could be subject to income taxes and withholding taxes in various countries. Determination of the amount of unrecognized deferred income tax liability is not practicable due to the complexity associated with the hypothetical calculation.

A reconciliation of the beginning and ending balances of the unrecognized tax benefits from uncertain positions is as follows:

	December 31,		
(in thousands)	2022	2021	2020
Balance at beginning of year	$6,374	$6,905	$13,543
Increases for tax positions of prior years	1,677	0	363
Increases for tax positions of the current year	809	698	824
Settlements	0	(247)	0
Lapses of statutes	(981)	(982)	(7,825)
Balance at end of year	$7,879	$6,374	$ 6,905

At December 31, 2022, all of the amount of unrecognized tax benefits, if recognized, would affect our effective tax rate.

We expect the amount of unrecognized tax benefits to change in the next twelve months; however, we do not expect the change to have a material impact on our financial statements.

Our U.S. subsidiaries file a U.S. federal consolidated income tax return. We are currently under examination by various U.S. state and foreign jurisdictions and remain subject to examination until the statute of limitations expires for the respective tax jurisdiction. We are no longer subject to U.S. federal income examination for years before 2019, with the exception of 2017. Foreign and U.S. state jurisdictions have statutes of limitations generally ranging from 3 years to 5 years. Years still open to examination by foreign tax authorities in major jurisdictions include: the U.K. (2020 and forward); Singapore (2018 and forward); Belgium (2019 and forward); and Mexico (2017 and forward).

20. Fair Value Measurements

The carrying amount of cash and cash equivalents in the Consolidated Balance Sheets, as well as the fair value, was $69 million at December 31, 2022 and $83 million at December 31, 2021. The fair value is categorized in Level 1 of the fair value hierarchy.

No material events occurred during 2022 requiring adjustment to the recognized balances of assets or liabilities which are recorded at fair value on a nonrecurring basis.

Long-term debt - We record the carrying amount of our long-term debt at historical cost, less deferred financing costs related to our outstanding senior notes. The estimated fair value of our long-term debt is shown in the table below and is based primarily on estimated current rates available to us for debt of the same remaining duration

and adjusted for nonperformance risk and credit risk. The estimated fair value of our publicly traded outstanding senior notes included in long-term debt in the table below is based on the last quoted price closest to December 31 of each year. The fair value of our debt instruments is categorized as Level 2.

	December 31, 2022		December 31, 2021	
(in thousands)	Carrying Amount	Fair Value	Carrying Amount	Fair Value
Long-term debt, including current maturities	$1,003,737	$906,891	$1,139,287	$1,178,066

21. Commitments and Contingencies

Contractual Commitments—We have non-lease contractual obligations for the construction of assets, as well as purchases of property and equipment, of approximately $18 million at December 31, 2022, all of which are due within five years. We also have commitments for leases which have not yet commenced. See Note 17 for further information.

Purchase Obligations—We have purchase obligations for goods or services that are enforceable, legally binding, and specify all significant terms, including: fixed or minimum quantities to be purchased; fixed, minimum, or variable price provisions; and the approximate timing of the transaction. Purchase obligations exclude agreements that are cancelable without penalty. Purchase orders made in the ordinary course of business are excluded from this amount. Any amounts for which we are liable under purchase orders are reflected in our Consolidated Balance Sheets as accounts payable or accrued expenses.

Future payments for purchase obligations as of December 31, 2022 are (in thousands):

2023	$83,038
2024	27,634
2025	3,634
2026	3,001
2027	2,959
After 2027	6,875

Litigation—We are involved in legal proceedings that are incidental to our business and may include administrative or judicial actions. Some of these legal proceedings involve governmental authorities and relate to environmental matters. For further information, see Environmental below and Item 1 of this Form 10-K.

While it is not possible to predict or determine with certainty the outcome of any legal proceeding, we believe the outcome of any of these proceedings, or all of them combined, will not result in a material effect on our financial statements.

Asbestos

We are a defendant in personal injury lawsuits involving exposure to asbestos. These cases involve exposure to asbestos in premises owned or operated, or formerly owned or operated, by subsidiaries of NewMarket. We have never manufactured, sold, or distributed products that contain asbestos. Nearly all of these cases are pending in Texas, Louisiana, or Illinois and involve multiple defendants. We maintain an accrual for these proceedings, as well as a receivable for expected insurance recoveries.

