

**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 001-34223

CLEAN HARBORS, INC.

(Exact name of registrant as specified in its charter)

Massachusetts
(State or Other Jurisdiction of Incorporation or Organization)
42 Longwater Drive Norwell MA
(Address of Principal Executive Offices)

04-2997780
(IRS Employer Identification No.)
02061-9149
(Zip Code)

Registrant's Telephone Number, Including area code: **(781) 792-5000**

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934:

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, \$0.01 par value	CLH	New York Stock Exchange

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, a 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
Non-accelerated filer

Accelerated filer
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 Exchange Act). Yes No

The aggregate market value of the voting Common Stock held by non-affiliates at June 30, 2022 was approximately \$4.4 billion using the New York Stock Exchange closing price for such shares on that date. For purposes of this calculation, all directors and executive officers are affiliates.)

On February 22, 2023, there were outstanding 54,071,905 shares of Common Stock, \$0.01 par value.

DOCUMENTS INCORPORATED BY REFERENCE

Document
Proxy Statement for the
2023 Annual Meeting of Stockholders

Incorporated as to
Part III

CLEAN HARBORS, INC.
ANNUAL REPORT ON FORM 10-K
YEAR ENDED DECEMBER 31, 2022
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Disclosure Regarding Forward-Looking Statements

In addition to historical information, this Annual Report on Form 10-K contains forward-looking statements, which are generally identifiable by use of the words "believes," "expects," "intends," "anticipates," "plans to," "seeks," "should," "estimates," "projects," "may," "likely" or similar expressions. Such statements may include, but are not limited to, statements about future financial and operating results, the Company's plans, objectives, expectations and intentions and other statements that are not historical facts. Forward-looking statements are neither historical facts nor assurances of future performance. Such statements are based upon the beliefs and expectations of Clean Harbors' management as of this date only and are subject to certain risks and uncertainties identified in this report under Item 1A, "Risk Factors," and Item 7, "Management's Discussion and Analysis on Financial Condition and Results of Operations." Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect management's opinions only as of the date hereof. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements. Readers should also carefully review the risk factors described in the other documents which we file from time to time with the Securities and Exchange Commission ("SEC"), including Clean Harbors' quarterly reports on Form 10-Q to be filed during 2023.

PART I

ITEM 1. BUSINESS

General

Clean Harbors, Inc. and its subsidiaries (collectively, "we," "Clean Harbors" or the "Company") is a leading provider of sustainable environmental and industrial services throughout North America. We are also the largest re-refiner and recycler of used oil in North America and the largest provider of parts cleaning and related environmental services to commercial, industrial and automotive customers in North America. Everywhere industry meets the environment, we strive to provide eco-friendly services and products that protect and restore North America's natural environment. One of our primary goals as a company is supporting our customers in providing environmentally responsible solutions to further their sustainability goals in today's rapidly progressing world.

We have two operating segments through which the Company conducts its operations: (i) the Environmental Services segment and (ii) the Safety-Kleen Sustainability Solutions segment.

- **Environmental Services** - Environmental Services segment results are predicated upon the demand by our customers for our wide variety of services, waste volumes managed by delivering such services and project work for which responsible waste handling and/or disposal is required. Environmental Services results are also impacted by the demand for planned and unplanned industrial related cleaning and maintenance services at customer sites, environmental cleanup services on a scheduled or emergency basis, including response to large scale events such as major chemical spills, natural disasters, or other instances where immediate and specialized services are required. The Environmental Services segment results include the Safety-Kleen branches' core environmental service offerings of containerized waste disposal, parts washer and vacuum services. These results are driven by the volumes of waste collected from these customers, the overall number of parts washers placed at customer sites and the demand for and frequency of other offered services. In managing the business and evaluating performance, management tracks the volumes and mix of waste handled and disposed of or recycled, generally through our incinerators, treatment, storage and disposal facilities ("TSDFs") and landfills, the utilization rates of our incinerators, equipment and workforce, including billable hours, and number of parts washer services performed, pricing realized by our business and peer companies as well as other key metrics. Levels of activity and ultimate performance associated with this segment can be impacted by several factors including overall U.S. GDP, U.S. industrial production, economic conditions in the chemical, manufacturing and automotive markets including efforts and economic incentives to reshore operations to the U.S., available capacity at waste disposal outlets, weather conditions, efficiency of our operations, technology, changing regulations, competition, market pricing of our services, costs incurred to deliver our services and the management of our related operating costs.
- **Safety-Kleen Sustainability Solutions** - Safety-Kleen Sustainability Solutions segment results are impacted by our customers' demand for high-quality, environmentally responsible recycled oil products and their demand for our related service and product offerings. Safety-Kleen Sustainability Solutions offers high quality recycled base and blended oil products, including our KLEEN+ brand of Group II+ base oils, to end users including fleet customers, distributors and manufacturers of oil products. Segment results are impacted by overall demand, market pricing and the mix of our oil product sales. Segment results are also predicated on the demand for Safety-Kleen Sustainability Solutions' other product and service offerings including collection services for used oil, used oil filters and other automotive fluids. These fluid collections are used as feedstock in our oil re-refining to produce our base and blended

oil products and our recycled automotive related fluid products or are integrated into the Clean Harbors' recycling and disposal network. In operating the business and evaluating performance, management tracks the volumes and relative percentages of base and blended oil sales along with various pricing metrics associated with the commodity driven margin between product pricing and the overall costs associated with the collection of used oil. Levels of activity and ultimate performance associated with this segment can be impacted by economic conditions in the automotive services and manufacturing markets, efficiency of our operations, technology, weather conditions, changing regulations, competition and the management of our related operating costs. Costs incurred in connection with the collection of used oil and other raw materials associated with the segment's oil related products can also be volatile and can be impacted by global events and their relative impact on commodity products and pricing. The overall market price of oil and regulations that change the possible usage of used oil, including the International Maritime Organization's 2020 regulation ("IMO 2020") and other regulations related to the burning of used motor oil as a fuel, impact the premium the segment can charge for used oil collections.

Clean Harbors, Inc. was incorporated in Massachusetts in 1980 and our principal executive offices are located in Norwell, Massachusetts. We maintain a website at the following Internet address: <http://www.cleanharbors.com>. Through a link on this website, we provide free access to 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 soon as reasonably practicable after electronic filing with the SEC. Our guidelines on corporate governance, the charters for our board committees, and our code of ethics for members of the board of directors, our chief executive officer and our other senior officers are available on our website. Should it be necessary, any waivers for such policies will also be posted on our website. In December 2022, we published our second Clean Harbors' Sustainability Report, which is available on the website's Sustainability page. Our website and the information contained therein or connected thereto are not incorporated by reference into this annual report on Form 10-K.

Health and Safety

Health and Safety is a core value at Clean Harbors. Employees at all levels of our Company share this belief and are all committed to ensuring our safety improvement goals are met. Our *Safety Starts with Me: Live It 3-6-5* mindset, is the foundation to our overall safety approach, and is organized around three Safety Philosophies, six Golden Rules of Safety and each employee's five personal reasons why they choose to be safe at work, while operating a vehicle or at home. This overall approach, along with other targeted safety programs, have enabled us to achieve continued improvement across our Company. For the year ended December 31, 2022, our safety metrics of Total Recordable Incident Rate ("TRIR") and Days Away, Restricted Activity and Transfer Rate ("DART"), were 0.73 and 0.41, respectively. TRIR is a measure of accidents and injuries relative to hours worked and the 2022 TRIR and DART levels are the best in the Company's history to date which further highlights the commitment to safety and continuous improvement across the Company.

Moving forward, we remain focused on the health and safety of our teams, our customers and the communities in which we work, live and drive. We will be relentless in our pursuit to improve how we work through effective partnering and collaboration, as well as innovation and technological solutions which deliver on our promise to ourselves, our customers and our neighbors. It starts with us, and we will live it 3-6-5.

Compliance

We regard compliance with applicable regulations as a critical component of our overall operations and we maintain a compliance organization that is independent of the operations of the business to monitor and provide oversight at the highest levels of our organization. We strive to maintain strict professional standards in our compliance activities. Our compliance staff is responsible for the facilities' permitting and regulatory compliance, compliance training, transportation compliance and related record keeping. To ensure the effectiveness of our regulatory compliance program, our facilities operations are monitored by our compliance staff.

Our facilities are also frequently inspected and audited by regulatory agencies, as well as by customers. Although our facilities have been cited on occasion for regulatory violations, we believe that each of our facilities is currently in substantial compliance with applicable permit requirements.

Competitive Strengths

Health and safety is our underlying core value and we believe our long standing commitment to safety results is an important competitive strength of Clean Harbors. We have obtained leading positions across our business lines despite facing robust competition from local, regional and national firms. We believe the following are our core competitive strengths developed over our 40+ years of operations which have and will continue to facilitate our leadership position in the marketplace:

- **Leading Provider of Environmental and Industrial Services** - We are a leading provider of environmental and industrial services which provide sustainable solutions that help our customers protect the environment. We own nine commercial hazardous waste incinerators, making us the largest operator of such facilities in North America. We are also one of the few industrial services companies with footprints in both the U.S. and Canada. Our highly trained workforce safely responds to customer needs across a variety of service lines, including emergency response services. We provide multi-faceted, high-quality services to a broad mix of customers and our vast capabilities, valuable and unique assets, skilled workforce, safety profile and breadth of services as well as our overall size, scale and geographic locations help us attract customers and provide them with environmentally responsible solutions.
- **Integrated Network of Assets** - We believe, in the aggregate, we operate the largest number of commercial hazardous waste incinerators, landfills, treatment facilities and TSDFs in North America. We also operate our significant fleet across a transportation network spanning the U.S. and Canada. Our broad service network enables us to effectively handle a hazardous waste stream from its origin through disposal while internalizing transportation to reduce costs. Our breadth of waste disposal outlets allows us to efficiently internalize a greater volume of waste in our incinerators, landfills and other disposal facilities. These assets are very difficult to duplicate and maintain because, in addition to sizable required capital investments, there are significant permitting, regulatory approvals and ongoing compliance regulations necessary in order for new commercial waste disposal sites to come on-line. In addition, operating expertise gained through years of experience is paramount to safely operating such facilities. As such, these longstanding capabilities exhibited by us create a competitive advantage and provide substantial value for our network.
- **Comprehensive Service Capabilities Complementing our Customers' Sustainability Goals** - Our comprehensive service offerings and product catalog allow us to act as a full service provider of sustainable options for our customers' needs. Not only can our customers rely on Clean Harbors to be a sustainability partner, but they can minimize the number of outside vendors utilized and rely on us as a "one-stop-shop" service provider. Our breadth of service offerings creates incremental revenue growth with no single competitor offering the portfolio of services that we can provide to our customers. Our workforce is trained to fulfill a multitude of customer needs and our complementary lines of business help keep us steady in times of market uncertainty. In addition, our proprietary and integrated technology platform utilized to deliver our services provides a competitive advantage for us and continuous investments provides incremental value to our customers' experience.
- **Used Motor Oil Collection and Re-refining Capabilities** - As the largest re-refiner and recycler of used oil in North America, during 2022, we collected and processed 232 million gallons of used motor oil and returned approximately 196 million gallons of new re-refined oil, lubricants and byproducts back into the marketplace. Our ability to collect used lubricants from customers and have the capability to then re-refine and produce high-quality recycled products sets us apart from many competitors in the space. In 2022, our re-refining process eliminated more than an estimated 1.9 million metric tons of greenhouse gas ("GHG"). The estimated GHG eliminated as a result of our re-refining process in 2022 has the net carbon benefit equivalent to growing approximately 33 million trees for 10 years or taking over 428,000 passenger cars off the road for one year.
- **Effective Cost Management** - We have effective cost management programs in place in order to maintain our overall margins, even in times of higher inflation. Our significant scale allows us to maintain low costs through standardized compliance procedures and significant purchasing power. Leveraging our investment in technology and our ability to efficiently utilize logistics and transportation, we can economically direct waste streams to the most efficient facility. We also use internal resources to transport and process the substantial majority of all hazardous waste that we manage for our customers. In addition, our Safety-Kleen Sustainability Solutions segment results are significantly impacted by the overall market pricing and product mix associated with base and blended oil products. We manage the pricing on our used oil collection services which allows us to effectively manage the re-refinery spreads inherent in our Safety-Kleen Sustainability Solutions business. Our support functions are also highly leverageable and have resulted in improved operating margins.
- **Large and Diversified Customer Base** - Our customer portfolio ranges from small companies to Fortune 500 companies and include public and private entities that span multiple industries and business types, including some government entities. This diversification opens opportunities for cross-selling our large portfolio of services and limits

our credit exposure to any single customer and potential cyclicality in any one industry. As a percentage of our 2022 revenues, the top ten industries we serviced totaled approximately 80% of revenues and included chemical (17%), general manufacturing (15%), refineries (13%), base and blended oils (8%), automotive (8%), utilities (6%), government (4%), oil and gas (3%), transportation (3%), and retail (3%).

- **Stable and Recurring Revenue Base** - We have long-standing relationships with our large customers, many of whom have worked with our Company for decades, and certain of our operations are embedded in customer facilities, entrenching Clean Harbors in their day-to-day operations. A significant portion of our revenues are derived from previously served customers with recurring needs for our services. In addition, there can be a financial burden that accompanies switching hazardous waste disposal providers due to customers' desire to audit disposal facilities prior to their qualification as approved sites and to limit the number of facilities to which their hazardous waste is shipped in order to reduce potential liability under United States and Canadian environmental laws and regulations. We have been selected as an approved vendor by large and small generators of waste because, in addition to our strong safety performance, we possess comprehensive collection, recycling, treatment, transportation, disposal and hazardous waste tracking capabilities and have the expertise necessary to comply with applicable environmental laws and regulations. Those customers that have selected us as an approved vendor typically continue to use our services on a recurring basis. In our Safety-Kleen Sustainability Solutions segment, oil collections are the feed-stock into our oil product sales. Though our collection services customer base may fluctuate, we consistently collect over 200 million gallons of used motor oil annually.
- **Regulatory Compliance** - We continue to make capital investments in our facilities to ensure that they are in compliance with current federal, state, provincial and local regulations. We have an independent compliance group outfitted to monitor and adhere to these compliance standards. Companies relying on in-house disposal may find the current regulatory requirements to be too capital intensive or complex, and may choose to outsource many of their hazardous waste disposal needs.
- **Proven and Experienced Management Team** - Our executive management team provides extensive depth of knowledge and continuity with years of experience and expertise in the environmental and industrial services industries. Alan S. McKim founded our Company in 1980 and has continuously served as our Chairman of the Board and Chief Executive Officer. Pursuant to an orderly succession process approved by our Board of Directors, effective March 31, 2023, Michael L. Battles, our current EVP and Chief Financial Officer, and Eric W. Gerstenberg, our current Chief Operating Officer, will become our Co-Chief Executive Officers. Messrs. Battles and Gerstenberg have each served in their current roles for more than five years and collectively have over 40 years of experience and expertise in the environmental and industrial industries. Mr. McKim will continue as the Executive Chairman of the Board, while also taking on the duties of Chief Technology Officer. We believe that the separation of the Chairman and CEO roles will strengthen the overall governance of Clean Harbors. Eric Dugas, our current SVP and Chief Accounting Officer will succeed Mr. Battles as our EVP and Chief Financial Officer. Eric has been a key member of the management team since he joined the Company in 2014. Our experienced management team has the depth of knowledge of both the industry and our operations to be able to quickly pivot in times of change and identify and respond to new market demands.

Strategy

Our strategy involves leveraging our core competitive strengths to develop and maintain ongoing relationships with a diversified group of customers having recurring needs for our services and products while continuing to grow our service lines ensuring that we can meet our customers' changing environmental and sustainability needs. Targeted marketing opportunities allow us to expand market awareness of the breadth of our service offerings to current and future customers. We strive to be recognized as the premier supplier of a broad range of value-added environmental services based upon quality, responsiveness, customer service, information technologies, safety and cost effectiveness. Everywhere industry meets the environment, we aim to be a primary resource for our customers.

The principal elements of our business strategy are:

- **Cross-Sell Our Solutions** - The breadth of our service offerings allows us the opportunity to provide various services and products to meet our customers' environmental and sustainability objectives. We look for opportunities to be a one-stop-shop service provider, expanding the range of services we traditionally provide to a customer. Our team is committed to identifying opportunities to cross-sell among and across our segments which we expect will drive additional revenue for our Company.
- **Expand Our Network and Suite of Offerings** - We operate an extensive network of hazardous waste management facilities and oil re-refineries, which provides us with significant operating leverage as volumes increase. We look for

opportunities to expand waste handling capacity or oil processing at these facilities by modifying the terms of the existing permits, improving technology or, in certain instances, significantly expanding our facilities. Through selected permit modifications within our network of facilities, we can expand the range of treatment services offered to our customers without the significant capital investment necessary to acquire or build new waste management facilities. We also look for opportunities to grow through opening new locations in strategic geographies, expanding to new waste streams and being responsive to shifting product and service needs in the marketplace.

- **Pursue Acquisitions and Divestitures** - We have history of strategic acquisitions ranging from small, "tuck-ins" to large scale operations and we continue to actively pursue selective acquisitions we believe can enhance and expand our business. Strategic acquisitions are executed to expand existing services, generate incremental revenues from existing and new customers, obtain greater market share, broaden the markets in which we operate and expand our total waste disposal or oil re-refining capacity. In order to maximize synergies, we rapidly integrate our acquisitions into our existing processes. To complement our acquisition strategy, we regularly review and evaluate our operations to determine whether we should divest certain non-core businesses and reallocate our resources to businesses that we believe better align with the long-term strategic direction of the Company.
- **Execute on Cost, Pricing and Productivity Initiatives** - We continually seek to increase efficiency and reduce costs through enhanced technology, process improvements and strategic expense management. We seek to identify areas in our business where strategic investments in automation, process improvements and employees can serve to increase productivity, efficiency and safety compliance. We continuously focus on the operating leverage of our support functions, including expanding globally to achieve profitability and productivity benefits. We aim to price our services and products competitively, understanding the inherent value of our network of assets and operations and being quick to respond to market and macroeconomic changes. We also understand the value our customers place on our products and services in a global market continuously focusing on sustainability, environmental compliance and safety.
- **Foster Innovation through Technology** - Technology has always been part of our core operations, influencing our strategy from increasing throughput at our facilities to increased automation for enhancing productivity. We aim to utilize advanced technologies in our operations while also integrating technology-based solutions for our customers to use in the management of their generated waste streams and which promote the safety, efficiency and profitability of these operations. With technology, we are able to centrally manage our transportation network, deploying, monitoring and adjusting our transportation fleet as needs change. Technology is enhancing our customer interactions through the use of our Customer Solutions Portal, our e-commerce initiatives and through tools providing customers with real-time data on the services we are providing. We anticipate that as new waste streams arise or grow in prominence, we will develop new technology and/or prove the capabilities of existing technology to respond to these waste disposal needs. We believe that by making technological investments that increase the value of our services delivered to our customers pays off in a variety of ways including growth, retention, profitability and overall customer experience.
- **Capture Large-Scale Opportunities** - With our national footprint and breadth of services, we can quickly and reliably respond to customer needs, including in emergency response situations. We can assist with remediation needs, either planned or unplanned, by providing remediation contractors and project managers with support services including groundwater disposal, roll-off container management and many other related services. We can also provide turnkey offsite transportation and landfill or incineration disposal services for soil and other contaminated materials generated from remediation activities. We monitor for opportunities to quickly respond to the ever changing needs of the marketplace like the recent need for specialized decontamination services or strategic partnerships with customers to provide a dedicated waste disposal outlet for their operations or a one-stop-shop for their oil-related needs.

Business Overview

We operate our business in two segments: Environmental Services and Safety-Kleen Sustainability Solutions. Each segment utilizes our network of specialized facilities and equipment, along with our skilled workforce, to meet the needs of our customers.

Environmental Services

Our Environmental Services business offers an array of services to customers. We collect, transport, treat and dispose of hazardous and non-hazardous waste, including resource recovery, physical treatment, fuel blending, incineration, landfill disposal, wastewater treatment, lab chemical disposal, explosives management and CleanPack[®] services. Our CleanPack[®] services include the collection, identification, categorization, specialized packaging, transportation and disposal of laboratory chemicals and household hazardous waste. We perform a wide range of industrial maintenance and specialty industrial services and utilize specialty equipment and resources to perform services at any chosen location on a planned or emergency response basis. We also collect containerized waste and provide parts washer and vacuum services to small quantity generators of

hazardous waste. All of these services are designed to protect the environment and address environmental related challenges through the use of innovation and the latest technologies. We provide customers with sustainable solutions that seek to recycle waste materials whenever possible.