The accrual for our premises asbestos liability related to currently asserted claims is based on the following assumptions and factors:

- We are often one of many defendants. This factor influences both the number of claims settled against us and the indemnity cost associated with such resolutions.
- The estimated percent of claimants in each case that, after discovery, will actually make a claim against us, out of the total number of claimants in a case, is based on a level consistent with past experience and current trends.
- We utilize average comparable plaintiff cost history as the basis for estimating pending premises asbestos-related claims. These claims are filed by both former contractors and former employees who worked at past and present company locations. We also include an estimated inflation factor in the calculation.
- No estimate is made for unasserted claims.
- The estimated recoveries from insurance and Albemarle Corporation (a former operation of our company) for these cases are based on, and are consistent with, the 2005 settlement agreements with The Travelers Indemnity Company.

Based on the above assumptions, we have provided an undiscounted liability related to premises asbestos claims of $7 million at December 31, 2022 and $8 million at December 31, 2021. The liabilities related to premises asbestos claims are included in accrued expenses (current portion) and other noncurrent liabilities on the Consolidated Balance Sheets. Certain of these costs are recoverable through the settlement agreements with The Travelers Indemnity Company and with Albemarle Corporation. The receivable for these recoveries related to premises asbestos liabilities was $4 million at both December 31, 2022 and December 31, 2021. These receivables are included in trade and other accounts receivable, net on the Consolidated Balance Sheets for the current portion. The noncurrent portion is included in deferred charges and other assets.

Environmental—We are involved in environmental proceedings and potential proceedings relating to soil and groundwater contamination, disposal of hazardous waste, and other environmental matters at several of our current or former facilities, or at third-party sites where we have been designated as a PRP. While we believe we are currently adequately accrued for known environmental issues, it is possible that unexpected future costs could have a significant impact on our financial statements. Our total accruals for environmental remediation, dismantling, and decontamination were approximately $10 million at December 31, 2022 and $11 million at December 31, 2021. Of the total accrual, the current portion is included in accrued expenses and the noncurrent portion is included in other noncurrent liabilities on the Consolidated Balance Sheets.

Our more significant environmental sites include a former plant site in Louisiana (the Louisiana site) and a Houston, Texas plant site (the Texas site). Together, the amounts accrued on a discounted basis related to these sites represented approximately $8 million of the total accrual at both December 31, 2022 and December 31, 2021, using discount rates ranging from 3% to 9%. The aggregate undiscounted amount for these sites was $10 million at both December 31, 2022 and December 31, 2021. Of the total accrued for these two sites, the amount related to remediation of groundwater and soil was $3 million for the Louisiana site and $4 million for the Texas site at both December 31, 2022 and December 31, 2021.

22. Other Comprehensive Income (Loss) and Accumulated Other Comprehensive Loss

The balances of, and changes in, the components of accumulated other comprehensive loss, net of tax, consist of the following:

(in thousands)	Pension Plans and Other Postretirement Benefits	Foreign Currency Translation Adjustments	Accumulated Other Comprehensive (Loss) Income
Balance at December 31, 2019	$(69,795)	$ (92,953)	$(162,748)
Other comprehensive income (loss) before reclassifications	(25,490)	12,560	(12,930)
Amounts reclassified from accumulated other comprehensive loss (a)	2,514	0	2,514
Other comprehensive income (loss)	(22,976)	12,560	(10,416)
Balance at December 31, 2020	(92,771)	(80,393)	(173,164)
Other comprehensive income (loss) before reclassifications	89,194	(3,356)	85,838
Amounts reclassified from accumulated other comprehensive loss (a)	5,099	0	5,099
Other comprehensive income (loss)	94,293	(3,356)	90,937
Balance at December 31, 2021	1,522	(83,749)	(82,227)
Other comprehensive income (loss) before reclassifications	53,019	(42,808)	10,211
Amounts reclassified from accumulated other comprehensive loss (a)	21	0	21
Other comprehensive income (loss)	53,040	(42,808)	10,232
Balance at December 31, 2022	$ 54,562	$(126,557)	$ (71,995)

(a) The pension plan and other postretirement benefit components of accumulated other comprehensive loss are included in the computation of net periodic benefit cost (income). See Note 18 for further information.