Technical Services

We provide technical services through a network of service centers from which a fleet of vehicles are dispatched to pick up customers' waste either on a predetermined schedule or on demand, and to deliver the waste to permitted facilities, which are usually Company-owned. Our service centers can also dispatch chemists to a customer location for collection of chemical and laboratory waste for disposal. InSite Service® offerings is a branded on-site/in-plant service delivery program through which we offer a full range of environmental, industrial and waste management services. This signature program is built on safety, quality, efficiency and integrity, and has been offered by Clean Harbors for more than 25 years. By leveraging Clean Harbors' expertise and capabilities, our on-site staff are dedicated to developing the safest, most cost-effective and sustainable solutions to service customers' needs.

As an integral part of our services, we collect industrial waste from customers and transport such waste to and between our facilities for treatment or bulking for shipment to final disposal locations. Customers typically accumulate waste in containers, such as 55-gallon drums, bulk storage tanks or 20-cubic-yard roll-off containers. In providing this service, we utilize a variety of specially designed and constructed tank trucks and semi-trailers as well as third-party transporters and rail.

We recycle, treat and dispose of hazardous and non-hazardous waste. The waste handled includes substances which are classified as "hazardous" because of their corrosive, ignitable, infectious, reactive or toxic properties and other substances subject to federal, state and provincial environmental regulation. We provide final treatment and disposal services designed to manage waste which cannot be otherwise safely and/or economically recycled or reused. The waste that we handle comes in solid, sludge, liquid and gas form.

Incineration is the preferred method for the treatment of organic hazardous waste because it effectively destroys the contaminants at high temperatures. High temperature incineration efficiently eliminates organic waste such as herbicides, halogenated solvents, pesticides and pharmaceutical and refinery waste, regardless of form as gas, liquid, sludge or solid. Federal and state incineration regulations require a destruction and removal efficiency of 99.99% for most organic waste.

As of December 31, 2022, we had nine active incinerators operating in five incinerator facilities that offer a wide range of technological capabilities to customers. In the United States, we operate one fluidized bed thermal oxidation unit for maximum destruction efficiency of hazardous waste with an estimated annual practical capacity of 58,808 tons and three solids and liquids capable incinerator facilities with a combined estimated annual practical capacity of 377,387 tons. We also operate one hazardous waste liquid injection incinerator in Canada with total annual practical capacity of 125,526 tons.

Our incinerator facilities in Kimball, Nebraska; Deer Park, Texas; El Dorado, Arkansas; and Aragonite, Utah, are designed to process liquid organic waste, sludge, solids, soil and debris. Our Deer Park facility has two kilns and a rotary reactor. Our El Dorado facility specializes in the treatment of bulk and containerized hazardous liquids, solids and sludge, and has a hazardous waste incinerator which specializes in high-temperature incineration of regulated waste such as industrial and laboratory chemicals, manufacturing byproducts, fertilizers and other solid and liquid materials that would otherwise be hazardous to the environment and public health if not properly managed. Our facilities in Kimball and Deer Park also have on-site landfills for the disposal of ash produced as a result of the incineration process. Our Deer Park landfill will reach permitted capacity in early 2023, however, the Company plans to dispose of the ash from this incinerator facility in one of our other landfills going forward.

Our incinerator facility in Lambton, Ontario, is a liquid injection incinerator designed primarily for the destruction of liquid organic waste. Typical waste streams include wastewater with low levels of organics and other higher concentration organic liquid waste not amenable to conventional physical or chemical waste treatment.

Landfills are primarily used for disposal of inorganic waste. In the United States and Canada, we operate seven commercial landfills, six of which are designed and permitted for disposal of hazardous waste and one which is operated for non-hazardous industrial waste disposal. Of our six hazardous waste commercial landfills, four are located in the United States and two are located in Canada. Our non-hazardous landfill is located in the United States. In addition to our seven commercial landfills, we also own and operate two non-commercial landfills that only accept waste from our on-site incinerators, as described above.

As of December 31, 2022, the useful economic lives of our six commercial hazardous waste landfills included approximately 24.8 million cubic yards of remaining capacity. We estimate the useful economic lives of landfills to include permitted airspace and unpermitted airspace that our management believes to be probable of being permitted based on our analysis of various factors. In addition to the capacity included in the useful economic life of these landfills, there are

approximately 20.9 million cubic yards of additional unpermitted airspace capacity included in the footprints of these landfills that may ultimately be permitted, although there can be no assurance that this additional capacity will be permitted. As of December 31, 2022, the useful economic life of our non-hazardous industrial landfill included 3.3 million cubic yards of remaining permitted capacity. This facility is located in the United States and has been issued operating permits under Subtitle D of the Resource Conservation and Recovery Act ("RCRA"). Our non-hazardous landfill facility is permitted to accept commercial industrial waste, including waste from demolition and construction.

Another waste disposal outlet in our network of facilities are our TSDFs that collect, temporarily store, process and/or consolidate compatible waste streams for more efficient processing and transportation to final recycling, treatment or disposal destinations. These facilities hold special, hard to come by permits, such as Part B permits under the RCRA, which allow them to process, transfer and dispose of waste through various technologies including recycling, incineration, landfill and wastewater treatment depending on each location's permitted and constructed capabilities.

We operate recycling systems for the reclamation and reuse of certain waste, particularly solvent-based waste generated by industrial cleaning operations, metal finishing and other manufacturing processes. Resource recovery involves the treatment of waste using various methods, which effectively remove contaminants from the original material to restore its fitness for its intended purpose and to reduce the volume of waste requiring disposal. We also operate a recycling facility that recycles refinery waste and spent catalyst. The recycled oil and catalysts, depending on market conditions, are sold to third parties.

Our wastewater treatment facilities process hazardous and non-hazardous waste through use of physical and chemical treatment methods. Our ten wastewater treatment facilities offer or employ a range of wastewater treatment technologies. These facilities treat a broad range of liquid and semi-liquid waste containing heavy metals, organics and suspended solids.

We also provide total project management services in areas such as chemical packing, on-site waste management, remediation, compliance training and emergency spill response, while leveraging Clean Harbors' network of service centers and environmental capabilities. Our household hazardous waste collection services provide municipalities with a partner for the collection and disposal of household paints, solvents, batteries, fluorescent lamps, pesticides, cleaners and other hazardous materials.

Industrial Services

We perform industrial cleaning and maintenance services and specialty industrial services at refineries, mines, upgraders, chemical plants, pulp and paper mills, manufacturing facilities, power generation facilities and other industrial customers throughout North America.

Our industrial services crews handle services to support ongoing in-plant cleaning and maintenance services on our customers' mission critical equipment and infrastructure. These services include liquid and dry vacuum services, hydro-blasting, dewatering and materials processing, leak detection and repair, tank cleaning, specialty mechanical services, vapor control, water and chemical hauling and steam cleaning. We provide a variety of specialized industrial services including plant outage and turnaround services, specialty cleaning services including chemical cleaning and high and ultra-high pressure water cleaning, production services and upstream energy services. In 2022, we united all U.S.-based industrial services under one brand, HPC Industrial, powered by Clean Harbors, and continued our focus on integrating automation, technology and innovation into our industrial services operations.

Field and Emergency Response Services

Our crews and equipment are dispatched on a planned or emergency basis and perform services such as confined space entry for tank cleaning, site disinfecting, decontamination and disposal, large remediation projects, demolition, spill cleanup on land and water, railcar cleaning, hydro excavation, manhole/vault clean outs, product recovery and transfer, scarifying and media blasting, vacuum services and water treatment services.

We are also a leader in providing response services for environmental emergencies of any scale from man-made disasters such as oil spills and from natural disasters such as hurricanes.

Safety-Kleen Environmental Core Services

Our Safety-Kleen Environmental branches' core service offerings focus on the small quantity waste generators predominately within the automotive, industrial and retail space. We provide containerized waste, parts-washer and vacuum services to a diverse range of customers including automobile repair shops, car and truck dealers, metal fabricators, machine manufacturers, fleet maintenance shops and other automotive, industrial and retail customers. We provide pickup and transportation of hazardous and non-hazardous containerized waste for recycling or disposal, primarily through the Clean Harbors' network of recycling, treatment and disposal facilities. As the largest provider of parts cleaning services in North America, we offer a complete line of specially designed parts washers to customer locations and then deliver recurring service

that includes machine cleaning and maintenance and disposal and replenishment of clean solvent or aqueous fluids. Our vacuum services remove solids, residual oily water and sludge and other fluids from customers' oil/water separators, sumps and collection tanks. We also remove and collect waste fluids found at large and small industrial locations, including metal fabricators, auto maintenance providers and general manufacturers.

Safety-Kleen Sustainability Solutions

Our Safety-Kleen Sustainability Solutions business offerings span the life-cycle of lubricants and other sustainable automotive products. Our teams collect used oil which serves as feedstock for our oil re-refineries. In 2022, we collected 232 million gallons of used oil. We process the used oil collected through our eight re-refineries located in East Chicago, Indiana; Newark, California; Wichita, Kansas; Tacoma, Washington; Fallon, Nevada; Rollinsford, New Hampshire; Kingsland, Georgia; and Breslau, Ontario.

At our facilities, we manufacture, formulate, package, distribute and market high-quality lubricants that provide our customers with a sustainable solution to their oil demands. The used oil collected is processed or re-refined to convert into a variety of products, mostly base and blended lubricating oils, and much smaller quantities of asphalt-like material, glycols and fuels. One of the primary goals of our Safety-Kleen Sustainability Solutions business is to produce and sell high-quality eco-friendly base and blended oils. In 2022, we launched our KLEEN+ brand of Group II+ base oils. Our Performance Plus[®] and EcoPower[®] family of blended products are sold to on- and off-road corporate fleets, government entities, automotive service shops and industrial plants, which are serviced through our internal distribution network. We also sell unbranded blended oils to distributors that resell them under their private label brands. The used oil can also be processed into recycled fuel oil, or "RFO," which is then sold to customers such as asphalt plants, industrial plants, pulp and paper companies. The used oil is also processed into vacuum gas oil which can be further re-refined into lubricant base oils or sold directly into the marine diesel fuel market.

With 232 million gallons of used oil collected and processed in 2022, we were able to return approximately 196 million gallons of new re-refined oil, lubricants and byproducts back into the marketplace helping our customers meet the growing demand for the use of sustainable products in their operations.

We sell the base oil that we do not blend and sell ourselves to independent blenders/packagegers that use it to blend their own branded or private label oils

The Safety-Kleen Sustainability Solutions operations also collect and either recycle or dispose of related automotive products including antifreeze and oil filters. We sell automotive and industrial products including antifreeze recycled through our collections, windshield washer fluid, degreasers, glass and floor cleaners, hand cleaners, absorbents, mats and spill kits.

Seasonality

Our operations may be affected by seasonal fluctuations primarily due to weather and budgetary cycles influencing the timing of customers' spending for products and services. Typically during the first and fourth quarters of each year there is less demand for our oil collection, recycling services and environmental services due to lower customer activity levels resulting from the cold weather, particularly in Canada and the northern and midwestern regions of the United States. As a result, reduced volumes of waste are received at our facilities, higher operating costs are realized due to sub-freezing weather and high levels of snowfall and lower volumes of used oil are generated for our collection. Customer factory closings for year-end holidays can also contribute to reduced waste volumes in our network of facilities during this time.

Geographical Information

For the year ended December 31, 2022, we generated \$4,493.5 million or 87.0% of our direct revenues in the United States and \$673.1 million or 13.0% of our direct revenues in Canada. For the year ended December 31, 2021, we generated \$3,271.5 million or 86.0% of our direct revenues in the United States and \$534.1 million or 14.0% of our direct revenues in Canada. For additional information about the geographical areas from which our revenues are derived and in which our assets are located, see Note 3, "Revenues," and Note 20, "Segment Reporting," respectively, to our consolidated financial statements included in Item 8 of this report.

Acquisitions and Divestitures

As noted above, we execute upon acquisitions as an element of our business strategy to create opportunities for profitable growth. We also monitor our operations for opportunities to reallocate resources through the divestiture of non-core businesses.

In 2022, we acquired two privately-owned businesses for a collective purchase price of \$91.3 million. The acquisitions expanded the Safety-Kleen Sustainability Solutions segment's waste oil collection capabilities and re-refining business throughout the southern United States. Additionally, we sold a line of business from our non-core operations for a purchase

price of \$18.8 million. The divested line of business was previously included within the Environmental Sales and Service reporting unit of the Environmental Services segment.

In 2021, we acquired HydroChemPSC for a purchase price of \$1.23 billion. The acquisition expanded the Company's Environmental Services segment. We also acquired a privately-owned business for a purchase price of \$22.8 million. The acquisition expanded the Safety-Kleen Sustainability Solutions segment's network within the south central United States.

For additional information relating to our acquisition activities during 2022, 2021 and 2020, see Note 4, "Business Combinations," to our consolidated financial statements included in Item 8 of this report.

Protecting the Environment and Sustainability at Clean Harbors

Balancing environmental, economic and social concerns is foundational to our framework for success and is expected by our employees, customers and other stakeholders. Sustainability is not only about doing less to harm the earth or consuming fewer essential resources, it is also about doing more good and partnering with our customers to minimize their environmental impacts. Our core business is to provide industry, government and the public a wide range of sustainable solutions that protect and restore North America's natural environment.

Our commitment to sustainability includes a focus on continuously improving our efforts around sustainability. We communicate our sustainability programs and progress across various channels. In December 2022, we issued our second Sustainability Report aligned to the Sustainability Accounting Standards Board framework. A copy of this report can be found on our website. We also have requirements for periodic regulatory reporting to the Environmental Protection Agency ("EPA") and other agencies that are available to the public and we continue to monitor for emerging legislation which may influence sustainability-related disclosures. We voluntarily provide data to various external sustainability reporting and assessment organizations, many of which provide subscribers and the public with their rankings or scorecards of companies based on a combination of public and private information. We utilize these formal reporting platforms to inform customers and other stakeholders of our sustainability efforts and we have been pleased to see our efforts to improve the reporting of our sustainable business practices reflected in improved scores from various rating organizations. The improvement in our scores/ranking has been significant over the past few years. We maintain a bronze rating from EcoVadis, a rating agency specialized in assessing environmental performance and corporate social responsibility. We have shown improvement in each of the Environmental, Social and Governance risk assessments that the Institutional Shareholder Services Inc. ("ISS") publishes as well as continued improvement with the S&P Global ratings system. We continue to disclose as a voluntary participant to the Carbon Disclosure Project, MSCI Environmental Social and Governance, ("ESG") Ratings, Morning Star Sustainability and participate in numerous other corporate as well as customer-specific assessments and disclosures. While we are proud of the improvements in third-party scoring and rankings, the focus of our program is on tangible improvements that positively impact the environment, our community and our employees. Our overall sustainability program expands our commitment beyond our services and products to include our operations, employees and community. The program focuses on the following key elements:

Health and Safety

As noted above, Health and Safety is our #1 core value and as such is foundational to our sustainability program. Safety is not just the hallmark of our Company but is also at the heart of what we provide to customers. Our programs and procedures focus on delivering services with unparalleled safety to our employees, our customers, local communities and other key stakeholders. In 2022, we achieved TRIR of 0.73 and DART of 0.41, the best levels in Company history and achieving our 2030 goal of TRIR less than 1.0 eight years ahead of schedule. Seven of our U.S. sites have been recognized by the U.S. Occupational Safety & Health Administration's Voluntary Protection Program ("VPP") for their effective safety management systems and low injury and illness rates. To put this accomplishment in context, less than 0.1% of the eight million U.S. workplaces have earned this elite VPP recognition.

Operations/ Customer Solutions

Technologies and operational improvements have allowed Clean Harbors to develop initiatives that focus on minimizing the Company's and our customers' impact on the environment. As a leading provider of environmental and industrial services throughout North America, we help our customers prevent the release of chemicals and hazardous waste streams into the environment. We also recover and decontaminate pollutants that have been released. This includes the safe destruction or disposal of hazardous materials in a manner that ensures these materials are no longer a danger to the environment. As an example, to provide an efficient and safe alternative for hazardous waste disposal, Clean Harbors developed and built an incinerator at our El Dorado facility which uses world-class air emissions control technology that meets or exceeds the most stringent emissions standards under the U.S. Clean Air Act. Our new hazardous waste incinerator that we are building in Kimball, Nebraska is being built to these high standards as well. Additionally, during 2022, we concluded a comprehensive third-party study demonstrating that the Company's commercial incinerators can safely and thoroughly destroy per- and poly-fluorinated alkyl substances ("PFAS") in multiple forms. Specifically the study demonstrated that the use of high-temperature

combustion destroyed greater than 99.9999% of PFAS compounds, a level that meets the strict chemical destruction standards for many of the most dangerous and difficult to destroy hazardous wastes. As the prevalence of PFAS and the necessity to mitigate future harm from these "forever chemicals" becomes more widely understood and likely demand for services to properly handle and dispose of these materials increases, we believe this capability will become a differentiating factor for us.

When providing environmental services, we are committed to the recycling, reuse and reclamation of handled waste streams whenever practical using a variety of methods more fully explained in the sections describing our general operations. Many of our branded services exemplify our commitment to sustainability and providing environmental solutions to the marketplace. Where possible, liquids such as solvents, chemicals and used oil are continuously recycled to industry standards and made into useful and sustainable products. Tolling programs provide a closed-loop process in which the customer's spent solvents are recycled to precise specifications and returned directly to the customer.

Our Safety-Kleen OilPlus[®] Program is designed to help companies manage their oil related disposal and consumption needs in a more sustainable way. Environmental regulations prohibit the disposal of oil in sewers or landfills as improper disposal can lead to widespread environmental problems. To avoid the improper disposal of oil, we deploy our fleet of trucks, tankers, rail-cars and barges to collect used oil. In 2022, we gathered more than 232 million gallons of used oil in North America. This used oil is feedstock into our re-refining process which extends the life of crude oil resources, reduces the likelihood of improper oil disposal and decreases overall energy usage as, per the Department of Energy, it can take less energy to recycle used oil than to create new lubricating oil from virgin crude oil.

Our state of the art processes enable us to fully realize oil's remarkable capacity to be recycled, re-refined and reused. Our plants have re-refined more than 4.4 billion gallons of used oil allowing such oils to have a new life as high-quality recycled lubricants and avoided an estimated 33.4 million metric tons of greenhouse gases. In 2022, in conjunction with World Environment Day, we unveiled KLEEN+, a new family of re-refined base oil products designed to help companies manage their oil needs in a more sustainable way with less reliance on virgin crude oil production. KLEEN+ base oil also earned a spot on the 2022 list of top sustainable products from Sustainability Environmental Achievement and Leadership Awards. As our customers respond to the consumer and investor focus on environmental and socially responsible practices, including less reliance on foreign oil products, we expect that the use of KLEEN+ re-refined oil products will contribute to our customers' ESG efforts.

We continue to seek to improve efficiency and sustainability within our operations through continuous improvements and well-defined strategic initiatives that show the highest positive impact on the environment, the communities and the economy in which we work and live. Our assets represent one of our largest opportunities to apply environmentally sustainable business practices. Our Asset Refurbishment Program is a comprehensive effort to rebuild key vehicles to "like new" quality while reusing or recycling as much of the material as possible. Our goal is to refurbish over 200 highly technical vehicles used in our operations, like vacuum trucks, industrial air movers and waste oil trucks. We also have a field repair/refurbishment program for our parts washers. In 2022, we repaired or refurbished over 7,000 parts washers in the field, saving transportation to our refurbishment facility. Parts washers that required repairs or refurbishment beyond what could be accomplished in the field were returned to our refurbishment facility. We were able to recondition the majority of these machines and salvaged the components from any machines that were beyond reconditioning. These operations at our facility refurbished over 9,000 machines in 2022 and avoided disposal of over 400 tons of metals and plastics.

Environmental Commitment

One of the Company's sustainability goals is to contribute to a cleaner environment by maximizing energy and water efficiency and conservation across our organization. Energy usage at our facilities is the focus of our Facility Energy Conservation program, which provides ongoing oversight and recommendations to our facilities to help support their electricity management efforts. We continue to evaluate and incorporate solar energy as a viable option for our facilities where possible and have built solar arrays at select sites for their ongoing energy needs. We also continuously seek to better understand the contribution of renewable energies to our collective energy consumption. We estimate that about 23% of our U.S. electricity consumption is generated by renewable energy sources, including hydroelectric, biomass, wind, solar and geothermal energy.

Clean Harbors makes fleet energy management a key focus, beginning with ongoing routing reviews by our logistics team to reduce total miles driven. We also evaluate options for reducing fuel costs including routine use of rail and barge transportation, implementation of alternative fuel vehicles and using our Kleen+ and Performance Plus[®] re-refined engine oils throughout our fleet.

All of these items above exemplify how we, as a company, are working to minimize our footprint on the environment; however, our environmental commitment extends beyond our internal focus to how we can help other companies minimize their environmental footprint and achieve their sustainability goals. The core of our operations is to provide our customers with

environmentally responsible solutions, whether they be our commitment to environmentally conscious services and waste disposal or our re-refined oil offerings.