23. Recent Accounting Pronouncements

In September 2022, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2022-04, "Liabilities—Supplier Finance Programs—Disclosure of Supplier Finance Program Obligations" (ASU 2022-04). FASB issued ASU 2022-04 to enhance the transparency of supplier finance programs by requiring disclosures surrounding the programs be included in the financial statements. ASU 2022-04 is effective for our reporting period beginning January 1, 2023. We continue to evaluate the impact of ASU 2022-04 on our consolidated financial statements, but do not currently expect a significant impact.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain a system of internal control over financial reporting to provide reasonable, but not absolute, assurance of the reliability of the financial records and the protection of assets. Under Rule 13a-15(b) of the Securities Exchange Act of 1934 (the Exchange Act), we carried out an evaluation, with the participation of our management, including our principal executive officer and our principal financial officer, of the effectiveness of our disclosure controls and procedures, as such term is defined in Rule 13a-15(e) of the Exchange Act, as of the end of the period covered by this report. Based upon that evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures are effective at the reasonable assurance level.

There has been no change in our internal control over financial reporting, as such term is defined in Rule 13a-15(f) of the Exchange Act, during the quarter ended December 31, 2022 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rule 13a-15(f) of the Exchange Act.

Our 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 accounting principles generally accepted in the United States of America. Internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States of America and that our receipts and expenditures are being made only in accordance with authorization of our management and directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of assets that could have a material effect on the consolidated 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.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in "Internal Control—Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under that framework, our management concluded that our internal control over financial reporting was effective at the reasonable assurance level as of December 31, 2022. The effectiveness of our internal control over financial

reporting as of December 31, 2022, has been audited by PricewaterhouseCoopers LLP (PCAOB ID 238), an independent registered public accounting firm, as stated in their report, which is included in Item 8 of this Annual Report on Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item is incorporated by reference to our definitive Proxy Statement for our 2023 annual meeting of shareholders (Proxy Statement) under the headings entitled "Election of Directors," "Committees of Our Board," "Certain Relationships and Related Transactions," and "Delinquent Section 16(a) Reports" and is included in Part I of this Form 10-K under the heading entitled "Information about our Executive Officers."

We have adopted a Code of Conduct that applies to our directors, officers, and employees (including our principal executive officer, principal financial officer, and principal accounting officer) and have posted the Code of Conduct on our internet website. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K relating to amendments to or waivers from any provision of our Code of Conduct applicable to the principal executive officer, principal financial officer, and principal accounting officer by posting this information on our internet website. Our internet website address is www.newmarket.com.

We have filed, as exhibits to this Annual Report on Form 10-K, the certifications of our principal executive officer and principal financial officer required under Sections 906 and 302 of the Sarbanes Oxley Act of 2002 to be filed with the SEC regarding the quality of our public disclosure.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference to our Proxy Statement under the headings (including the narrative disclosures following a referenced table) entitled "Compensation Discussion and Analysis," "The Compensation Committee Report," "Compensation of Executive Officers," and "Compensation of Directors."

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

Except as noted below, the information required by this item is incorporated by reference to our Proxy Statement under the heading "Stock Ownership."

The following table presents information as of December 31, 2022 with respect to equity compensation plans under which shares of our common stock are authorized for issuance.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by shareholders:			
2014 Incentive Compensation and Stock Plan	0	$0	938,034
Equity compensation plans not approved by shareholders (b)	0	0	0
Total	0	$0	938,034

(a) There are no outstanding options, rights, or warrants.
(b) We do not have any equity compensation plans that have not been approved by shareholders.

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

The information required by this item is incorporated by reference to our Proxy Statement under the headings entitled “Board of Directors” and “Certain Relationships and Related Transactions.”

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference to our Proxy Statement under the heading “Ratification of Appointment of Independent Registered Public Accounting Firm.”