Supply Chain

We believe in holding ourselves to high standards for sustainability and human rights practices and have taken efforts to drive sustainable practices through rigorous supply chain oversight. We monitor for practices that are not in line with our corporate vision and work to drive change. Our Vendor Code of Business Conduct and Ethics establishes the minimum standards that must be met by any vendor that does business with Clean Harbors regarding treatment of workers, supply chain practices, workplace safety, environmental impact and ethical business practices.

Community Engagement

Clean Harbors believes that by staying engaged with our customers, communities and other stakeholders, we can contribute to the long-term health of the environment, society and the economy. We are dedicated to being a good neighbor in the communities in which we work. We develop partnerships with key environmental programs to build awareness, while fostering more sustainable business practices. One of our most highly visible public programs for various government and community entities is known as our Household Hazardous Waste service line. Communities trust us to collect paints, solvents, batteries, fluorescent lamps, pesticides, cleaners and other hazardous materials that otherwise might be improperly disposed of or become dangerous to the communities where they are stored.

Our commitment and our business go hand in hand as we work to provide services and products that complement our customers' sustainability plans and hold ourselves and others accountable to environmental, social and corporate governance standards and best practices.

Competitive Markets

Due to the variety of services and products offered, the Company faces significant competition from companies in various industries across all lines of business. The Company's breadth of service offerings however has resulted in no one competitor directly competing with our full suite of offerings. Sources of competition vary by locality and by type of service rendered, with competition coming from national and regional industrial and automotive waste services companies and hundreds of privately-owned firms. Veolia North America, Harsco Corporation, Republic Services, Waste Management, Stericycle, Inc. and Heritage-Crystal Clean are the principal national firms with which we compete. Each of these competitors is able to provide one or more of the environmental services we offer.

Under federal and state environmental laws in the United States, generators of hazardous waste remain liable and responsible for the proper disposal of such waste. Although generators may hire various companies that have the proper permits and licenses, because of the generators' potential liability, they are very interested in the reputation and financial strength of the companies they use for the management of their hazardous waste. We believe that our technical proficiency, safety record, customer service oriented culture and overall reputation are important considerations to our customers in selecting and continuing to utilize our services. We also believe that the depth of our recycling, treatment and disposal capabilities, and our ability to collect and transport waste materials efficiently are additional significant differentiating factors that create an advantage for us in the market for treatment and disposal services.

Competition within our Environmental Services segment varies by locality and type of service rendered. For our landfill and waste services, competitors include several major national and regional environmental services firms, as well as numerous smaller local firms. We believe the availability of skilled, technical and professional personnel, quality of performance, diversity of services, safety record, quality of assets and use of current technologies, as well as price, are the key competitive factors in this service industry. For our industrial, field, emergency response and Safety-Kleen branches' core services, competitors vary by locality and by type of service rendered, with competition coming from national and regional service providers and hundreds of privately-owned firms that offer similar services. Heritage-Crystal Clean in the United States, and CEDA International Corporation and Secure Energy Services in Canada, are the principal national firms with which we compete for this work. There are also several regional and local firms with which we compete. Each of these competitors is able to provide one or more of the services offered by our industrial, field, emergency response or Safety-Kleen branches' operations. We believe the availability of specialized equipment and latest technologies, skilled, technical, and professional personnel, quality of performance, diversity of services, safety record and price are the key competitive factors in this industry.

For our Safety-Kleen Sustainability Solutions segment, competitors vary by locality and by type of services rendered, with competition coming from Heritage-Crystal Clean, along with many regional and local firms. We believe that geographic coverage, pricing and breadth of services and products, including our ability to produce high quality sustainable lubricants from the used motor oil we collected, are key competitive factors in this industry. With our Safety-Kleen Oil Plus[®] closed loop offering, we are competing in certain markets with other North American lubricant distributors. With our KLEEN+ base oil

produced at our re-refineries, we compete against base oil produced at traditional oil refineries such as Motiva Enterprises LLC, Chevron Corporation and Phillips 66.

The principal methods of competition for all of our services and products are quality, price, service reliability or products sold and technical proficiency. We believe that we offer a more comprehensive range of services and products than our competitors in major portions of the United States and Canada.

Human Capital

As of December 31, 2022, we employed 19,775 active full-time employees, of which approximately 1,630 in the United States and 590 in Canada were represented by labor unions. In response to the needs of our business, we also employ temporary and part-time employees. As of December 31, 2022, the total of all active employees, inclusive of the temporary and part time workforce, was approximately 20,260.

Our human capital objectives focus on the health and safety of our employees, employee development and training, fair and competitive compensation and benefits and business and hiring practices that support diversity and inclusion. Key metrics that management uses to measure these objectives include TRIR, voluntary turnover rates and time to job ready, all of which are monitored at all levels of the organization. We believe that our relationship with our employees is positive and we engage with our employees through periodic employee engagement surveys, and other mechanisms, to continue the development of these relationships. As part of our commitment to employee safety and quality customer service, we have an extensive compliance program and trained environmental, health and safety staff. We continually strive to invest in our employees through training programs, including training specifically aimed at workplace safety and cyber-security. We provide the training and licensing necessary to maintain a skilled and experienced workforce. We also provide competitive compensation and benefit programs, including matching employee contributions towards retirement savings plans and covering annual healthcare cost increases.

We are committed to fundamental human rights principles and we have a comprehensive Human Rights Policy to formalize the standards to which we hold ourselves accountable. Respect is essential to our interactions with employees, customers, shareholders and the public at large. In recognition of our Human Rights Policy and our intrinsic values of diversity and inclusion, we promote equal opportunity and respect in our workplaces. Our seven employee resource groups were developed to encourage belonging, inclusion and collaboration among our employees at Clean Harbors.

Resources

We have invested significantly in the development of proprietary technologies and also to establish and maintain an extensive knowledge of leading technologies. We incorporate these technologies into the services we offer and provide to our customers to enhance the service and value received by our customers, reduce the time and/or increase the safety of such services. For example, our internally developed proprietary software system, Waste Information Network, electronically tracks each step taken by any particular load of waste in our business, allowing customers assurance and transparency into their waste disposal.

As of December 31, 2022, we held a total of 49 U.S. and 15 foreign issued or granted patents (which will expire between 2023 and 2038), six foreign and four U.S. pending patent applications and 94 U.S. and 63 foreign trademark registrations. We also license software and other intellectual property from various third-parties. We enter into confidentiality agreements with certain of our employees, consultants and corporate partners, and control access to software documentation and other proprietary information. We believe that we hold adequate rights to all intellectual property used in our business and that we do not infringe upon any intellectual property rights held by other parties.

We must obtain and maintain permits and licenses for transportation and industrial needs throughout our business. We are required to obtain federal, state, provincial and local permits or approvals for each of our hazardous waste facilities. These permits and licenses are material to our business operations. Such permits are difficult to obtain and, in many instances, extensive studies, tests and public hearings are required before the approvals can be issued. Our compliance programs are paramount in maintaining these permits and licenses as well.

Management of Risks

We adhere to a program of risk management policies and practices designed to reduce potential liability, as well as to manage customers' ongoing environmental exposures. This program includes installation of risk management systems at our facilities, such as fire suppression, employee training, environmental consciousness, auditing and policy decisions restricting the types of waste handled. We evaluate all revenue opportunities and decline those that we believe involve unacceptable risks.

We dispose of waste at our incinerator, wastewater treatment and landfill facilities, or at facilities owned and operated by other firms that we have audited and approved. We apply established technologies to treatment, storage and recovery of

hazardous waste. We believe our operations are conducted in a safe and prudent manner and in substantial compliance with applicable laws and regulations.

Insurance and Financial Assurance

Our insurance programs cover the potential risks associated with our multifaceted operations from two primary exposures: direct physical damage and third-party liability. We maintain a casualty insurance program which provides coverage for vehicles, employer's liability and commercial general liability in the aggregate amount of \$105.0 million, \$102.0 million and \$102.0 million, respectively, per year, subject to retentions of \$1.0 million for employers' liability in the United States, \$2.0 million per occurrence for auto and commercial general liability in the United States and \$2.0 million (CAD) per occurrence for employer's liability, auto and commercial general liability in Canada. We also have workers' compensation insurance with limits established by state statutes.

We have pollution liability insurance policies covering potential risks in three areas: as a contractor performing services at customer sites, as a transporter of waste and as a processor of waste at our facilities. The contractor's pollution liability insurance has limits of \$30.0 million per occurrence and \$30.0 million in the aggregate, covering offsite remedial activities and associated liabilities.

For sudden and accidental in-transit pollution liability, our auto liability policy provides the primary \$5.0 million per occurrence of transportation pollution insurance. Our pollution liability policies provide an additional \$85.0 million per occurrence and \$85.0 million in the aggregate for a total of \$90.0 million per occurrence and \$95.0 million in the aggregate, respectively. A \$2.0 million deductible per occurrence applies to this coverage in the United States and Canada.

Federal and state regulations require liability insurance coverage for all facilities that treat, store or dispose of hazardous waste. RCRA, the Toxic Substances Control Act and comparable state hazardous waste regulations typically require hazardous waste handling facilities to maintain pollution liability insurance in the amount of \$1.0 million per occurrence and \$2.0 million in the aggregate for sudden occurrences and \$3.0 million per occurrence and \$6.0 million in the aggregate for non-sudden occurrences. Our liability insurance coverage meets or exceeds all federal and state regulations.

We maintain property insurance on our physical locations valued in excess of \$10.0 million covering direct physical damage. We consolidated the insurance on these locations and this policy has a \$10.0 million aggregate deductible. We are self-insured for locations not specifically listed on this policy.

Our international operations are insured under locally placed insurance policies that are compulsory in a specific country. In addition, we have a global foreign liability policy that will provide excess and difference in condition coverage in international countries.

It is our practice to retain a significant portion of certain expected losses related primarily to employee benefits, workers' compensation, commercial general and vehicle liability. Provisions for losses expected under these programs are recorded based upon our estimates of the actuarially determined value of the aggregate liability for claims.

Operators of hazardous waste handling and certain other permitted facilities are required by federal, state, provincial and local regulations to provide financial assurance for closure and post-closure care of those facilities should the facilities cease operation. Closure would include the cost of removing the waste stored at a facility which ceased operating and sending the material to another facility for disposal and the cost of performing certain procedures for decontamination of the facility. We have obtained all of the required financial assurance for our facilities through a combination of surety bonds and insurance from qualified insurance companies.

Government Regulations

While our business has benefited substantially from increased government regulation of hazardous waste transportation, storage and disposal, the environmental services industry itself is the subject of extensive and evolving regulation by federal, state, provincial and local authorities. As noted above, we are required to obtain federal, state, provincial and local permits or approvals for each of our hazardous waste facilities. We have acquired all material operating permits and approvals now required for the current operation of our business and have applied for, or are in the process of applying for, all permits and approvals needed in connection with planned expansion or modifications of our operations.

We are constantly monitoring the regulatory environment which is often influenced by changes in leadership at the federal, state, provincial and local levels. We make a continuing effort to anticipate regulatory, political and legal developments that might affect operations, but are not always able to do so. We cannot predict the extent to which any legislation or regulation that may be enacted or enforced in the future may affect our operations.

United States Hazardous Waste Regulation

Federal Regulations. The most significant federal environmental laws affecting us are the RCRA, the Comprehensive Environmental Response, Compensation and Liability Act, also known as the "Superfund Act," the Clean Air Act, the Clean Water Act and the Toxic Substances Control Act ("TSCA").

RCRA. RCRA is the principal federal statute governing hazardous waste generation, treatment, transportation, storage and disposal. Pursuant to RCRA, the EPA has established a comprehensive "cradle-to-grave" system for the management of a wide range of materials identified as hazardous waste. States that have adopted hazardous waste management programs with standards at least as stringent as those promulgated by the EPA have been delegated authority by the EPA to administer their facility permitting programs in lieu of the EPA's program.

Every facility that treats, stores or disposes of hazardous waste must obtain a RCRA permit from the EPA or an authorized state agency unless a specific exemption exists, and must comply with certain operating requirements ("Part B" permitting process). RCRA also requires that Part B permits contain provisions for required on-site study and cleanup activities, known as "corrective action," including detailed compliance schedules and provisions for assurance of financial responsibility. See Note 10, "Closure and Post-Closure Liabilities," and Note 11, "Remedial Liabilities," to our consolidated financial statements included in Item 8 of this report for a discussion of our environmental liabilities. See "Insurance and Financial Assurance" above for a discussion of our financial assurance requirements.

The Superfund Act. The Superfund Act is the primary federal statute regulating the cleanup of inactive hazardous substance sites and imposing liability for cleanup on the responsible parties. It provides for immediate EPA coordinated response and removal actions for hazardous substances released into the environment. It also authorizes the government to respond to the release or threatened release of hazardous substances or to order responsible persons to perform any necessary cleanup. The statute provides for strict and, in certain cases, joint and several liability to the parties involved in the generation, transportation and disposal of hazardous substances for the cost of these responses and for the cost of damages to natural resources. Under the statute, we may be deemed liable as a generator or transporter of a hazardous substance which is released into the environment, or as the owner or operator of a facility from which there is a release of a hazardous substance into the environment. See Note 18, "Commitments and Contingencies," to our consolidated financial statements included in Item 8 of this report for a description of the principal such proceedings in which we are now involved.

The Clean Air Act. The Clean Air Act was passed by Congress to control the emissions of pollutants into the air and requires permits to be obtained for certain sources of hazardous air pollutants, such as vinyl chloride or air criteria pollutants, such as carbon monoxide. In 1990, Congress amended the Clean Air Act to require further reductions of air pollutants with specific targets for non-attainment areas in order to meet certain ambient air quality standards. These amendments also require the EPA to promulgate regulations which (i) control emissions of 188 hazardous air pollutants; (ii) create uniform operating permits for major industrial facilities similar to RCRA operating permits; (iii) mandate the phase-out of ozone depleting chemicals; and (iv) provide for enhanced enforcement.

The Clean Water Act. This legislation prohibits discharge of pollutants into the waters of the United States without government authorization and regulates the discharge of pollutants into surface waters and sewers from a variety of sources, including disposal sites and treatment facilities. The EPA has promulgated "pretreatment" regulations under the Clean Water Act, which establish pretreatment standards for introduction of pollutants into publicly owned treatment works. In the course of the treatment process, our wastewater treatment facilities generate wastewater, which we discharge to publicly owned treatment works pursuant to permits issued by the appropriate government authorities. We are required to obtain discharge permits and conduct sampling and monitoring programs.

TSCA. We operate a network of collection, treatment and field services (remediation) facilities throughout North America whose activities are regulated under provisions of TSCA. TSCA established a national program for the management of substances classified as PCBs which include waste PCBs as well as RCRA waste contaminated with PCBs. The rules set minimum design and operating requirements for storage, treatment and disposal of PCB waste. Since their initial publication, the rules have been modified to enhance the management standards for TSCA-regulated operations including the decommissioning of PCB transformers and articles, detoxification of transformer oils, incineration of PCB liquids and solids, landfill disposal of PCB solids, and remediation of PCB contamination at customer sites.

Other Regulation Impacting the US Operations

Federal Regulations. In addition to regulations specifically directed at our transportation, storage and disposal facilities, there are a number of regulations that may "pass-through" to the facilities based on the acceptance of regulated waste from affected customer facilities. Each facility that accepts affected waste must comply with the regulations for that waste, facility or industry. Examples of this type of regulation are National Emission Standards for Benzene Waste Operations and National

Emissions Standards for Pharmaceuticals Production. Each of our facilities addresses these regulations on a case-by-case basis determined by its requirement to comply with the pass-through regulations.

In our transportation operations, we are regulated by the U.S. Department of Transportation, the Federal Railroad Administration, the Federal Aviation Administration and the U.S. Coast Guard, as well as by the regulatory agencies of each state in which we operate or through which our vehicles pass.

Health and safety standards under the Occupational Safety and Health Act ("OSHA") are also applicable to all of our operations.

State and Local Regulations. Pursuant to the EPA's authorization of RCRA equivalent state run programs, a number of U.S. states have regulatory programs governing the operations and permitting of hazardous waste facilities. Accordingly, the hazardous waste treatment, storage and disposal activities of a number of our facilities are regulated by the relevant state agencies in addition to federal EPA regulation.

Some states classify as hazardous certain wastes that are not regulated under RCRA. For example, Massachusetts and California consider used oil as "hazardous waste" while RCRA does not. Accordingly, we must comply with state requirements for handling state regulated waste, and, when necessary, obtain state licenses for treating, storing and disposing of such waste at our facilities.

Some states regulate other aspects of our operations, as well. For example, Delaware and New York have set strict regulations regarding the level of volatile organic compounds in parts washer solvents. We endeavor to be and remain in compliance with all applicable state regulations.

Our facilities are also regulated pursuant to state statutes, including those addressing clean water and clean air. Local sewer discharge and flammable storage requirements are applicable to certain of our facilities. Our facilities are also subject to local siting, zoning and land use restrictions. We believe that each of our facilities is in substantial compliance with the applicable requirements of federal and state licenses which we have obtained. Once issued, such licenses have maximum fixed terms of a given number of years, which differ from state to state, ranging from three to ten years. The issuing state agency may review or modify a license at any time during its term. We anticipate that once a license is issued with respect to a facility, the license will be renewed at the end of its term if the facility's operations are in compliance with applicable requirements. However, there can be no assurance that regulations governing future licensing will remain static, or that we will be able to comply with such requirements.

Regulations by the International Maritime Organization ("IMO") primarily impact shipping businesses. Under the new global cap, ships that traverse the oceans are required to use marine fuels with a sulphur content of no more than 0.50% sulphur, versus the previous cap of 3.50%, in an effort to reduce the amount of sulphur oxide and decrease pollution and greenhouse gas emissions from the global shipping fleet. The shipping industry is the last major transportation sector to utilize fuel with high levels of sulfur, which is the reason the IMO pushed the industry to more closely align with other transport sectors for pollution reduction. This regulation indirectly impacts our Safety-Kleen Sustainability Solutions segment as it has reduced the end market of used oil.

Canadian Hazardous Waste Regulation

In Canada, the provinces retain control over environmental issues within their boundaries and thus have the primary responsibility for regulating management of hazardous waste. The federal government regulates issues of national scope or where activities cross provincial boundaries.

Provincial Regulations. Most of Canada's industrial development and the major part of its population are located in four provinces: Ontario, Quebec, Alberta and British Columbia, each of which have detailed environmental regulations. We operate major waste management facilities in each of these provinces, as well as waste transfer facilities in Nova Scotia and Manitoba.

The main provincial acts dealing with hazardous waste management are:

- Ontario—Environmental Protection Act;
- Quebec—Environmental Quality Act;
- Alberta—Environmental Protection and Enhancement Act; and
- British Columbia—Waste Management Act.

These pieces of legislation were developed by the provinces independently and, among other things, generally control the generation, characterization, transport, treatment and disposal of hazardous waste. Regulations developed by the provinces

under the relevant legislation are also developed independently, but are often quite similar in effect and sometimes in application. For example, there is some uniformity in manifest document design and utilization.

Provincial legislation also provides for the establishment of waste management facilities. In this case, the facilities are also controlled by provincial statutes and regulations governing emissions to air, groundwater and surface water and prescribing design criteria and operational guidelines.

Waste transporters require a permit to operate under provincial waste management regulations and are subject to the requirements of the Federal Transportation of Dangerous Goods Act, as discussed below. They are required to report the quantities and disposition of materials shipped.

Canadian Federal Regulations. The Canadian federal government has authority for those matters which are national in scope and in impact and for Canada's relations with other nations. The main federal laws governing hazardous waste management are:

- Canadian Environmental Protection Act (1999) ("CEPA 99"), and
- Transportation of Dangerous Goods Act

Environment Canada is the federal agency with responsibility for environmental matters and the main legislative instrument is the CEPA 99. This act charges Environment Canada and Health Canada, the Federal agency responsible for the health of individuals, with protection of human health and the environment and seeks to control the production, importation and use of substances in Canada and to control their impact on the environment.

The Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations under CEPA 99 control the export and import of hazardous waste and hazardous recyclable materials. By reference, these regulations incorporate the Transportation of Dangerous Goods Act and Regulations, which address identification, packaging, marking and documentation of hazardous materials during transport. CEPA 99 requires that anyone proposing to export or import hazardous waste or hazardous recyclable materials or to transport them through Canada, must notify the Minister of the Environment and obtain a permit to do so. Section 9 of CEPA 99 allows the federal government to enter into administrative agreements with the provinces and territories for the development and improvement of environmental standards. These agreements represent cooperation towards a common goal rather than a delegation of authority under CEPA 99. To facilitate the development of provincial and territorial agreements, the federal, provincial and territorial governments participate in the Canadian Council of Ministers of the Environment ("CCME"). The CCME comprises the 14 environment ministers from the federal, provincial and territorial governments, who normally meet at least once a year to discuss national environmental priorities and to determine work to be carried out under the auspices of the CCME.

Canadian Local and Municipal Regulations. Local and municipal regulations seldom reference direct control of hazardous waste management activities. Municipal regulations and by-laws, however, control such issues as land use designation, access to municipal services and use of emergency services, all of which can have a significant impact on facility operation.

Compliance with Environmental Regulations

The environmental regulations discussed above require that we remediate contaminated sites, operate our facilities in accordance with enacted regulations, obtain required financial assurance for closure and post-closure care of our facilities should such facilities cease operations and make capital investments in order to keep our facilities in compliance with environmental regulations.

As further discussed in Note 10, "Closure and Post-Closure Liabilities," and Note 11, "Remedial Liabilities," to our consolidated financial statements included in Item 8 of this report, as of December 31, 2022 we have recognized environmental liabilities of \$235.1 million. For the years ended December 31, 2022, 2021 and 2020, we spent \$13.9 million, \$15.5 million and \$12.4 million, respectively, to address environmental liabilities.

As discussed more fully above under the heading "Insurance and Financial Assurance," we are required to provide financial assurance with respect to certain statutorily required closure, post-closure and corrective action obligations at our facilities. We have placed the required financial assurance primarily through qualified insurance companies.

As described in Note 18, "Commitments and Contingencies," to our consolidated financial statements included in Item 8 of this report, we are involved in legal proceedings arising under environmental laws and regulations. Alleged failure to comply with laws and regulations may lead to the imposition of fines or the denial, revocation or delay of the renewal of permits and licenses by government entities. In addition, such government entities, as well as surrounding landowners, may claim that we are liable for environmental damages. Citizens groups have become increasingly active in challenging the grant or renewal of

permits and licenses for hazardous waste facilities, and responding to such challenges has further increased the costs associated with establishing new facilities or expanding current facilities. A significant judgment against us, the loss of a significant permit or license or the imposition of a significant fine could have a material effect on our business and future prospects.

ITEM 1A. RISK FACTORS

An investment in our securities involves certain risks, including those described below. One should carefully consider these risk factors together with all of the information included or incorporated by reference in this report before investing in our securities.

OPERATIONAL RISKS

Our businesses are subject to operational and safety risks.

Providing our suite of services to our customers and operating our facilities involves risks such as equipment defects, malfunctions and failures and natural or man-made disasters, which could potentially result in releases of hazardous materials, damage to or total loss of our property or assets, injury or death of our employees, subcontractors or others or a need to shut down or reduce operation of our facilities while remedial actions are undertaken. Our employees and subcontractors, when necessary, often work under potentially hazardous conditions. These risks expose us to potential liability for pollution and other environmental damages, personal injury, loss of life, business interruption and property damage or destruction. We must also maintain a solid safety record in order to remain a preferred supplier to our major customers. While we seek to minimize our exposure to such risks primarily through (i) comprehensive training programs, (ii) utilizing proper equipment and the latest technologies, (iii) our Environmental Compliance Internal Audit Program, (iv) vehicle and equipment maintenance programs, (v) subcontracting with reputable third-parties (vi) industrial control systems and (vii) insurance, such actions and insurance may not be adequate to cover all of our potential liabilities which could negatively impact our results of operations and cash flows.

Our operations are increasingly dependent upon technology. Failure of these technologies, failure to upgrade or innovate these technologies or failure to identify and develop new technologies could have an adverse impact on our results.

Our information technology systems are critical to our operations, customer experience and financial reporting. Malfunctions of these technologies, including disruptions due to natural or man-made disasters (e.g., terrorism or cyber intrusion), could interrupt operations, create incremental operational and safety risks such as those noted above or negatively impact our service to our customers and hurt our business reputation. System failures could also impede our ability to collect and report financial results timely or comply with regulations associated with our operations.

In addition to the operational and safety risk mitigation procedures noted above, identification of new and emerging technologies may be a risk and an opportunity to our business. Research and development of new technologies may require significant spending which may negatively impact our operating results and cash flows. Failure to innovate and focus on new technologies that provide superior alternatives to traditional environmental services, waste disposal or oil collection and re-refining service offerings may negatively impact our financial results.

A cyber-security incident could negatively impact our business and our relationships with customers.

We use technology in substantially all aspects of our business operations. Mobile devices and other online technologies connect our employees to our customers and our networks. Such uses give rise to cyber-security risks, including security breach, espionage, system disruption, theft, disruption of our business operations, remediation costs for repairs of system damage and inadvertent release of information. Our business involves operational technology integral to our day to day business and the storage and transmission of numerous classes of sensitive and/or confidential information and intellectual property including, but not limited to, private information about employees and financial and strategic information about our Company and our business partners. Furthermore, as we pursue our strategy to grow through acquisitions and new initiatives that improve our operations and cost structure, we are also expanding and improving our information technologies, resulting in a larger technological presence and corresponding exposure to cyber-security risk.

We actively assess our cyber-security and technology risks and modify our operational response to such risks as circumstances and technology change. For example, to avoid the collection and housing of customer payment records, we partner with a Payment Card Industry compliant third party to handle our business customers' credit card transactions in a secure a manner. If we fail to assess and identify current cyber-security risks and those associated with acquisitions and new initiatives, we may become increasingly vulnerable to such risks. We have implemented measures to prevent security breaches and cyber incidents, including the establishment of processes, procedures and systems focused on response readiness, planning, disaster recovery and business continuity. Despite our best efforts, our preventative measures and incident response efforts may not be entirely effective. The theft, destruction, loss, misappropriation or release of sensitive and/or confidential information or

intellectual property, or interference with our operational technology, information technology systems or the technology systems of third parties on which we rely, could result in business disruption, negative publicity, damage to our assets, brand reputational damage, violation of privacy laws, loss of customers, potential liability and competitive disadvantage, which could have a material adverse effect on our financial position, results of operations or cash flows. Like many companies, we have experienced third-party attacks on our computer systems which resulted in some business disruption while we responded, but we believe that no such attack has resulted in any material disruptions or had any of the other material adverse consequences described above in this paragraph. Furthermore, while we maintain what we believe is sufficient insurance coverage that may (subject to certain policy terms and conditions, including deductibles) cover certain aspects of third-party security and cyber-security risks and business interruption, our insurance coverage may not always cover all our costs or losses.

Natural disasters or other catastrophic events, including effects of climate change and pandemics as well as their residual macroeconomic effects, could negatively affect our business.

Natural disasters such as hurricanes, tornados or earthquakes or other catastrophic events including public health threats could negatively affect our operations and financial performance and harm our reputation. The direct and indirect impact of such events could include physical damage to one or more of our facilities, equipment or locations in which we operate, the temporary lack of an adequate workforce in a market and the temporary disruption in rail or truck transportation services upon which we rely. These events could prevent or delay shipments to and collections from customers and those from suppliers. Residual and lingering macroeconomic effects from such events could continue to impact our supply chain, distribution network and/or workforce via longer disruptions or increased costs. These impacts could have a material effect on our business, financial condition, results of operations and cash flows.

Weather conditions and other event driven special projects also cause interim variations in our results. These events could adversely impact the ability of the Company's suppliers and customers to conduct business activities and could ultimately do so for an indefinite period of time. As a result, we may be required to suspend operations in some or all of our locations, which could have a material adverse effect on our business, financial condition and results of operations.

Our growth and success are dependent upon our people. If we lose key personnel and are unable to hire additional qualified personnel in a timely manner, our business may be harmed. A change or deterioration in our relations with our employees could have a materially adverse effect on our business.

Our ability to continue to grow, operate our facilities and provide our services is dependent upon the expertise of certain key managerial and technical personnel. The market for skilled and experienced personnel is highly competitive. Our ability to retain key personnel and/or attract new qualified personnel may have an impact on our business, financial position, results of operations and cash flows.

We put the safety of our employees at the heart of what we do and believe we have a positive relationship with our workforce. However, if our relationship with our employees were to deteriorate, we could be required to incur additional costs related to wages and benefits, inefficiencies in operations, unanticipated costs in sourcing temporary or third-party labor and interference with customer relations.

INDUSTRY RISKS

The hazardous waste management business is subject to significant environmental liabilities.

As of December 31, 2022, we have recorded environmental liabilities valued at \$235.1 million, substantially all of which we assumed in connection with certain acquisitions. We calculate our environmental liabilities on a present value basis in accordance with generally accepted accounting principles, which take into consideration both the amount of such liabilities and the timing when we project that we will be required to pay them. We anticipate our environmental liabilities will be payable over many years and that cash flows generated from our operations will generally be sufficient to fund the payment of such liabilities when required. However, events not now anticipated (including future changes in environmental laws and regulations or their enforcement) could require that such payments be made earlier or in greater amounts than we now estimate, which could adversely affect our financial condition, results of operations and cash flows.

We may also assume additional environmental liabilities as part of future acquisitions. Although we will endeavor to accurately estimate and limit environmental liabilities presented by the businesses or facilities to be acquired, some liabilities, including ones that may exist only because of the past operations of an acquired business or facility, may prove to be more difficult or costly to address than we then estimate. It is also possible that government officials responsible for enforcing environmental laws may believe an environmental liability is more significant than we then estimate, or that we will fail to identify or fully appreciate an existing liability before we become legally responsible to address it.

The hazardous waste management industry is subject to significant economic and business risks.

The future operating results may be affected by such factors as our ability to utilize our facilities and workforce profitably in the face of intense price competition, maintain or increase market share in an industry which has in the past experienced significant downsizing and consolidation, realize benefits from cost reduction programs, collect incremental volumes of waste to be handled through our facilities from existing and acquired sales offices and service centers, obtain sufficient volumes of waste at prices which produce revenue sufficient to offset the operating costs of our facilities, minimize downtime and disruptions of operations and develop our field services business. In particular, economic downturns or recessionary conditions in North America, and increased outsourcing by North American manufacturers to plants located in countries with lower wage costs and less stringent environmental regulations, have adversely affected and may in the future adversely affect the demand for our services. Our business is also cyclical to the extent that it is dependent upon a stream of waste from cyclical industries such as chemical and petrochemical. If those cyclical industries slow significantly, the business that we receive from them would likely decrease.

A significant portion of our business depends upon the demand for cleanup of major spills and other remedial projects and regulatory developments over which we have no control.

Our operations, specifically within the Environmental Services segment, can be affected by the commencement and completion of cleanup of major spills and other events, customers' decisions to undertake remedial projects, seasonal fluctuations due to weather and budgetary cycles influencing the timing of customers' spending for remedial activities, the timing of regulatory decisions relating to hazardous waste management projects, changes in regulations governing the management of hazardous waste, secular changes in the waste processing industry towards waste minimization and the propensity for delays in the demand for remedial services and changes in the myriad of government regulations governing our diverse operations. We do not control such factors and, as a result, our revenue and income can vary from quarter to quarter, and past financial results for certain quarters may not be a reliable indicator of future results for comparable quarters in subsequent years.

If our assumptions relating to expansion of our landfills should prove inaccurate, our results of operations and cash flow could be adversely affected.

When we include permitted or probable expansion airspace in our calculation of available airspace, we adjust our landfill liabilities to the present value of projected costs for cell closure and landfill closure and post-closure. It is possible that our estimates or assumptions could ultimately turn out to be significantly different from actual results. In some cases we may be unsuccessful in obtaining an expansion permit or we may determine that an expansion permit is no longer probable. To the extent that such estimates, or the assumptions used to make those estimates, prove to be significantly different than actual results, or our beliefs that we will receive expansion permits change adversely in a significant manner, our landfill assets, including the assets incurred in the pursuit of the expansion, may be subject to impairment. Furthermore, lower prospective profitability may result due to increased interest accretion and depreciation or asset impairment charges related to the removal of previously included expansion airspace, in addition to the loss of future revenue related to the loss of probable airspace. Further, if our assumptions concerning expansion airspace should prove inaccurate, certain of our cash expenditures for closure of landfills could be accelerated and adversely affect our results of operations and cash flow.

Reductions in the demand for oil products and automotive services in the markets we serve may negatively affect certain of our businesses.

Our operations, predominately within the Safety-Kleen Sustainability Solutions segment, involve collecting used oil, re-refining a portion of such used oil into base and blended lubricating oils and then selling both base and blended oil products to customers. Reduced demand for oil products, whether temporary due to market conditions or a lasting long-term trend, may also lower demand for our services of collecting used oil and, in turn, reduce our feedstock oil volumes for processing through our re-refineries. There are significant fixed costs associated with operating our re-refinery facilities and should production volumes at these facilities decrease, our results of operations and profitability may be materially impacted.

Other businesses, including the Safety-Kleen branches' core service offerings of containerized waste collection services, parts washer services and vacuum services, are inextricably connected to the automotive industry. Miles driven and routine automotive maintenance, along with other automotive industry trends, impact demand for parts-washer services, containerized waste collections and vacuum services. Declines in this industry, whether temporary or a lasting trend, may reduce the demand for these core service offerings which may adversely impact our financial results.

LEGAL, ENVIRONMENTAL AND REGULATORY COMPLIANCE RISKS

Our businesses are subject to numerous statutory and regulatory requirements, which may increase in the future.

Our businesses are subject to numerous statutory and regulatory requirements. Our ability to continue to hold licenses and permits required for our businesses is subject to maintaining satisfactory compliance with such requirements. We may incur significant costs to maintain compliance. Our ability to obtain modifications to our permits or obtain permits to expand our facilities may be met with resistance, substantial statutory or regulatory requirements or may be too costly to achieve. These requirements may cause us to postpone or cancel our plans. Future statutory and regulatory requirements, including any legislation focused on combating climate change, may require significant cost to comply or may require changes to our products or services.

Regulators, in addition to investors, customers and the public in general, have been increasingly focused on ESG and cyber-security practices of companies. We may be subject to additional regulations and disclosure requirements in the future arising from the increased focus on ESG and cyber-security responsibility, including the SEC's recent disclosure proposals on climate change and cyber-security reporting. In addition, customers, including the U.S. government, may require us to implement or report on certain ESG data, procedures or standards to continue doing business with us.

The occurrence of any of the foregoing could have a material impact on our financial condition or results of operations. Further, although we are very committed to compliance and safety, we could be subject to significant fines and penalties, our reputation could be adversely affected and/or we may incur significant costs to maintain or improve our compliance, if our businesses, or third-parties with whom we have a relationship, were to fail to comply with such statutory and regulatory requirements.

The extensive environmental regulations to which we are subject, including potential climate change legislation and regulations, may increase our costs and potential liabilities and limit our ability to operate and expand our facilities.

Our operations and those of others in the environmental services industry are subject to extensive federal, state, provincial and local environmental requirements in both the United States and Canada, including those relating to emissions to air, discharged wastewater, storage, treatment, transport and disposal of regulated materials and cleanup of soil and groundwater contamination. In particular, if we fail to comply with government regulations governing the transport, handling and disposal of hazardous materials, such failure could negatively impact our ability to collect, process and ultimately dispose of hazardous waste generated by our customers. Efforts to conduct our operations in compliance with all applicable laws and regulations, including environmental rules and regulations, require programs to promote compliance, such as training employees and customers, purchasing health and safety equipment and in some cases hiring outside consultants and lawyers. Even with these programs, we and other companies in the environmental services industry are routinely faced with government enforcement proceedings, which can result in fines or other sanctions and require expenditures for remedial work on waste management facilities and contaminated sites. Certain of these laws impose strict and, under certain circumstances, joint and several liability on current and former owners and operators of facilities that release regulated materials or that generate those materials and arrange for their disposal or treatment at contaminated sites. Such liabilities can relate to required cleanup of releases of regulated materials and related natural resource damages. The landscape of environmental regulation to which we are subject can change. Changes to environmental regulation often present new business opportunities for us; however, such changes may also result in increased operating and compliance costs or, in more significant cases, changes to how our facilities are able to operate. We constantly monitor the landscape of environmental regulation; however, our ability to navigate through any changes to such regulations may result in a material effect on our operations, cash flows or financial condition.

From time to time, fines and/or penalties have been levied upon the Company in government environmental enforcement proceedings. Such fines typically have related to our waste treatment, storage and disposal operations. Although none of these fines or penalties that we have paid in the past have had a material adverse effect upon us, future fines and penalties may be more substantial. Further, in the future we may be required to make substantial capital expenditures as a result of government proceedings which would have a negative impact on our financial condition and results of operations. Regulators also have the power to suspend or revoke permits or licenses needed for operation of our plants, equipment and vehicles based on, among other factors, our compliance record, and customers may decide not to use a particular disposal facility or do business with us because of concerns about our compliance record. Suspension or revocation of permits or licenses would impact our operations and could have a material impact on our financial results. Although we have never had any of our facilities' operating permits revoked, suspended or non-renewed involuntarily, it is possible that such an event could occur in the future.

Some environmental laws and regulations impose liability and responsibility on present and former owners, operators or users of facilities and sites for contamination at such facilities and sites without regard to causation or knowledge of contamination. Past practices have resulted in releases of regulated materials at and from certain of our facilities, or the disposal of regulated materials at third-party sites, which may require investigation and remediation, and potentially result in claims of

personal injury, property damage and damages to natural resources. In addition, we occasionally evaluate various alternatives with respect to our facilities, including possible dispositions or closures. Investigations undertaken in connection with these activities may lead to discoveries of contamination that must be remediated, and closures of facilities might trigger compliance requirements that are not applicable to operating facilities. We are currently conducting remedial activities at certain of our facilities and paying a portion of the remediation costs at certain sites owned by third-parties. While, based on available information, we believe these remedial activities will not result in a material effect upon our operations or financial condition, these activities or the discovery of previously unknown conditions could result in material costs.

In addition to the costs of complying with environmental laws and regulations, we incur costs defending against environmental litigation brought by government agencies and private parties. We are now, and may in the future be, a defendant in lawsuits brought by parties alleging environmental damage, personal injury and/or property damage, which may result in our payment of significant amounts.

Environmental and land use laws also impact our ability to expand our facilities. In addition, we are required to obtain government permits to operate our facilities, including all of our landfills. Even if we comply with all applicable environmental laws, we might not be able to obtain requisite permits from applicable government authorities to extend or modify such permits to fit our business needs.

Environmental laws and regulations have adversely affected and may adversely affect parts cleaning and other solvent related services.

In connection with its parts cleaning and other solvent related services, we have been subject to fines and certain orders requiring us to take environmental remedial action. Recent and potential changes in environmental laws and regulations may also adversely affect future parts cleaning and other solvent related services. Interpretation or enforcement of existing laws and regulations, or the adoption of new laws and regulations, may require a modification or curtailment of our parts cleaning operations or replacement or upgrading our facilities or equipment at substantial cost, which we may not be able to pass on to our customers, and we may choose to indemnify our customers from any fines or penalties they may incur as a result of these new laws and regulations. On the other hand, in some cases if new laws and regulations are less stringent, our customers or competitors may be able to manage waste more effectively themselves, which could decrease the demand for parts cleaning and other solvent related services or increase competition, which could adversely affect the results of operations, most predominately within the Environmental Services segment.

We are subject to existing and potential product liability lawsuits relating to parts washer services.

Clean Harbors, through its Safety-Kleen branded operations within the Environmental Services segment, from time to time has been named as a defendant in product liability lawsuits in various courts and jurisdictions throughout the United States. As of December 31, 2022, the Company was involved in 54 such proceedings (including cases which have been settled but not formally dismissed) wherein persons claim personal injury resulting from the use of its parts cleaning equipment or cleaning products. These proceedings typically involve allegations that the solvents used in the parts cleaning equipment contain contaminants or that the solvent recycling process does not effectively remove the contaminants that become entrained in the solvents during their use. In addition, certain claimants assert that the Company failed to adequately warn the product user of potential risks, including a historic failure to warn that such solvents contain trace amounts of toxic or hazardous substances such as benzene.

We maintain insurance that we believe will provide coverage for these claims (over amounts accrued for self-insured retentions and deductibles in certain limited cases), though this insurance may not provide coverage for potential awards of punitive damages. Although we have vigorously defended and will continue to vigorously defend the Company and the safety of its products against all of these claims, these lawsuits are subject to many uncertainties and outcomes cannot be predicted with assurance. We may also be named in additional product liability lawsuits in the future, including claims for which insurance coverage may not be available. If any one or more of these lawsuits were decided unfavorably and the plaintiffs were awarded punitive damages, or if insurance coverage were not available for any such claim, our financial condition and results of operations could be materially and adversely affected. Additionally, if any one or more of these lawsuits were decided unfavorably, such outcome may encourage more lawsuits against us.

STRATEGIC TRANSACTION RISKS

Failure to correctly identify strategic acquisitions and divestitures could adversely impact our future results.