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(A)(1) Management's Report on Internal Control Over Financial Reporting

Report of Independent Registered Public Accounting Firm

Consolidated Statements of Income for each of the three years in the period ended December 31, 2022

Consolidated Statements of Comprehensive Income for each of the three years in the period ended December 31, 2022

Consolidated Balance Sheets as of December 31, 2022 and 2021

Consolidated Statements of Shareholders' Equity for each of the three years in the period ended December 31, 2022

Consolidated Statements of Cash Flows for each of the three years in the period ended December 31, 2022

Notes to Consolidated Financial Statements

(A)(2) Financial Statement Schedules—none required

(A)(3) Exhibits

3.1 Articles of Incorporation Amended and Restated effective April 27, 2012 (incorporated by reference to Exhibit 3.1 to Form 8-K (File No. 1-32190) filed April 30, 2012)

3.2 NewMarket Corporation Bylaws Amended and Restated effective August 6, 2015 (incorporated by reference to Exhibit 3.1 to Form 8-K (File No. 1- 32190) filed August 6, 2015)

4.1 Description of Company's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934, (incorporated by reference to Exhibit 4.1 to Form 10-K (File No. 1-32190) filed February 16, 2021)

4.2 Indenture, dated as of March 18, 2021, between NewMarket Corporation and Wells Fargo Bank, National Association, as trustee (incorporated by reference to exhibit 4.1 to Form 8-K (File No. 1- 32190) filed March 18, 2021)

4.3 First Supplemental Indenture, dated as of March 18, 2021, between NewMarket Corporation and Wells Fargo Bank, National Association, as trustee (incorporated by reference to exhibit 4.2 to Form 8-K (File No. 1- 32190) filed March 18, 2021)

4.4 Form of 2.70% Senior Notes due 2031 (form included as Exhibit A to the First Supplemental Indenture (incorporated by reference to exhibit 4.3 to Form 8-K (File No. 1- 32190) filed March 18, 2021)

10.1 Note Purchase Agreement dated January 4, 2017, by and among NewMarket Corporation, The Prudential Life Insurance Company of America, The Gibraltar Life Insurance Co., Ltd, The Lincoln National Life Insurance Company and The Prudential Life Insurance Company, Ltd., (incorporated by reference to Exhibit 10.1 to Form 8-K (File No. 1-32190) filed January 5, 2017)

10.2 First Amendment, dated as of October 10, 2017, to Note Purchase Agreement dated January 4, 2017, by and among NewMarket Corporation, The Prudential Insurance Company of America, The Gibraltar Life Insurance Co., Ltd, The Lincoln National Life Insurance Company and The Prudential Life Insurance Company, Ltd. (incorporated by reference to Exhibit 10.2 to Form 10-Q (file No. 1-32190) filed October 26, 2017)

10.3 Second Amendment, dated as of March 19, 2020, to the Note Purchase agreement dated January 4, 2017, by and among NewMarket Corporation, The Prudential Insurance Company of America, The Gibraltar Life Insurance Co., Ltd, The Lincoln National Life Insurance Company and The Prudential Life Insurance Company, Ltd (incorporated by reference to Exhibit 10.2 to Form 10-Q (file No. 1-32190) filed April 23, 2020)

10.4 2014 Incentive Compensation and Stock Plan (incorporated by reference to Exhibit 10.1 to Form 8-K (File No. 1-32190) filed April 24, 2014)*

10.5 Excess Benefit Plan (incorporated by reference to Exhibit 10.4 to Ethyl Corporation's Form 10-K (File No. 1-5112) filed February 25, 1993)*

10.6 Trust Agreement between Ethyl Corporation and Merrill Lynch Trust Company of America (incorporated by reference to Exhibit 4.5 to Ethyl Corporation's Registration Statement on Form S-8 (Registration No. 333-60889) filed August 7, 1998)

10.7 NewMarket Corporation and Affiliates Bonus Plan (incorporated by reference to Exhibit 10.9 to Ethyl Corporation's Form 10-K (File No. 1-5112) filed March 14, 2003)*

10.8 Indemnification Agreement, dated as of July 1, 2004 by and among NewMarket Corporation, Ethyl Corporation and Afton Chemical Corporation (incorporated by reference to Exhibit 10.5 to Form 10-Q (File No. 1-32190) filed August 5, 2004)

10.9 Services Agreement, dated as of July 1, 2004, by and between NewMarket Services Corporation and Afton Chemical Corporation (incorporated by reference to Exhibit 10.2 to Form 10-Q (File No. 1-32190) filed November 5, 2004)

10.10 Services Agreement, dated as of July 1, 2004, by and between NewMarket Services Corporation and Ethyl Corporation (incorporated by reference to Exhibit 10.3 to Form 10-Q (File No. 1-32190) filed November 5, 2004)