We continuously evaluate potential acquisition candidates and from time to time acquire companies that we believe will strategically fit into our business and growth objectives. If we are unable to successfully identify, integrate and develop acquired businesses, we could fail to achieve anticipated synergies and cost savings, including any expected increases in revenues and operating results, which could have a material adverse effect on our financial results. We also continually review

our portfolio of assets to determine the extent to which assets or groups of assets are contributing to our objectives and growth strategy. When we decide to sell a business or specific asset group, we may be unable to do so on satisfactory terms and within our anticipated time frame.

Future acquisitions of companies may expose us to unknown liabilities.

If there are unknown liabilities or other obligations, including contingent liabilities, arising from potential acquisitions, our business could be materially affected. We may learn additional information about potential acquired companies that adversely affects us, such as unknown liabilities or other issues relating to internal controls over financial reporting, issues that could affect our ability to comply with the Sarbanes-Oxley Act or issues that could affect our ability to comply with other applicable laws.

INSURANCE, ACCOUNTING AND TAX RELATED RISKS

If we become unable to obtain, at reasonable cost, the insurance, surety bonds, letters of credit and other forms of financial assurance required for our facilities and operations, our business and results of operations would be adversely affected.

We are required to provide substantial amounts of financial assurance to government agencies for closure and post-closure care of our licensed hazardous waste treatment facilities and certain other permitted facilities should those facilities cease operation, and we are also occasionally required to post surety, bid and performance bonds in connection with certain customer projects. We have obtained all of the required financial assurance for our facilities through a combination of surety bonds and insurance from qualified insurance companies. The financial assurance related to closure and post-closure obligations of our U.S. and Canadian facilities will renew at various dates throughout 2023.

Our ability to continue operating our facilities and conducting our operations would be adversely affected if we became unable to obtain sufficient insurance, surety bonds, letters of credit and other forms of financial assurance at reasonable cost to meet our regulatory and other business requirements. The availability of insurance, surety bonds, letters of credit and other forms of financial assurance is affected by our insurers', sureties' and lenders' assessment of our risk and by other factors outside of our control such as general conditions in the insurance and credit markets.

Our insurance coverage and self-insurance reserves may be inadequate to cover all significant risk exposures, and increasing costs to maintain adequate coverage may significantly impact our financial condition and results of operations.

We carry a range of insurance policies intended to protect our assets and operations, including general liability insurance, property damage, business interruption and environmental risk insurance. While we endeavor to purchase insurance coverage appropriate to our risk assessment, we are unable to predict with certainty the frequency, nature or magnitude of claims for direct or consequential damages, and as a result our insurance program may not fully cover us for losses we may incur.

As a result of a number of catastrophic weather and other events, insurance companies have incurred substantial losses and in many cases they have substantially reduced the nature and amount of insurance coverage available to the market, have broadened exclusions and/or have substantially increased the cost of such coverage. If this trend continues, we may not be able to maintain insurance of the types and coverage we desire at reasonable rates or we may need to take on higher deductibles to obtain such coverage. A partially or completely uninsured claim against us (including liabilities associated with cleanup or remediation at our facilities), if successful and of sufficient magnitude, could have a material adverse effect on our business, financial condition and results of operations. Higher deductibles could result in more volatility in our results of operations as well. Any future difficulty in obtaining insurance could also impair our ability to secure future contracts, which may be conditioned upon the availability of adequate insurance coverage. In addition, claims associated with risks for which we are to some extent self-insured (property, workers' compensation, employee medical, comprehensive general liability and vehicle liability) may exceed our recorded reserves, which could negatively impact future earnings.

Tax interpretations and changes in tax regulations and legislation could adversely affect our results of operations.

We are subject to income taxes in the United States, Canada, India, Mexico, Puerto Rico and various state and local jurisdictions. Tax interpretations, regulations and legislation in the various jurisdictions in which we operate are subject to change and uncertainty and may impact our results of operations and cash flows. Our interpretation of tax rules and regulations, including those relating to foreign jurisdictions, requires judgment that may be challenged by taxation authorities upon audit. Although we believe our assumptions, judgments and estimates are reasonable, changes in tax laws or our interpretation of tax laws and the resolution of any tax audits could significantly impact the amounts provided for income taxes in our consolidated financial statements.

Fluctuations in foreign currency exchange could affect our financial results.

We earn revenues, pay expenses, own assets and incur liabilities in countries using currencies other than the U.S. Dollar. In particular, we recorded approximately 13.0% of our fiscal 2022 direct revenues in Canada. Because our consolidated financial statements are presented in U.S. Dollars, we must translate revenues, income and expenses as well as assets and liabilities into U.S. Dollars at exchange rates in effect during or at the end of each reporting period. Therefore, increases or decreases in the value of the U.S. Dollar against other currencies in countries where we operate affect our results of operations and the value of balance sheet items denominated in foreign currencies.

Certain adverse conditions have required, and future conditions might require, us to make substantial write-downs in our assets, which have adversely affected or would adversely affect our balance sheet and results of operations.

We review our long-lived tangible and intangible assets for impairment whenever events or changes in circumstances indicate that the carrying value of an asset may not be recoverable. We also test our goodwill and indefinite-lived intangible assets for impairment at least annually on December 31, or when events or changes in the business environment indicate that the carrying value of a reporting unit or indefinite lived intangible may exceed its fair value. During each of 2022, 2021 and 2020, we determined that no asset write-downs were required. However, if conditions in any of the businesses in which we operate were to deteriorate, we could determine that certain of our assets are impaired and we would then be required to write-off all or a portion of the value of such assets. Any significant write-offs would adversely affect our balance sheet and results of operations.

DEBT AND FINANCING RELATED RISKS

Our levels of outstanding debt and letters of credit could adversely affect our financial condition and ability to fulfill our obligations.

As of December 31, 2022, our long-term debt consisted of \$845.0 million of senior unsecured notes and \$1,604.0 million of senior secured term loans, with letters of credit of \$111.4 million drawn against our revolving credit facility. Our levels of outstanding debt and letters of credit may:

- adversely impact our ability to obtain additional financing in the future for working capital, capital expenditures, acquisitions or other general corporate purposes or to repurchase our senior unsecured notes from holders upon any change of control;
- require us to dedicate a substantial portion of our cash flow to payment of interest on our debt and fees on our letters of credit, which reduces the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes;
- subject us to variable interest rate risk on \$654.0 million of our \$1,604.0 million senior secured term loans for which, as of December 31, 2022, we do not have interest rate hedges and borrowings (if any) under our revolving credit facility;
- increase the possibility of an event of default under the financial and operating covenants contained in our debt instruments; and
- limit our ability to adjust to rapidly changing market conditions, reduce our ability to withstand competitive pressures and make us more vulnerable to a downturn in general economic conditions of our business than our competitors with less debt.

Our ability to make scheduled payments of principal or interest with respect to our debt, including our outstanding senior unsecured notes, our senior secured term loans, any revolving loans and our finance leases, and to pay fee obligations with respect to our letters of credit, will depend on our ability to generate cash and our future financial results. If we were unable to generate sufficient cash flow from operations in the future to service our debt and letter of credit fee obligations, we might be required to refinance all or a portion of our existing debt and letter of credit facilities or to obtain new or additional such facilities. However, we might not be able to obtain any such new or additional facilities on favorable terms or at all.

Should the need arise, we could incur substantially more debt and letter of credit obligations in the future.

Although our revolving credit agreement and the indenture and loan agreement governing our other outstanding debt contain restrictions on the incurrence of additional debt (including, for this purpose, reimbursement obligations under outstanding letters of credit), these restrictions are subject to a number of qualifications and exceptions and the additional debt which we might incur in the future in compliance with these restrictions could be substantial. In particular, as of December 31, 2022, we had up to approximately \$288.6 million available for additional borrowings and letters of credit under our revolving credit facility. Our revolving credit agreement and the indenture and loan agreement governing our other outstanding debt also allow us to borrow significant amounts of money from other sources. These restrictions also do not prevent us from incurring

obligations (such as operating leases) that do not constitute “debt” or “indebtedness” as defined in the relevant agreements. To the extent we incur in the future additional debt and letter of credit or other obligations, the related risks would increase.

The covenants in our debt agreements restrict our ability to operate our business and might lead to a default under our debt agreements.

Our revolving credit agreement and the indenture and loan agreement governing our other outstanding debt limit, among other things, the extent to which the Company or our restricted subsidiaries can:

- incur or guarantee additional indebtedness (including, for this purpose, reimbursement obligations under letters of credit) or issue preferred stock;
- pay dividends or make other distributions to our stockholders;
- purchase or redeem capital stock or subordinated indebtedness;
- make investments;
- create liens;
- incur restrictions on the ability of our restricted subsidiaries to pay dividends or make other payments to us;
- sell assets, including capital stock of our subsidiaries;
- consolidate or merge with or into other companies or transfer all or substantially all of our assets; and
- engage in transactions with affiliates.

As a result of these covenants, we may not be able to respond to changes in business and economic conditions and to obtain additional financing, if needed, and we may be prevented from engaging in transactions that might otherwise be beneficial to us. Our revolving credit facility requires, and our future credit facilities may require, us to maintain under certain circumstances certain financial ratios and satisfy certain other financial condition tests. Our ability to meet these financial ratios and tests can be affected by events beyond our control, and we may not be able to meet those tests. The breach of any of these covenants could result in a default under our outstanding or future debt. Upon the occurrence of an event of default, the lenders could elect to declare all amounts outstanding under such debts, including accrued interest or other obligations, to be immediately due and payable. If amounts outstanding under such debts were accelerated, our assets might not be sufficient to repay in full those debts.

Our revolving credit agreement and the indentures and loan agreement governing our other outstanding debt also contain cross-default and cross-acceleration provisions. Under these provisions, a default or acceleration under one instrument governing our debt may constitute a default under our other debt instruments that contain cross-default and cross-acceleration provisions, which could result in the related debt and the debt under such other instruments becoming immediately due and payable. In such event, we would need to raise funds from alternative sources, which funds might not be available to us on favorable terms, on a timely basis or at all. Alternatively, such a default could require us to sell assets and otherwise curtail operations to pay our creditors. The proceeds of such a sale of assets or curtailment of operations might not enable us to pay all of our liabilities.

COMMON STOCK RELATED RISKS

The Massachusetts Business Corporation Act and our By-Laws contain certain anti-takeover provisions.

Sections 8.06 and 7.02 of the Massachusetts Business Corporation Act provide that Massachusetts corporations which are publicly-held must have a staggered board of directors and that written demand by holders of at least 40% of the outstanding shares of each relevant voting group of stockholders is required for stockholders to call a special meeting unless such corporations take certain actions to affirmatively "opt-out" of such requirements. In accordance with these provisions, our By-Laws provide for a staggered board of directors which consists of three classes of directors of which one class is elected each year for a three-year term, and require that written application by holders of at least 25% (which is less than the 40% which would otherwise be applicable without such a specific provision in our By-Laws) of our outstanding shares of common stock is required for stockholders to call a special meeting. In addition, our By-Laws prohibit the removal by the stockholders of a director except for cause. These provisions could inhibit a takeover of our Company by restricting stockholders' action to replace the existing directors or approve other actions which a party seeking to acquire us might propose. A takeover transaction would frequently afford stockholders an opportunity to sell their shares at a premium over then market prices.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

Our principal executive offices are in Norwell, Massachusetts. We own our primary executive office building in Massachusetts which occupies 104,000 square feet. We also currently lease 59,300 square feet of additional office space in Norwell, Massachusetts under arrangements which may not expire until 2042. We have regional administrative offices in Texas, Florida and South Carolina, as well as Alberta, Canada and Hyderabad, India. Our properties are sufficient and suitable for our current needs.

We have over 750 operating locations housed at approximately 570 properties covering all 50 states, nine Canadian provinces, Puerto Rico and Mexico. These operating locations include service centers, branches, satellite locations, active hazardous waste management properties and oil processing, blending and packaging facilities. Some of our properties offer multiple capabilities. The following sets forth certain information regarding our key properties as of December 31, 2022.

Service Centers, Branches and Satellite Locations

We have more than 500 service centers, branches and satellite locations, across approximately 410 locations throughout the United States and Canada. These serve as principal sales and service centers from which we provide our environmental, industrial and Safety-Kleen branch core services for our Environmental Services business as well as oil collection and product sales locations for our Safety-Kleen Sustainability Solutions business.

Active Hazardous Waste Management Properties

Incinerator Facilities. We own and operate five incinerator facilities that have a total of nine incinerators with 561,721 tons of total practical capacity and an overall average utilization rate for 2022 of 86.2%. Our practical capacity is not based on a theoretical 24-hour, seven-day operation, but rather is determined as the production level at which our incinerators can operate with an acceptable degree of efficiency, taking into consideration factors such as longer term customer demand, permanent staffing levels, operating shifts, holidays, scheduled maintenance and mix of product. Capacity utilization is calculated by dividing actual production tons by practical capacity at each incinerator. The following table summarizes the practical capacity and utilization for each incinerator for the year ended December 31, 2022:

	# of Incinerators	Practical Capacity (Tons)	Utilization Rate Year Ended December 31, 2022
Arkansas	3	145,072	100.1%
Nebraska	1	58,808	88.2%
Utah	1	66,815	79.1%
Texas	3	165,500	83.1%
Ontario, Canada	1	125,526	77.2%
	<u>9</u>	<u>561,721</u>	<u>86.2%</u>

Our incinerators offer a wide range of technological capabilities to customers through this network. In the United States, we provide incineration through one fluidized bed thermal oxidation unit and three solids and liquids-capable incinerator facilities and we operate one active hazardous waste liquid injection incinerator in Canada.

Commercial and Non-Commercial Landfills. In the United States and Canada, we operate seven commercial landfills with approximately 28.2 million cubic yards of remaining highly probable airspace. Six of our commercial landfills are designed and permitted for the disposal of hazardous waste and one landfill is operated for non-hazardous industrial waste disposal and, to a lesser extent, municipal solid waste. In addition to our commercial landfills, we also own and operate two non-commercial landfills that only accept waste from our on-site incinerators. One of these non-commercial landfills is expected to reach its permitted capacity in early 2023 at which point we will begin closures activities. Additionally, we are in the process of closing two commercial landfills, Altair and Westmorland. The two commercial landfills that are already in closure, are excluded from the landfill counts above. See "Landfill Accounting" within Note 2, "Significant Accounting Policies," to our consolidated financial statements included in Item 8 of this report for additional information on our commercial and non-commercial landfills.

Wastewater Treatment Facilities. We operate a total of ten facilities, of which eight are owned and two are leased, that offer a range of wastewater treatment technologies and services. Wastewater treatment consists primarily of three types of services: hazardous wastewater treatment, sludge dewatering or drying and non-hazardous wastewater treatment.

Treatment, Storage and Disposal Facilities. We operate 33 TSDFs in the United States and Canada, of which 29 are owned and four are leased. Our TSDFs facilitate the movement of materials among our network of service centers and treatment and disposal facilities. Transportation may be accomplished by truck, rail, barge or a combination of modes, with our

own assets or in conjunction with third-party transporters. Specially designed containment systems, vehicles and other equipment permitted for waste transport, together with drivers trained in transportation and waste handling procedures, provide for the movement of customer waste streams.

Other Hazardous Waste Management Properties. We own eight facilities specializing in solvent recovery management. We also own two autoclave facilities specifically designed to treat medical waste.

Oil Processing, Blending and Packaging Facilities

Oil Terminals. We operate a total of 78 oil terminals, of which 51 are owned and 27 are leased, which collect or process used oil prior to delivery to our re-refineries or distribution as recycled fuel oil.

Oil Recycling and Re-refining Facilities. We own eight oil re-refineries, seven in the United States and one in Canada. With nearly 232.5 million gallons of used oil collected this year, we were able to return 196 million gallons of new re-refined oil, lubricants and byproducts back into the marketplace in 2022.

Oil Packaging and Blending Facilities. We operate a total of five oil packaging and blending facilities, of which three are owned and two are leased.

ITEM 3. LEGAL PROCEEDINGS

See Note 18, "Commitments and Contingencies," to our consolidated financial statements included in Item 8 of this report for a description of legal proceedings.

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****Common Stock**

Our common stock trades on the New York Stock Exchange ("NYSE") under the symbol CLH. On February 22, 2023, there were 252 stockholders of record of our common stock, excluding stockholders whose shares were held in nominee, or "street name" accounts through brokers or banks. On our last record date, approximately 55,000 additional stockholders beneficially held shares in street name accounts.

We have never declared nor paid any cash dividends on our common stock, and we do not intend to pay any dividends on our common stock in the foreseeable future. We intend to retain our future earnings, if any, for use in the operation and expansion of our business, payment of our outstanding debt and for our stock repurchase program. In addition, our current revolving credit agreement and the indentures and loan agreement governing our other outstanding debt limit the amount we could pay as cash dividends on or for repurchase of our common stock. For additional information surrounding our stock repurchase program, see Note 15, "Stockholders' Equity," to our consolidated financial statements included in Item 8 of this report.

Securities Authorized For Issuance Under Equity Compensation Plans

See Item 12, "Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters," for a description of the securities which are authorized for issuance under our equity compensation plans.

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share ⁽²⁾	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 ⁽³⁾ (in thousands)
October 1, 2022 through October 31, 2022	1,567	\$ 109.98	—	\$ 111,265
November 1, 2022 through November 30, 2022	54,918	115.49	52,098	105,265
December 1, 2022 through December 31, 2022	17,790	116.52	—	105,265
Total	<u>74,275</u>		<u>52,098</u>	

(1) Includes 22,177 shares withheld by us from employees to satisfy employee tax obligations upon vesting of restricted shares granted under our long-term equity incentive programs.

(2) The average price paid per share of common stock repurchased under our stock repurchase program includes commissions paid to the brokers.

(3) Our Board of Directors has authorized the repurchase of up to \$600.0 million of our common stock. We have funded and intend to fund the repurchases through available cash resources. The stock repurchase program authorizes us to purchase our common stock on the open market or in privately negotiated transactions periodically in a manner that complies with applicable U.S. securities laws. The number of shares purchased and the timing of the purchases has depended and will depend on several factors, including share price, cash required for business plans, trading volume and other conditions. We maintain a repurchase plan in accordance with Rule 10b5-1 promulgated under the Securities Exchange Act of 1934, as amended. During the three months ended December 31, 2022, no shares were repurchased under the Rule 10b5-1 plan. Future repurchases may be made as open market or privately negotiated transactions as described above. We have no obligation to repurchase stock under this program and may suspend or terminate the repurchase program at any time.

COMPARISON OF 5-YEAR CUMULATIVE TOTAL RETURN

AMONG CLEAN HARBORS, INC.,

NYSE COMPOSITE INDEX, S&P MIDCAP 400 INDEX, REFUSE SYSTEMS AND CUSTOM PEER GROUPS

Performance Graph

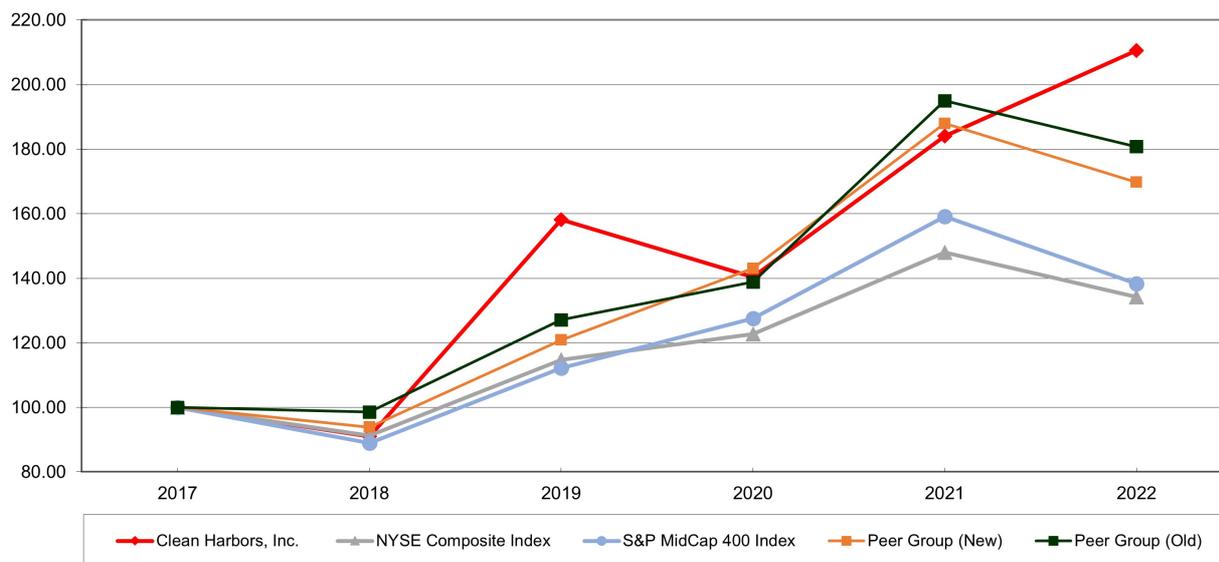
The following graph compares the five-year return from investing \$100 in each of our common stock, the NYSE Composite Index, the S&P Midcap 400 Index, and two custom peer groups. In 2022, we reassessed our peers to maintain a group that closely aligns with the breadth and size of our current operations. As a result of this assessment, we established the following group as Peer Group (New): ABM Industries Incorporated, Advanced Drainage Systems, Inc., Chemed Corporation, Darling Ingredients, Inc., Emcor Group, Inc., GFL Environmental, Inc., Harsco Corporation, Healthcare Services Group, Inc., Heritage-Crystal Clean, Inc., Huntsman Corporation, Iron Mountain Incorporated, KBR, Inc, Quanta Services, Inc., Republic Services, Inc., Rollins, Inc., Stericycle, Inc., Tetra Tech, Inc., Waste Connections, Inc., and Waste Management, Inc. We had previously established our Peer Group in 2018 which comprised of the following group, included in the graph below as Peer Group (Old): American Water Works Company, Inc., Casella Waste Systems, Inc., Civeo Corporation, Covanta Holding Corporation, Heritage-Crystal Clean, Inc., Iron Mountain Incorporated, Newpark Resources, Inc., Oil States International, Inc., Republic Services, Inc., Stericycle, Inc., Superior Energy Services, Inc. and Waste Management, Inc. US Ecology had previously been in Peer Group Old, however was acquired by Republic Services in 2022 so is no longer listed.

In accordance with the rules of the SEC, the performance graph presents both peer group indices in the year of the change. In future Annual Reports of Form 10-K, we expect to report only on Peer Group (New), and not the Peer Group (Old), in the performance graph, which we believe best illustrates a relevant peer index to the Company's current operations.

The values illustrated assume reinvestment of dividends on the ex-dividend date and compares relative performance since a particular starting date. In this instance, the starting date was December 29, 2017, when our common stock closed at \$54.20 per share. The graph is presented pursuant to SEC rules and is not meant to be an indication of our future performance.

NOTE: Index Data: Copyright Standard and Poor's, Inc. Used with permission. All rights reserved.

Comparison of 5 Year Cumulative Total Return
Assumes Initial Investment of \$100
December 2022



ITEM 6. RESERVED**ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS****Overview**

We are North America's leading provider of environmental and industrial services supporting our customers in finding environmentally responsible solutions to further their sustainability goals in today's world. Everywhere industry meets the environment, we strive to provide eco-friendly products and services that protect and restore North America's natural environment. We believe we operate, in the aggregate, the largest number of hazardous waste incinerators, landfills and treatment, storage and disposal facilities in North America. We serve over 300,000 customers, including the majority of Fortune 500 companies, across various markets including chemical and manufacturing, as well as numerous government agencies. These customers rely on us to deliver a broad range of services including but not limited to end-to-end hazardous waste management, emergency response, industrial cleaning and maintenance and recycling services. We are also the largest re-refiner and recycler of used oil in North America and the largest provider of parts cleaning and related environmental services to commercial, industrial and automotive customers in North America.

Performance of our segments is evaluated on several factors of which the primary financial measure is Adjusted EBITDA, as reconciled to our net income and described more fully below. The following is a discussion of how management evaluates its segments in regards to other factors including key performance indicators that management uses to assess the segments' results, as well as certain macroeconomic trends and influences that impact each reportable segment:

- **Environmental Services** - Environmental Services segment results are predicated upon the demand by our customers for our wide variety of services, waste volumes managed by delivering such services and project work for which responsible waste handling and/or disposal is required. Environmental Services results are also impacted by the demand for planned and unplanned industrial related cleaning and maintenance services at customer sites, environmental cleanup services on a scheduled or emergency basis, including response to large scale events such as major chemical spills, natural disasters, or other instances where immediate and specialized services are required. The Environmental Services segment results include the Safety-Kleen branches' core environmental service offerings of containerized waste disposal, parts washer and vacuum services. These results are driven by the volumes of waste collected from these customers, the overall number of parts washers placed at customer sites and the demand for and frequency of other offered services. In managing the business and evaluating performance, management tracks the volumes and mix of waste handled and disposed of or recycled, generally through our incinerators, treatment, storage and disposal facilities ("TSDFs") and landfills, the utilization rates of our incinerators, equipment and workforce, including billable hours, and number of parts washer services performed, pricing realized by our business and peer companies as well as other key metrics. Levels of activity and ultimate performance associated with this segment can be impacted by several factors including overall U.S. GDP, U.S. industrial production, economic conditions in the chemical, manufacturing and automotive markets including efforts and economic incentives to reshore operations to the U.S., available capacity at waste disposal outlets, weather conditions, efficiency of our operations, technology, changing regulations, competition, market pricing of our services, costs incurred to deliver our services and the management of our related operating costs.
- **Safety-Kleen Sustainability Solutions** - Safety-Kleen Sustainability Solutions segment results are impacted by our customers' demand for high-quality, environmentally responsible recycled oil products and their demand for our related service and product offerings. Safety-Kleen Sustainability Solutions offers high quality recycled base and blended oil products, including our KLEEN+ brand of Group II+ base oils, to end users including fleet customers, distributors and manufacturers of oil products. Segment results are impacted by overall demand, market pricing and the mix of our oil product sales. Segment results are also predicated on the demand for Safety-Kleen Sustainability Solutions' other product and service offerings including collection services for used oil, used oil filters and other automotive fluids. These fluid collections are used as feedstock in our oil re-refining to produce our base and blended oil products and our recycled automotive related fluid products or are integrated into the Clean Harbors' recycling and disposal network. In operating the business and evaluating performance, management tracks the volumes and relative percentages of base and blended oil sales along with various pricing metrics associated with the commodity driven margin between product pricing and the overall costs associated with the collection of used oil. Levels of activity and ultimate performance associated with this segment can be impacted by economic conditions in the automotive services and manufacturing markets, efficiency of our operations, technology, weather conditions, changing regulations, competition and the management of our related operating costs. Costs incurred in connection with the collection of used oil and other raw materials associated with the segment's oil related products can also be volatile and can be impacted by global events and their relative

impact on commodity products and pricing. The overall market price of oil and regulations that change the possible usage of used oil, including the International Maritime Organization's 2020 regulation ("IMO 2020") and other regulations related to the burning of used motor oil as a fuel, impact the premium the segment can charge for used oil collections.

Highlights

Total direct revenues for 2022 increased 35.8% or \$1.4 billion to \$5.2 billion, compared with \$3.8 billion in 2021. Our Environmental Services segment direct revenues increased \$1.1 billion in 2022 compared with 2021 driven by both organic growth in the segment and growth from the acquisition of HydroChemPSC. Environmental Services saw nearly 20% organic growth from 2021 to 2022 due to continued demand for our disposal network capabilities and services as well as pricing initiatives designed to recover increased operating costs. Direct revenues recorded by Safety-Kleen Sustainability Solutions increased \$221.6 million in 2022 compared to 2021 primarily due to higher pricing of our base and blended oil products. Foreign currency translation of our Canadian operations negatively impacted our consolidated direct revenues by \$26.1 million in 2022 as compared to 2021.

In 2022, our business continued to see costs increase in both the Environmental Services and Safety-Kleen Sustainability Solutions segments when compared to the prior year given the increase in business levels and revenue mix, as well as inflationary pressures seen across several cost categories and supply chain constraints. Supply chain challenges for additives and other materials used in the oil re-refining process have delayed production, added costs and shifted the product mix within our Safety-Kleen Sustainability Solutions segment. Similarly within the Environmental Services segment, supply chain challenges have delayed fleet and equipment delivery, increasing rental and external transportation costs. Strategic decisions made in connection with these challenges drove increased investment in certain supplies related inventory resulting in higher working capital balances. We believe that this investment will help to mitigate future potential supply chain constraints. Also to combat inflationary pressures across both segments and our Corporate operations in 2022, we executed upon cost control initiatives, to the greatest extent possible, as well as strategic pricing initiatives with customers.

Income from operations in 2022 increased 82.5% to \$634.7 million, compared with \$347.9 million in 2021. We reported net income in 2022 and 2021 of \$411.7 million and \$203.2 million, respectively. Adjusted EBITDA, which is the primary financial measure by which we evaluate our segments, increased 51.1% to \$1,022.1 million in 2022 from \$676.6 million in 2021. This improved performance was driven by the increased revenue levels in both segments noted above, including the acquisition of HydroChemPSC, focused pricing initiatives in the Environmental Services segment, strong spread management as it relates to the pricing of base oil products and used motor oil collection services in the Safety-Kleen Sustainability Services segment. Cost control initiatives across the entire Company, which were aided by the ability to leverage our fixed costs structure particularly relative to general and administrative costs also drove this increase. Additional information regarding Adjusted EBITDA, which is a non-GAAP measure, including a reconciliation of Adjusted EBITDA to net income, appears below under "*Adjusted EBITDA*."

Net cash from operating activities for 2022 was \$626.2 million, an increase of \$80.2 million from 2021. Adjusted free cash flow, which management uses to measure our financial strength and ability to generate cash, was \$289.9 million in 2022, which represented a \$36.4 million decrease over 2021. This decrease is due to \$116.6 million of additional spend on property, plant and equipment net of proceeds from sale and disposal of fixed assets in 2022 driven by increased spend on the new incinerator being built in Kimball, Nebraska as well as the HydroChemPSC operations. Higher working capital balances, which developed as a result of the significant growth we saw across the business, also contributed to the cash flow change, however greater levels of operating income partially offset these decreases in adjusted free cash flow. Additional information regarding adjusted free cash flow, which is a non-GAAP measure, including a reconciliation of adjusted free cash flow to net cash from operating activities, appears below under "*Adjusted Free Cash Flow*."

Segment Performance

The primary financial measure by which we evaluate the performance of our segments is Adjusted EBITDA. The following table sets forth certain financial information associated with our results of operations for the years ended December 31, 2022, 2021 and 2020 (in thousands, except percentages):

	Summary of Operations						
	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Direct Revenues⁽¹⁾:							
Environmental Services	\$ 4,171,706	\$ 3,032,454	\$ 2,635,901	\$ 1,139,252	37.6%	\$ 396,553	15.0%
Safety-Kleen Sustainability Solutions	994,392	772,813	507,906	221,579	28.7	264,907	52.2
Corporate Items	507	299	290	208	N/M	9	N/M
Total	5,166,605	3,805,566	3,144,097	1,361,039	35.8	661,469	21.0
Cost of Revenues⁽²⁾:							
Environmental Services	2,902,979	2,106,790	1,739,115	796,189	37.8	367,675	21.1
Safety-Kleen Sustainability Solutions	615,303	484,662	374,872	130,641	27.0	109,790	29.3
Corporate Items	25,648	18,385	23,764	7,263	N/M	(5,379)	N/M
Total	3,543,930	2,609,837	2,137,751	934,093	35.8	472,086	22.1
Selling, General and Administrative Expenses:							
Environmental Services	315,674	265,946	230,868	49,728	18.7	35,078	15.2
Safety-Kleen Sustainability Solutions	72,762	60,797	49,820	11,965	19.7	10,977	22.0
Corporate Items	238,955	211,219	170,356	27,736	13.1	40,863	24.0
Total	627,391	537,962	451,044	89,429	16.6	86,918	19.3
Adjusted EBITDA:							
Environmental Services	953,053	659,718	665,918	293,335	44.5	(6,200)	(0.9)
Safety-Kleen Sustainability Solutions	306,327	227,354	83,214	78,973	34.7	144,140	173.2
Corporate Items	(237,252)	(210,466)	(175,328)	(26,786)	(12.7)	(35,138)	(20.0)
Total	\$ 1,022,128	\$ 676,606	\$ 573,804	\$ 345,522	51.1%	\$ 102,802	17.9%
Adjusted EBITDA as a % of Direct Revenues:							
Environmental Services	22.8 %	21.8 %	25.3 %	1.0 %		(3.5)%	
Safety-Kleen Sustainability Solutions	30.8 %	29.4 %	16.4 %	1.4 %		13.0 %	
Corporate Items	N/M	N/M	N/M	N/M		N/M	
Total	19.8 %	17.8 %	18.3 %	2.0 %		(0.5)%	

N/M = not meaningful

(1) Direct revenue is revenue allocated to the segment performing the provided service.

(2) Cost of revenue is shown exclusive of items presented separately on the consolidated statements of operations, which consist of (i) accretion of environmental liabilities and (ii) depreciation and amortization.

Direct Revenues

There are many factors which have impacted and continue to impact our revenues including, but not limited to: overall levels of industrial activity and economic growth in North America, existence or non-existence of large scale environmental waste and remediation projects, competitive industry pricing, miles driven and related lubricant demand, impacts of acquisitions and divestitures, the level of emergency response services, captive incinerator closures, government infrastructure investment, weather related events, base and blended oil pricing, market changes relative to the collection of used oil, our ability to manage the spread between oil product prices and prices for the collection of used oil, the number of parts washers placed at customer sites and foreign currency translation. In addition, customer efforts to minimize hazardous waste and changes in regulation can impact our revenues.

Environmental Services

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Direct revenues	\$ 4,171,706	\$ 3,032,454	\$ 2,635,901	\$ 1,139,252	37.6 %	\$ 396,553	15.0 %

Environmental Services direct revenues for the year ended December 31, 2022 increased \$1,139.3 million from the comparable period in 2021, split almost equally between organic growth of the legacy operations and incremental revenues from the HydroChemPSC operations. More specifically, direct revenues of our industrial service offerings increased \$605.1 million, most predominately in revenue streams associated with the HydroChemPSC operations. Technical services and Safety-Kleen Environmental services revenues, which were not impacted by the acquisition of HydroChemPSC, grew by 23.6% and 18.5%, respectively. Technical services revenues increased \$285.6 million with revenue growth across our portfolio of waste disposal facilities driven by higher throughput, higher value waste streams at our incinerators and broad based pricing initiatives, including fuel surcharges. In 2022, utilization at our incinerators was 86% as compared to 85% in 2021, largely due to increased volumes and throughput efficiencies offsetting an increase in down days due to weather related events, most notably in the fourth quarter of 2022. We also saw a 29% increase in landfill volumes in 2022 when compared with 2021. Direct revenues for the Safety-Kleen core service offerings increased \$119.4 million from the comparable period in 2021 due to improved pricing and greater demand for our containerized waste, vacuum services and parts washer services. Field and emergency response services revenues increased \$108.9 million largely due to contributions from the HydroChemPSC operations and as legacy base business returned to pre-pandemic levels despite a \$39.3 million decrease in decontamination services. The Canadian operations of the Environmental Services segment were negatively impacted by \$19.4 million due to foreign currency translation.

Environmental Services direct revenues for the year ended December 31, 2021 increased \$396.6 million from the comparable period in 2020. The Environmental Services segment benefitted from \$166.1 million of direct revenues contributed by the HydroChemPSC operations since the acquisition on October 8, 2021. Excluding the HydroChemPSC revenues, Environmental Services revenues increased by \$230.5 million or 8.7%, driven primarily by higher demand throughout our portfolio of services, including technical, industrial and base field services, and higher value waste streams at our incinerator and landfill facilities. The revenue growth across these aspects of the Environmental Services segment was partially offset by lower demand for our decontamination services in 2021, which decreased \$65.0 million from 2020.

Direct revenues for our technical services increased \$146.9 million from 2020 to 2021 primarily due to revenues for waste disposal services at our incinerators, TSDFs and recycle centers. Pricing and mix drove the increase in our incinerator facilities with utilization slightly increasing from 84% to 85%. Revenues related to our legacy industrial services increased \$70.9 million predominately due to increased demand for industrial cleanings as overall economic activity continued to improve and industrial cleaning services previously delayed due to the impacts of COVID-19 were executed upon. Revenues related to base field services, excluding HydroChemPSC and COVID-19 decontamination services, increased \$42.0 million, as demand for these services increased. Safety-Kleen core service offering revenues increased \$16.7 million from the comparable period in 2020 due to higher demand and improved pricing for our containerized waste and vacuum services partially offset by lower revenues for parts washer services. The Canadian operations of the Environmental Services segment were positively impacted by \$27.6 million due to foreign currency translation.

Safety-Kleen Sustainability Solutions

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Direct revenues	\$ 994,392	\$ 772,813	\$ 507,906	\$ 221,579	28.7 %	\$ 264,907	52.2 %

Safety-Kleen Sustainability Solutions direct revenues for the year ended December 31, 2022 increased \$221.6 million from the comparable period in 2021. The overall growth was largely driven by a \$154.1 million increase in base oil revenue predominately due to higher pricing across slightly lower volumes sold. Revenues from recycled fuel oil and refinery byproducts increased \$53.1 million and revenues from blended oil sales increased \$30.0 million due to higher pricing which more than offset lower volumes sold relative to these products. During 2022, the volume of used oil collected increased in line with the expansion of our network through two acquisitions, (see Note 4, "Business Combinations," to our consolidated financial statements included in Item 8 of this report) however, revenue from the collection of used oil decreased \$10.0 million. This decrease in revenues from used oil collections is expected given the inverse correlation between movements in base oil pricing and the market prices associated with our used oil collection services. The Canadian operations of the Safety-Kleen Sustainability Solutions segment were negatively impacted by \$6.7 million in 2022 due to foreign currency translation.

Safety-Kleen Sustainability Solutions direct revenues for the year ended December 31, 2021 increased \$264.9 million from the comparable period in 2020 predominately due to higher pricing and volume of base and blended oil product sales, partially offset by a reduction in direct revenues from used motor oil collections. Base oil sale direct revenues increased \$232.3 million while blended oil direct revenues increased \$42.8 million from the prior year. Revenues from contract blending and packaging increased \$15.9 million, mainly due to increased demand, and revenues from recycled fuel oil and refinery byproducts increased \$12.3 million due to pricing increases. Revenues from used motor oil collection services decreased \$30.0 million due to lower service fees charged for these services despite an increase in collection volumes from the prior year. The pricing decrease on our used motor oil collection services is in line with expectations given the inverse correlation between movements in base oil pricing and the market prices for used oil collection services. The impact of foreign currency translation was a \$7.1 million benefit to our Safety-Kleen Sustainability Solutions' Canadian operations in 2021.

Cost of Revenues

We believe that management of operating costs is vital to our ability to remain price competitive. We continue to experience the current macroeconomic inflationary pressures across several cost categories, but most notably related to internal and external labor, transportation, general supplies and energy related costs. We aim to manage these increases through constant cost monitoring as well as our overall customer pricing strategies designed to offset the negative inflationary impacts on our margins.

We continue to upgrade the quality and efficiency of our services through the development of new technology and continued modifications and expansion at our facilities, invest in new business opportunities and aggressively implement strategic sourcing and logistics solutions in the face of these inflationary pressures, while also continuing to optimize our management and operating structure in an effort to manage our operating margins.

Environmental Services

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Cost of revenues	\$ 2,902,979	\$2,106,790	\$1,739,115	\$ 796,189	37.8 %	\$ 367,675	21.1 %
As a % of Direct revenues	69.6 %	69.5 %	66.0 %	0.1 %		3.5 %	

Environmental Services cost of revenues for the year ended December 31, 2022 increased \$796.2 million from the comparable period in 2021 primarily due to the increase in direct revenues noted above, including additional costs from the HydroChemPSC operations. Cost of revenues as a percentage of direct revenues remained relatively consistent with 2021 despite lower decontamination services and the growth of our industrial services offerings which typically operate at a lower margin than our waste disposal focused offerings. Overall, labor and benefit related costs, including travel, increased \$386.4 million, equipment and supply costs increased \$199.7 million and external transportation, vehicle and fuel costs increased \$132.8 million. These increases were driven by a combination of overall business growth, including the addition of HydroChemPSC, and inflationary pressures.

Environmental Services cost of revenues for the year ended December 31, 2021 increased \$367.7 million from the comparable period in 2020; however, excluding the incremental costs from the operations of the HydroChemPSC acquisition and the \$17.9 million reduction in benefits recognized under the government programs which had been enacted in the U.S. and

Canada in response to the COVID-19 pandemic (the "Government Programs"), these costs increased \$220.5 million or 12.7%. Costs as a percentage of revenues, excluding the impacts of HydroChemPSC and the Government Programs, increased 2.3% primarily due to the mix of services being performed, including lower decontamination services, as well as inflationary pressures across several cost categories including incentive compensation. More specifically, excluding HydroChemPSC and the Government Programs, equipment and supply costs increased \$80.5 million, labor and benefits related costs, including incentive compensation, increased \$74.8 million and transportation, vehicle and fuel related costs increased \$54.7 million.