10.11 Services Agreement, dated as of July 1, 2004, by and between NewMarket Services Corporation and NewMarket Corporation (incorporated by reference to Exhibit 10.4 to Form 10-Q (File No. 1-32190) filed November 5, 2004)

10.12 Summary of Directors' Compensation (incorporated by reference to Exhibit 10.1 to Form 10-Q (1-32190) filed October 26, 2021)*

10.13 Form of Restricted Stock Award Agreement (incorporated by reference to Exhibit 10.13 to Form 10-K (File No. 1-32190) filed February 19, 2019)*

10.14 Form of Performance Stock Award Agreement (incorporated by reference to Exhibit 10.1 to Form 8-K (File No. 1-32190) filed February 26, 2018)*

10.15 Credit Agreement, dated as of March 5, 2020, by and among the Company and the Foreign Subsidiary Borrowers party thereto; the Lenders party thereto; JPMorgan Chase Bank, N.A., as Administrative Agent; Bank of America, N.A., as Syndication Agent; U.S. Bank National Association, Citibank, N.A., Wells Fargo Bank, National Association, and DBS Bank Ltd., as Co-Documentation Agents; and Bank of the West and TD Bank, N.A., as Senior Managing Agents (incorporated by reference to Exhibit 10.1 to Form 8-K (file No. 1-32190) filed March 11, 2020)

10.16 Amendment No. 1, dated November 5, 2021, to the Credit Agreement dated March 5, 2020, by and among the Company and the Foreign Subsidiary Borrowers party thereto; the Lenders party thereto; JPMorgan Chase Bank, N.A., as Administrative Agent; Bank of America, N.A., as Syndication Agent; U.S. Bank National Association, Citibank, N.A., Wells Fargo Bank, National Association, and DBS Bank Ltd., as Co-Documentation Agents; and Bank of the West and TD Bank, N.A., as Senior Managing Agents

10.17	Amendment No. 2, dated January 11, 2023, to the Credit Agreement dated March 5, 2020, by and among the Company and the Foreign Subsidiary Borrowers party thereto; the Lenders party thereto; JPMorgan Chase Bank, N.A., as Administrative Agent; Bank of America, N.A., as Syndication Agent; U.S. Bank National Association, Citibank, N.A., Wells Fargo Bank, National Association, and DBS Bank Ltd., as Co-Documentation Agents; and Bank of the West and TD Bank, N.A., as Senior Managing Agents
21	Subsidiaries of the Registrant
23	Consent of Independent Registered Public Accounting Firm
31(a)	Certification pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, by Thomas E. Gottwald
31(b)	Certification pursuant to Rule 13a-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, by William J. Skrobacz
32(a)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, by Thomas E. Gottwald
32(b)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, by William J. Skrobacz
101	XBRL Instance Document and Related Items
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Indicates management contracts, compensatory plans or arrangements of the company required to be filed as an exhibit

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(B) Exhibits—The response to this portion of Item 15 is submitted as a separate section of this Annual Report on Form 10-K.

ITEM 16. FORM 10-K SUMMARY

None.

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.

NEWMARKET CORPORATION

By: /s/ Thomas E. Gottwald
(Thomas E. Gottwald, Chairman of the Board, President, and Chief Executive Officer)

Date: February 15, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated as of February 15, 2023.

SIGNATURE	TITLE
/S/ THOMAS E. GOTTWALD **(Thomas E. Gottwald)**	Chairman of the Board, President, Chief Executive Officer, and Director (Principal Executive Officer)
/S/ WILLIAM J. SKROBACZ **(William J. Skrobacz)**	Chief Financial Officer and Vice President (Principal Financial Officer)
/S/ GAIL C. RIDGEWAY **(Gail C. Ridgeway)**	Controller (Principal Accounting Officer)
/S/ MARK M. GAMBILL **(Mark M. Gambill)**	Director
/S/ BRUCE C. GOTTWALD **(Bruce C. Gottwald)**	Director
/S/ PATRICK D. HANLEY **(Patrick D. Hanley)**	Director
/S/ H. HITER HARRIS **(H. Hiter Harris III)**	Director
/S/ J. E. ROGERS **(James E. Rogers)**	Director
/S/ TING XU **(Ting Xu)**	Director

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SHAREHOLDER INFORMATION

TICKER SYMBOL: NEU

TRANSFER AGENT:

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Other inquiries should be directed to
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1-312-360-5144

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