Safety-Kleen Sustainability Solutions

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Cost of revenues	\$ 615,303	\$ 484,662	\$ 374,872	\$ 130,641	27.0 %	\$ 109,790	29.3 %
As a % of Direct revenues	61.9 %	62.7 %	73.8 %	(0.8)%		(11.1)%	

Safety-Kleen Sustainability Solutions cost of revenues for the year ended December 31, 2022 increased \$130.6 million from 2021 and as a percentage of revenue continued to improve. The cost of raw materials used in production of our oil products increased \$74.5 million, more than half of which was due to increased costs to obtain used oil through our used oil collection services. The increase in base oil pricing has resulted in a correlating increase in the cost we now pay for used oil feedstock. Other primary costs that contributed to the overall increase include external transportation, vehicle and fuel costs which increased \$25.3 million, labor and benefit related costs, including travel, which increased \$9.7 million and equipment and supply costs which increased \$2.8 million.

Safety-Kleen Sustainability Solutions cost of revenues for the year ended December 31, 2021 increased \$109.8 million from the comparable period in 2020 predominately due to the revenue growth experienced by the business. As a percentage of revenues these costs decreased 11.1%. This margin improvement was largely driven by the increased pricing of our products which outpaced the relative cost of revenues as the business successfully managed its spread and capitalized on these favorable market conditions. Production efficiencies also led to this lower cost structure as our re-refineries had greater utilization and output in 2021 as compared to 2020 when certain of the re-refineries were temporarily shuttered for a portion of the year. Overall, significant increases were noted in the cost of oil additives and other raw materials, including the costs associated with used motor oil collected, which increased \$64.9 million, transportation, vehicle and fuel costs which increased \$25.4 million and labor and benefits related costs which increased \$21.9 million.

Selling, General and Administrative Expenses

We strive to manage our selling, general and administrative ("SG&A") expenses commensurate with the overall performance of our segments and corresponding revenue levels. We believe our ability to properly align these costs with business performance is reflective of our strong management of the businesses and further promotes our ability to remain competitive in the marketplace.

Environmental Services

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
SG&A expenses	\$ 315,674	\$ 265,946	\$ 230,868	\$ 49,728	18.7 %	\$ 35,078	15.2 %
As a % of Direct revenues	7.6 %	8.8 %	8.8 %	(1.2)%		— %	

Environmental Services SG&A expenses for the year ended December 31, 2022 increased \$49.7 million from the comparable period in 2021, however improved 1.2% as a percentage of revenues driven by leveraging our SG&A base in the midst of the revenue growth discussed above. Increased labor and benefits related cost, including travel, of \$35.4 million was the largest contributor to the overall cost increase, predominantly due to the addition of the HydroChemPSC business operations, investments in our employees and higher incentive compensation. The remaining increases were spread across various other cost categories.

Environmental Services SG&A expenses for the year ended December 31, 2021 increased \$35.1 million from the comparable period in 2020. Excluding the incremental costs from the operations of HydroChemPSC, these costs increased \$21.2 million, or 9.2%, primarily due to a \$7.5 million reduction in benefits recognized under the Government Programs when compared to the prior year, as well as the overall growth in the business, with the most significant increase in labor and benefits related costs. Excluding HydroChemPSC and the reduction in the benefits from the Government Programs in both periods, SG&A expenses as a percentage of revenues were relatively consistent at 8.9% in 2021 as compared to 9.1% in 2020.

Safety-Kleen Sustainability Solutions

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
SG&A expenses	\$ 72,762	\$ 60,797	\$ 49,820	\$ 11,965	19.7 %	\$ 10,977	22.0 %
As a % of Direct revenues	7.3 %	7.9 %	9.8 %	(0.6)%		(1.9)%	

Safety-Kleen Sustainability Solutions SG&A expenses for the year ended December 31, 2022 increased \$12.0 million from the comparable period in 2021 primarily due to a \$9.9 million increase in labor and benefit costs, including travel, as we expanded our sales team for the segment and made other incremental workforce investments to support its growth. The remaining increases were spread across various cost categories. As a percentage of revenue, these costs improved slightly when compared to the same period in the prior year.

Safety-Kleen Sustainability Solutions SG&A expenses for the year ended December 31, 2021 increased \$11.0 million from the comparable period in 2020 primarily due to the overall growth in the business, with the most significant increase in labor and benefits related costs. Safety-Kleen Sustainability Solutions SG&A expenses as a percentage of revenue improved 1.9% most notably due to a \$1.8 million environmental liability charge for a Superfund site recorded in the second quarter of 2020 which did not recur in 2021.

Corporate Items

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
SG&A expenses	\$ 238,955	\$ 211,219	\$ 170,356	\$ 27,736	13.1 %	\$ 40,863	24.0 %
As a % of Total Company Direct revenues	4.6 %	5.6 %	5.4 %	(1.0)%		0.2 %	

We manage our Corporate SG&A expenses commensurate with the overall total Company performance and direct revenue levels. Generally, as revenues increase, we would expect some increase in these costs, however as a percentage of revenue these costs have remained relatively consistent in 2022, 2021 and 2020.

In total, Corporate Items SG&A expenses increased by \$27.7 million in 2022. Overall cost increases include a \$23.3 million increase in labor, benefits and travel related expenses, including incentive compensation, driven by investments in our workforce, and an \$8.0 million increase from higher stock-based compensation costs. The increase in stock-based compensation expense is driven by the timing of grants issued in 2022 and higher expense associated with the achievement of performance metrics. Overall grants for 2022 were slightly lower than 2021. Additional drivers of the overall increase in Corporate Items SG&A include a \$6.7 million increase in cyber security information technology related costs and a \$2.2 million closure reserve estimate increase for an inactive non-landfill site. Partially offsetting these cost increases were a reduction in professional fees of \$6.8 million and a reduction in severance costs of \$6.0 million, both related to costs from the acquisition of HydroChemPSC in 2021 which did not recur in 2022. Additionally, in 2022 we recognized the \$3.0 million breakup fee received for the termination of the proposed asset acquisition from Vertex Energy, Inc.

Corporate Items SG&A expenses for the year ended December 31, 2021 increased by \$40.9 million when compared to 2020. Overall cost increases include a \$20.4 million increase in labor and benefits related expenses, including incentive compensation, a \$15.0 million increase in professional fees related to the acquisition of HydroChemPSC and some strategic initiative projects, an increase in severance costs of \$3.2 million and a \$2.7 million increase of cyber-security information technology related costs. Partially offsetting these increases was a \$3.3 million charge related to an environmental remediation liability for an inactive site recorded in 2020 which did not recur in 2021 and a \$3.1 million decrease in marketing expenses.

Adjusted EBITDA

Management considers Adjusted EBITDA to be a measurement of performance which provides useful information to both management and investors. Adjusted EBITDA should not be considered an alternative to net income or other measurements under generally accepted accounting principles ("GAAP"). Adjusted EBITDA is not calculated identically by all companies, and therefore our measurements of Adjusted EBITDA, while defined consistently and in accordance with our existing credit agreement, may not be comparable to similarly titled measures reported by other companies.

We use Adjusted EBITDA to enhance our understanding of our operating performance, which represents our views concerning our performance in the ordinary, ongoing and customary course of our operations. We historically have found it helpful, and believe that investors have found it helpful, to consider an operating measure that excludes certain expenses relating to transactions not reflective of our core operations.

The information about our operating performance provided by Adjusted EBITDA is used by our management for a variety of purposes. We regularly communicate Adjusted EBITDA results to our lenders since our loan covenants are based upon levels of Adjusted EBITDA achieved and to our board of directors and we discuss with the board our interpretation of such results. We also compare our Adjusted EBITDA performance against internal targets as a key factor in determining cash and equity bonus compensation for executives and other employees, largely because we believe that this measure is indicative of how the fundamental business is performing and being managed.

We also provide information relating to our Adjusted EBITDA so that analysts, investors and other interested persons have the same data that we use to assess our core operating performance. We believe that Adjusted EBITDA should be viewed only as a supplement to the GAAP financial information. We also believe, however, that providing this information in addition to, and together with, GAAP financial information provides a better understanding of our core operating performance and how management evaluates and measures our performance.

The following is a reconciliation of net income to Adjusted EBITDA for the following years (in thousands, except percentages):

	For the years ended December 31,		
	2022	2021	2020
Net income	\$ 411,744	\$ 203,247	\$ 134,837
Accretion of environmental liabilities	12,943	11,745	11,051
Stock-based compensation	26,844	18,839	18,502
Depreciation and amortization	347,594	298,135	292,915
Other (income) expense, net	(2,472)	515	290
Loss on early extinguishment of debt	422	—	—
(Gain) loss on sale of businesses	(8,864)	—	3,376
Interest expense, net of interest income	107,663	77,657	73,120
Provision for income taxes	126,254	66,468	39,713
Adjusted EBITDA	\$ 1,022,128	\$ 676,606	\$ 573,804
As a % of Direct revenues	19.8 %	17.8 %	18.3 %

Depreciation and Amortization

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Depreciation of fixed assets and amortization of landfills and finance leases	\$ 297,357	\$ 263,387	\$ 257,131	\$ 33,970	12.9 %	\$ 6,256	2.4 %
Permits and other intangibles amortization	50,237	34,748	35,784	15,489	44.6	(1,036)	(2.9)
Total depreciation and amortization	\$ 347,594	\$ 298,135	\$ 292,915	\$ 49,459	16.6 %	\$ 5,220	1.8 %

Depreciation and amortization for the year ended December 31, 2022 increased \$49.5 million from the comparable period in 2021 predominately due to the depreciation and amortization of the HydroChemPSC tangible and intangible assets which were acquired in the fourth quarter of 2021 as well as increased depreciation and amortization associated with the acquisition completed in the second quarter of 2022. For additional information regarding the acquired balances, see Note 4, "Business Combinations," to our consolidated financial statements included in Item 8 of this report.

Depreciation and amortization for the year ended December 31, 2021 increased \$5.2 million from the comparable period in 2020 due to the incremental depreciation and amortization of \$12.3 million associated with the HydroChemPSC tangible and intangible assets. This increase was partially offset by decreases from the prior year related to accelerating a landfill permit amortization in 2020 and certain assets becoming fully amortized.

Gain (Loss) on Sale of Businesses

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Gain (loss) on sale of businesses	\$ 8,864	\$ —	\$ (3,376)	\$ 8,864	100.0 %	\$ 3,376	(100.0)%

During the years ended December 31, 2022 and December 31, 2020, we recorded a \$8.9 million gain and a \$3.4 million loss, respectively, on the sale of non-core lines of businesses within our Environmental Services segment. No businesses were sold during the year ended December 31, 2021. For additional information regarding the gain on sale of business in 2022, see Note 5, "Disposition of Business," to our consolidated financial statements included in Item 8 of this report.

Other Income (Expense), net

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Other income (expense), net	\$ 2,472	\$ (515)	\$ (290)	\$ 2,987	(580.0)%	\$ (225)	77.6 %

For the year ended December 31, 2022, other income (expense), net increased \$3.0 million from 2021 primarily due to gains recognized on the sale of fixed assets. For the year ended December 31, 2021, other income (expense) remained relatively consistent with the prior year.

Provision for Income Taxes

(in thousands, except percentages)	For the years ended December 31,			2022 over 2021		2021 over 2020	
	2022	2021	2020	Change	% Change	Change	% Change
Provision for income taxes	\$ 126,254	\$ 66,468	\$ 39,713	\$ 59,786	89.9 %	\$ 26,755	67.4%
Effective tax rate	23.5 %	24.6 %	22.8 %	(1.1)%		1.8 %	

For the year ended December 31, 2022, the provision for income taxes increased \$59.8 million from the comparable period in 2021, largely due to the increase in pre-tax earnings. The effective tax rate for 2022 was 23.5% which is relatively consistent with the 2021 effective tax rate of 24.6%. For the year ended December 31, 2021, provision for income taxes increased \$26.8 million from the comparable period in 2020, largely due to the increase in pre-tax earnings. The effective tax rate for 2021 was 24.6% as compared to 22.8% in 2020.

The 2022 and 2021 effective tax rates have benefited from the utilization of previously unbenefited losses in certain of our Canadian entities for which we had previously recognized valuation allowances. These entities had historically generated operating losses but began to generate profits due to discrete events, including government subsidies and the gain on sale of a business, but more recently due to operational profits. As of December 31, 2022, these net operating losses have been nearly fully utilized and the remaining valuation allowance, which was nominal, was released. As such, the effective tax rate for 2023 is expected to increase.

Liquidity and Capital Resources

We assess our liquidity in terms of our ability to generate cash to fund our operating, investing and financing activities. Our primary ongoing cash requirements will be to fund operations, capital expenditures, interest payments and investments in line with our business strategy. We believe our future operating cash flows will be sufficient to meet our future operating and internal investing cash needs. We monitor our actual needs and forecasted cash flows, our liquidity and our capital resources, enabling us to plan our present needs and fund items that may arise during the year as a result of changing business conditions or opportunities. Furthermore, our existing cash balance and the availability of additional borrowings under our revolving credit facility provide additional potential sources of liquidity should they be required.

Summary of Cash Flow Activity

(in thousands)	For the years ended December 31,		
	2022	2021	2020
Net cash from operating activities	\$ 626,214	\$ 545,997	\$ 430,597
Net cash used in investing activities	(388,944)	(1,507,602)	(199,460)
Net cash (used in) from financing activities	(187,315)	898,249	(88,946)

Net cash from operating activities

Net cash from operating activities for the year ended December 31, 2022 was \$626.2 million, an increase of \$80.2 million compared to the year ended December 31, 2021. The operating cash flows were most notably impacted by greater levels of operating income partially offset by an increase in working capital caused by the recent significant growth in the business, strategic inventory management and higher payments for interest, income taxes and incentive compensation. With approximately 30% of our debt being subject to variable interest rates during 2022, the LIBOR rate increases during the year, as well as a full year of interest payments for the incremental debt issued in October of 2021, have resulted in the increase in interest payments when compared to the prior year. The increased tax payments were attributable to increased profits.

Net cash from operating activities for the year ended December 31, 2021 was \$546.0 million, an increase of \$115.4 million compared to the year ended December 31, 2020. The increase in operating cash flows was most notably impacted by the increase in operating income in 2021 when compared to 2020 and improved working capital management in 2021 offsetting higher cash taxes and payroll taxes paid in 2021. Cash income taxes paid, net of refunds, increased \$12.1 million due to a \$7.7 million tax refund received in 2020 associated with prior year amended returns previously under audit and higher pre-tax net income in 2021. Additionally, starting in the second quarter of 2020, we deferred certain US payroll tax remittances under the Coronavirus Aid, Relief and Economic Security (CARES) Act. For the year ended December 31, 2020, we had deferred a total of \$35.4 million. In 2021, we both remitted our normal 2021 US payroll taxes and half of the US payroll taxes we had previously deferred in 2020. In addition, HydroChemPSC had also elected this payroll deferral in 2020 and upon acquisition, and we recognized \$11.4 million of accrued 2020 payroll taxes and we repaid half prior to the end of 2021. The remaining payroll taxes deferred in 2020 under the CARES Act by both Clean Harbors and HydroChemPSC were remitted in 2022.

Net cash used in investing activities

Net cash used in investing activities for the year ended December 31, 2022 was \$388.9 million, a decrease of \$1,118.7 million compared to the year ended December 31, 2021. Cash paid for acquisitions, net reflected a decrease of \$1,167.0 million due to the acquisition of HydroChemPSC in 2021 for \$1.23 billion compared to \$86.3 million paid for acquisitions in 2022. Also contributing to the overall decrease was an \$18.8 million cash inflow from the net sale of marketable securities compared to a \$30.8 million cash outflow from the net purchase of marketable securities in 2021. This change in cash flows is largely due to timing. In 2022 we received \$16.8 million for the sale of a business which decreased the net cash used in investing activities for 2022. Amounts spent on additions to property, plant and equipment, net of proceeds from the sale and disposal of fixed assets increased \$116.6 million which partially offset these decreases. The higher spend on property, plant and equipment was driven by incremental spend on the new incinerator being built in Kimball, Nebraska as well as for the HydroChemPSC operations. Total spend in 2022 related to the construction of the new incinerator in Kimball, Nebraska was \$44.9 million.

Net cash used in investing activities for the year ended December 31, 2021 was \$1,507.6 million, an increase of \$1,308.1 million compared to the year ended December 31, 2020. This increase was due to the acquisition of HydroChemPSC for \$1.23 billion in 2021. Absent this significant investing cash outflow in 2021, the increase in net cash used in investing was \$77.7 million most notably due to a \$45.6 increase in additions to property, plant and equipment and a \$21.2 million increase in net purchases of marketable securities.

Net cash (used in) from financing activities

Net cash used in financing activities for the year ended December 31, 2022 was \$187.3 million as compared to net cash from financing activities of \$898.2 million for the year ended December 31, 2021. The primary drivers of this change were the \$995.0 million of cash received in 2021 from the issuance of debt, net of discount, which did not recur in 2022, and the \$108.1 million of higher principal payments of long term debt in 2022. In addition to \$10.0 million of incremental principal payments required for the aforementioned debt, in November 2022 we also repaid \$100.0 million of long term debt due in 2024. Partially offsetting these were higher deferred financing costs paid in 2021 associated with the debt issuance.

Net cash from financing activities for the year ended December 31, 2021 was \$898.2 million, as compared to net cash used in financing activities of \$88.9 million for the year ended December 31, 2020. The primary driver of this change was the \$995.0 million of cash received from the issuance of debt, net of discount. This cash inflow was partially offset by related

higher deferred financing costs paid in 2021. In addition, cash paid for repurchases of common stock in 2021 decreased \$20.4 million.

Adjusted Free Cash Flow

Management considers adjusted free cash flow to be a measure of liquidity which provides useful information to both management, creditors and investors about our financial strength and our ability to generate cash. Additionally, adjusted free cash flow is a metric on which a portion of management incentive compensation is based. We define adjusted free cash flow as net cash from operating activities excluding cash impacts of items derived from non-operating activities, less additions to property, plant and equipment plus proceeds from sales or disposals of fixed assets. Adjusted free cash flow should not be considered an alternative to net cash from operating activities or other measurements under GAAP. Adjusted free cash flow is not calculated identically by all companies, and therefore our measurements of adjusted free cash flow may not be comparable to similarly titled measures reported by other companies.

The following is a reconciliation from net cash from operating activities to adjusted free cash flow for the following periods (in thousands):

	For the years ended December 31,		
	2022	2021	2020
Net cash from operating activities	\$ 626,214	\$ 545,997	\$ 430,597
Additions to property, plant and equipment	(345,056)	(241,856)	(196,256)
Purchase and capital improvements of corporate headquarters	—	—	21,080
Proceeds from sale and disposal of fixed assets	8,779	22,156	9,623
Adjusted free cash flow	<u>\$ 289,937</u>	<u>\$ 326,297</u>	<u>\$ 265,044</u>

Summary of Capital Resources

At December 31, 2022, cash and cash equivalents and marketable securities totaled \$554.6 million, compared to \$534.3 million at December 31, 2021. At December 31, 2022, cash and cash equivalents held by our Canadian subsidiaries totaled \$37.4 million. At December 31, 2022, the cash and cash equivalents and marketable securities balance for our U.S. operations was \$517.2 million, and our U.S. operations had net cash from operating activities of \$455.3 million for the year ended December 31, 2022.

We also maintain a \$400.0 million revolving credit facility, of which approximately \$288.6 million was available to borrow at December 31, 2022.

Material Capital Requirements

Capital Expenditures

In 2022, our capital expenditures, net of disposals, were \$336.3 million. We anticipate that 2023 capital spending, net of disposals, will be in the range of \$400.0 million to \$420.0 million, including approximately \$90.0 million of capital spending for our new incinerator in Kimball, Nebraska. We anticipate that the capital spending will be funded by cash from our operations. Unanticipated changes in environmental regulations could require us to make significant capital expenditures for our facilities and adversely affect our results of operations and cash flow.

In 2022, we continued with the construction of our new incinerator at our Kimball, Nebraska facility, which we intend to complete in early 2025. The current capital expenditure estimate for this project is approximately \$180.0 million, of which \$44.9 million was spent in 2022. As of December 30, 2022, a total of \$52.1 million has been spent on the project.

Financing Arrangements

As of December 31, 2022, our financing arrangements included (i) \$614.0 million of senior secured term loans due 2024 ("2024 Term Loans"), (ii) \$545.0 million of 4.875% senior unsecured notes due 2027, (iii) \$990.0 million of senior secured term loans due 2028 ("2028 Term Loans") and (iv) \$300.0 million of 5.125% senior unsecured notes due 2029. We also maintain our \$400.0 million revolving credit facility, of which nothing was owed as of December 31, 2022.

The material terms of these arrangements are discussed further in Note 12, "Financing Arrangements," to our consolidated financial statements included in Item 8 of this report. In January 2023, we issued \$500.0 million principal amount of 6.375% senior notes due 2031. The net proceeds of the issuance, along with a \$114.0 million borrowing under our existing revolving credit facility and cash on hand, were used to repay the aggregate principal balance of our 2024 Term Loans.

After taking these transactions into account, in 2023, we expect to use available cash to pay \$10.0 million in principal payments on the 2028 Term Loans and an estimated \$110.0 million in interest payments on the entire portfolio of financing arrangements. This estimate assumes that variable rates remain consistent with the rates as of December 31, 2022. We expect that future payments of interest will continue to be funded through cash flows from operations and any principal payments will either be funded through available cash from operations or through available financing alternatives. We will continue to monitor our debt instruments and evaluate opportunities where it may be beneficial to refinance or reallocate the portfolio.

As of December 31, 2022, we were in compliance with the covenants of all of our debt agreements, and we believe we will continue to meet such covenants.

Environmental Liabilities

(in thousands)	As of December 31,		2022 over 2021	
	2022	2021	Change	% Change
Closure and post-closure liabilities	\$ 118,801	\$ 99,103	\$ 19,698	19.9 %
Remedial liabilities	116,290	111,873	4,417	3.9 %
Total environmental liabilities	\$ 235,091	\$ 210,976	\$ 24,115	11.4 %

Total environmental liabilities as of December 31, 2022 were \$235.1 million, an increase of \$24.1 million compared to December 31, 2021. This increase was primarily due to annual accretion of \$12.9 million, new liabilities, including those assumed through acquisition of \$11.9 million, and changes in environmental liability estimates resulting in charges to the consolidated statement of operations and balance sheet of \$8.3 million and \$5.0 million, respectively. Expenditures of \$13.9 million made during 2022 partially offset these increases in the environmental liabilities.

We anticipate our environmental liabilities, substantially all of which we assumed in connection with our acquisitions, will be payable over many years and that cash flow from operations will be sufficient to fund the payment of such liabilities when required. We have included a schedule of our expected payments as of December 31, 2022, in Note 10, "Closure and Post-closure Liabilities" and Note 11, "Remedial Liabilities," to our consolidated financial statements included in Item 8 of this report.

Events not anticipated (such as future changes in environmental laws and regulations) could require that payments to satisfy our environmental liabilities be made earlier or in greater amounts than currently anticipated, which could adversely affect our results of operations, cash flow and financial condition. Conversely, the development of new treatment technologies or other circumstances may arise in the future which may reduce amounts ultimately paid.

Letters of Credit

We obtain standby letters of credit as security for financial assurances we have been required to provide to regulatory bodies for our hazardous waste facilities and which would be called only in the event that we fail to satisfy closure, post-closure and other obligations under the permits issued by those regulatory bodies for such licensed facilities. As of December 31, 2022, there were \$111.4 million outstanding letters of credit. See Note 12, "Financing Arrangements," to our consolidated financial statements included in Item 8 of this report for further discussion of our standby letters of credit and other financing arrangements.

Critical Accounting Estimates

Our consolidated financial statements are based on the application of GAAP, which requires us to make estimates and judgments that affect the reported amounts of our assets, liabilities, revenues and expenses and related disclosures of contingent liabilities. These estimates and judgments cannot be determined with certainty. Actual results could differ from those estimates, and any such differences may be material to our consolidated financial statements. We believe the estimates set forth below may involve a higher degree of judgment and complexity in their application than our other accounting estimates and represent the critical accounting estimates used in the preparation of our consolidated financial statements. Our accounting policies related to these estimates are discussed in Note 2, "Significant Accounting Policies," to our consolidated financial statements included in Item 8 of this report.

We believe our judgments related to these accounting estimates are appropriate. However, if different assumptions or conditions were to prevail, the results could be materially different from the amounts recorded. Our management reviews critical accounting estimates with the Audit Committee of our Board of Directors on an ongoing basis and as needed prior to the release of our annual financial statements.

Landfill Accounting. We amortize landfill improvements and certain landfill-related permits over their estimated useful lives. The units-of-consumption method is used to amortize land, landfill cell construction, asset retirement costs and remaining landfill cells and sites. We also utilize the units-of-consumption method to record closure and post-closure obligations for landfill cells and sites. Under the units-of-consumption method, we include future estimated construction and asset retirement costs, as well as costs incurred to date, in the amortization base of the landfill assets. Additionally, where appropriate, as discussed below, we include probable expansion airspace yet to be permitted in the calculation of the total remaining useful life of the landfill. If we determine that expansion capacity should no longer be considered in calculating the recoverability of a landfill asset, we may be required to recognize an asset impairment or incur significantly higher amortization expense. If at any time we decide to abandon the expansion effort, the capitalized costs related to the expansion effort are expensed immediately.

Landfill Assets. Landfill assets include the costs of landfill site acquisition, permits and cell construction incurred to date. These amounts are amortized under the units-of-consumption method such that the asset is completely amortized when the landfill ceases accepting waste. Changes in the determination of when the landfill will cease accepting waste, either through a business decision by management, determination that expansion capacity should no longer be considered probable or changes in estimates on annual airspace consumption, will impact the amortization expense of the landfill assets.

Landfill Capacity. Landfill capacity, which is the basis for the amortization of landfill assets and for the accrual of final closure and post-closure obligations, represents total permitted airspace plus unpermitted airspace that management believes is probable of ultimately being permitted based on established criteria. As of December 31, 2022, there were no unpermitted expansions included in management's landfill calculation. If actual expansion airspace is significantly different from management's estimate of expansion airspace, the amortization rates used for the units-of-consumption method would change, therefore impacting our profitability. If we determine that there is less actual expansion airspace at a landfill, this would increase amortization expense recorded and decrease profitability, while if we determine a landfill has more actual expansion airspace, amortization expense would decrease and profitability would increase.

Landfill Final Closure and Post-Closure Liabilities. Landfill final closure and post-closure liabilities recorded at December 31, 2022 and 2021 were \$62.3 million and \$53.4 million, respectively. We have material financial commitments for the costs associated with requirements of the EPA and the comparable regulatory agency in Canada for landfill final closure and post-closure activities. In the United States, the landfill final closure and post-closure requirements are established under the standards of the EPA, and are implemented and applied on a state-by-state basis. We develop estimates for the cost of these activities based on our evaluation of site-specific facts and circumstances, such as the existence of structures and other landfill improvements that would need to be dismantled, the amount of groundwater monitoring and leachate management expected to be performed and the length of the post-closure period as determined by the applicable regulatory agency. Included in our cost estimates are our interpretation of current regulatory requirements and proposed regulatory changes. These cost estimates may change in the future due to various circumstances including, but not limited to, permit modifications, changes in legislation or regulations, technological changes and results of environmental studies. We perform zero-based reviews of these estimated liabilities based upon a planned schedule, typically every five years or sooner if the occurrence of a significant event is likely to change the timing or amount of the currently estimated expenditures. We consider a significant event to be a new regulation or an amendment to an existing regulation, a new permit or modification to an existing permit or a change in the market price of a significant cost item. Our cost estimates are calculated using internal sources as well as input from third-party experts. These costs are measured at estimated fair value using present value techniques, and therefore changes in the estimated timing of closure and post-closure activities would affect the liability, the value of the related asset and our results of operations.

Final closure costs are the costs incurred after the site ceases to accept waste, but before the landfill is certified as closed by the applicable state or provincial regulatory agency. These costs generally include the costs required for capping the final cell of the landfill (if not included in cell closure), dismantling certain structures for landfills and other landfill improvements and regulation-mandated groundwater monitoring and leachate management. Post-closure costs involve the maintenance and monitoring of a landfill site that has been certified closed by the applicable regulatory agency, generally including groundwater monitoring and leachate management. Regulatory post-closure periods are generally 30 years after landfill closure. Final closure and post-closure obligations are accrued on a units-of-consumption basis, such that the present value of the final closure and post-closure obligations are fully accrued at the date the landfill ceases accepting waste. Changes in the determination of when the landfill will cease accepting waste, either through a business decision by management, determination that expansion capacity should no longer be considered probable or changes in estimates on annual airspace consumption, will accelerate accrual of these costs.

Non-Landfill Closure and Post-Closure Liabilities. Non-landfill closure and post-closure liabilities recorded at December 31, 2022 and 2021 were \$56.6 million and \$45.7 million, respectively. We base estimates for non-landfill closure and post-closure liabilities on our interpretations of existing permit and regulatory requirements for closure and post-closure maintenance and monitoring. Our cost estimates are calculated using internal sources as well as input from third-party experts. We estimate when future operations will cease and inflate the current cost of closing the non-landfill facility using the

appropriate inflation rate and then discounting the future value to arrive at an estimated present value of closure and post-closure costs. The estimates for non-landfill closure and post-closure liabilities are inherently uncertain due to the possibility that permit and regulatory requirements will change in the future, impacting the estimation of total costs and the timing of the expenditures. We review non-landfill closure and post-closure liabilities for changes to key assumptions that would impact the amount of the recorded liabilities. Changes that would prompt us to revise a liability estimate include changes in legal requirements that impact our expected closure plan or scope of work, in the market price of a significant cost item, in estimates as to when future operations may cease or in the expected timing of the cost expenditures. Changes in estimates for non-landfill closure and post-closure events immediately impact the required liability and the value of the corresponding asset. If a change is made to a fully-amortized asset, the adjustment is charged immediately to expense. When a change in estimate relates to an asset that has not been fully amortized, the adjustment to the asset is recognized in income prospectively as a component of amortization. Historically, material changes to non-landfill closure and post-closure estimates have been infrequent. See Note 10, "Closure and Post-Closure Liabilities," to our consolidated financial statements included in Item 8 of this report for the changes to these Landfill and Non-Landfill Closure and Post-Closure liabilities during the years ended December 31, 2022 and 2021.

Remedial Liabilities. Remedial liabilities recorded at December 31, 2022 and 2021 were \$116.3 million and \$111.9 million, respectively. Remedial liabilities are obligations to investigate, alleviate and/or eliminate the effects of a release (or threat of a release) of hazardous substances into the environment and may also include corrective action under RCRA or the corresponding Canadian regulations. Our remediation obligations can be further characterized as legal, Superfund, long-term maintenance and one-time projects. Legal liabilities are typically comprised of litigation matters that involve potential liability for certain aspects of environmental cleanup and can include third-party claims for property damage or bodily injury allegedly arising from or caused by exposure to hazardous substances originating from our activities or operations or, in certain cases, from the action or inaction of other persons or companies. Superfund liabilities are typically claims alleging that we are a potentially responsible party ("PRP") and/or are potentially liable for environmental response, removal, remediation and cleanup costs at/or from either a facility we own or a site owned by a third-party. Long-term maintenance liabilities include the costs of groundwater monitoring, treatment system operations, permit fees and facility maintenance for inactive operations. One-time projects liabilities include the costs necessary to comply with regulatory requirements for the removal or treatment of contaminated materials.

Amounts recorded related to the costs required to remediate a location are determined by internal engineers and operational personnel and incorporate input from external third parties. The estimates consider such factors as the nature and extent of environmental contamination (if any); the terms of applicable permits and agreements with regulatory authorities as to cleanup procedures and whether modifications to such permits and agreements will likely need to be negotiated; the cost of performing anticipated cleanup activities based upon current technology; and in the case of Superfund and other sites where other parties will also be responsible for a portion of the cleanup costs, the likely allocation of such costs and the ability of such other parties to pay their share. Each quarter, our management discusses if any events have occurred or milestones have been met that would warrant the creation of a new remedial liability or the revision of an existing remedial liability. Such events or milestones include identification and verification as a PRP, receipt of a unilateral administrative order under Superfund or requirement for RCRA interim corrective measures, completion of the feasibility study under Superfund or the corrective measures study under RCRA, new or modifications to existing permits, changes in property use or a change in the market price of a significant cost item. Remedial liabilities are inherently difficult to estimate and there is a risk that the actual quantities of contaminants could differ from the results of the site investigation, which could materially impact the amount of our liability. It is also possible that chosen methods of remedial solutions will not be successful and funds will be required for alternative solutions.

Remedial liabilities are discounted when the timing of the payments is estimable and the amounts are determinable, with the exception of remedial liabilities assumed as part of an acquisition that are measured at fair value at the acquisition date.

We establish reserves for estimated environmental liabilities based on acceptable technologies when we determine the liability is appropriate. Introductions of new technologies are subject to successful demonstration of the effectiveness of the alternative technology and regulatory approval. We routinely review and evaluate the sites for which we have established estimated environmental liabilities reserves to determine if there should be changes in the established reserves. The changes in estimates are reflected as adjustments in the ordinary course of business in the period when we determine that an adjustment is appropriate as new information becomes available. Upon demonstration of the effectiveness of the alternative technology and applicable regulatory approval, we update our estimated cost of remediating the affected sites. See Note 11, "Remedial Liabilities," to our consolidated financial statements included in Item 8 of this report for the changes to the remedial liabilities during the years ended December 31, 2022 and 2021. The changes in our estimates have not been material.

Acquisitions. In accordance with the acquisition method of accounting, the purchase price paid for an acquisition is allocated to the assets and liabilities acquired based upon their estimated fair values as of the acquisition date, with the excess of

the purchase price over the net assets acquired recorded as goodwill. Intangible assets acquired in a business combination may consist of patents, trademarks and tradenames, developed technology, customer relationships and other intangibles. The fair value for acquired customer relationship intangibles is determined as of the acquisition date based on estimates and judgments regarding expectations for the future after-tax cash flows arising from the follow-on revenue from customer relationships that existed on the acquisition date over their estimated lives, including the probability of expected future revenue from these customers, less a contributory assets charge, all of which is discounted to present value. The fair value of the trademark and tradename intangible assets as well as the developed technology intangible assets are determined utilizing the relief from royalty method which is a form of the income approach. Under this method, a royalty rate based on observed market royalties is applied to projected revenue supporting the tradename or technology and discounted to present value using an appropriate discount rate. Tangible assets acquired in a business combination include real estate and personal property. When determining the fair value of tangible personal property acquired, we must estimate the cost to replace the asset with a new asset taking into consideration such factors as age, condition and the economic useful life of the asset. Valuations are performed by management or third-party valuation specialists under management's supervision, where appropriate.

Goodwill and Other Long-Lived Assets. We have a significant amount of goodwill associated with previous acquisitions. We conducted our annual impairment test of goodwill as of December 31, 2022 in which we assessed the recoverability of the goodwill associated with our Environmental Sales and Service, Environmental Facilities and Safety-Kleen Sustainability Solutions reporting units. We compared the fair value of the reporting units to their respective carrying values and determined that no adjustments to the carrying value of goodwill were necessary. In all cases, the estimated fair value of each reporting unit significantly exceeded its carrying value. We measure fair value for all of our reporting units using an income approach (a discounted cash flow analysis) which incorporates several estimates and assumptions with varying degrees of uncertainty, including estimated revenue growth and operational performance. Such assumptions are subject to variability from year to year and are directly impacted by, among other things, macroeconomic conditions. The discounted cash flow analyses include estimated cash flows for a discrete period and for a terminal period thereafter. We corroborate our estimates of fair values by also considering other factors such as the fair value of comparable companies to businesses contained in our reporting units, as well as performing a reconciliation of the total estimated fair value of all reporting units to our market capitalization.

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of December 31, or when events or changes in the business environment indicate that the carrying value may be impaired. This review is performed by comparing the fair value of an indefinite lived intangible asset to its carrying value. We measure fair value for our indefinite lived intangible assets using an income approach (a discounted cash flow analysis) which incorporates several estimates and assumptions with varying degrees of uncertainty, including estimates of future cash flows associated with the intangible assets. If the fair value is less than the carrying value, the impairment loss is measured as the excess of the carrying value of the asset over its fair value. The estimated fair values of our indefinite-lived intangibles exceeded their carrying values at December 31, 2022.

Our long-lived assets are carried on our financial statements based on their cost less accumulated depreciation or amortization. Long-lived assets with finite lives are reviewed for impairment whenever events or changes in circumstances indicate that their carrying value may not be entirely recoverable. When such factors and circumstances exist, our management compares the estimated undiscounted future cash flows associated with the related asset or group of assets to the respective carrying amounts. The cash flows used in this analysis include assumptions and estimates with varying degrees of uncertainty, including estimated revenue growth and operational performance. An impairment loss, if any, would be measured as the excess of the carrying amount over the fair value of the asset and recorded in the period in which the determination is made. Any resulting impairment losses recorded by us would have an adverse impact on our results of operations.

Our future cash flow assumptions and conclusions with respect to goodwill and asset impairments could be impacted by changes arising from (i) a sustained period of economic and industrial slowdowns, (ii) continued reduced demand for base and blended oil products and an inability to price our oil related products and services to maintain profitability, (iii) inability to scale our operations and implement cost reduction efforts in light of reduced demand or (iv) a significant decline in our share price for a sustained period of time. These factors, among others, could significantly impact the impairment analysis and may result in future goodwill or asset impairment charges that, if incurred, could have a material adverse effect on our financial condition and results of operations.

Legal Matters. As described in Note 18, "Commitments and Contingencies," to our consolidated financial statements included in Item 8 of this report, we are subject to legal proceedings which relate to our past acquisitions or which have arisen in the ordinary course of business. We accrue for liabilities associated with these matters when it is probable that a liability has been incurred and the amount can be reasonably estimated. The most likely cost to be incurred is accrued based on an evaluation of then currently available facts with respect to each matter. When no amount within a range of estimates is more likely, the minimum is accrued. As of December 31, 2022, we had reserves of \$37.1 million consisting of (i) \$24.1 million related to pending legal or administrative proceedings, including Superfund liabilities, which were included in remedial

liabilities on the consolidated balance sheets and (ii) \$13.0 million primarily related to legal claims as well as federal, state and provincial enforcement actions, which were included in accrued expenses on the consolidated balance sheets. The inherent uncertainty related to the outcome of these matters can result in amounts materially different from any provisions made with respect to their resolution. In management's opinion, it is not reasonably possible that the potential liability in excess of what is recorded, if any, that may result from these actions, either individually or collectively, will have a material effect on our financial position, results of operations or cash flows.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

In the normal course of business, we are exposed to market risks, including changes in interest rates and certain foreign currency rates, primarily relating to the Canadian dollar.

Interest Rate Risk

Our philosophy in managing interest rate risk is to maintain a debt portfolio inclusive of both variable and fixed-rate debt so as to limit our exposure to interest rate volatility. As of December 31, 2022, before taking into account any interest rate swap agreements then in place, we held \$1.6 billion of variable rate debt under our senior secured term loans due 2024 and 2028. The senior secured term loans due 2024 ("2024 Term Loans") paid interest at Eurodollar rate (one-month LIBOR at December 31, 2022) plus 1.75%. The senior secured term loans due 2028 ("2028 Term Loans") also paid interest at the Eurodollar rate (currently one-month LIBOR) plus 2.00%.

To hedge interest rate exposure on a portion of this outstanding variable debt, we entered into interest rate swap agreements. Under the terms of the interest rate swaps entered into in 2018 ("2018 Swaps"), which hedge the interest rate exposure of the 2024 Term Loans we receive interest based on the one-month LIBOR index and we pay interest at a weighted average rate of approximately 2.92% on a notional amount of \$350.0 million. When combined with the 1.75% interest rate margin for Eurocurrency borrowings under the 2024 Term Loans, the effective annual interest rate on such \$350.0 million aggregate principal amount of 2024 Term Loans is 4.67%. The remaining balance of the 2024 Term Loans subject to interest rate risk as of December 31, 2022 was \$264.0 million.

Under the terms of the interest rate swaps entered into in 2022 ("2022 Swaps"), which hedge the interest rate exposure on the 2028 Term Loans, we receive interest based on the variable rates on the 2028 Term Loans and we pay a fixed amount of interest. For more information on the structure of the 2028 Term Loans or 2022 Swaps, see Note 12, "Financing Arrangements," to our consolidated financial statements included in Item 8 of this report. As of December 31, 2022, the Company received interest based on the one-month LIBOR index and paid interest at a weighted average rate of approximately 0.931% on a notional amount of \$600.0 million. When combined with the 2.00% interest rate margin for Eurocurrency borrowings under the 2028 Term Loans, the effective annual interest rate on such \$600.0 million aggregate principal amount of the 2028 Term Loans was 2.931%. The remaining balance of the 2028 Term Loans subject to interest rate risk as of December 31, 2022 was \$390.0 million.

We designated our interest rate swap agreements as effective cash flow hedges at inception, and therefore the change in fair value is recorded in stockholders' equity as a component of accumulated other comprehensive loss and included in interest expense at the same time as interest expense is affected by the hedged transactions. Differences paid or received over the life of the agreements are recorded as additions to or reductions of interest expense on the underlying debt.

After taking into account the 2018 Swaps and the 2022 Swaps, as of December 31, 2022, we fixed our interest rate exposure on \$950.0 million of our debt, leaving \$654.0 million of debt subject to interest rate risk.

The following table provides information regarding our total borrowings at December 31, 2022 (in thousands):

Scheduled Maturity Dates	2023	2024	2025	2026	2027	Thereafter	Total
Senior secured term loans due 2024	\$ —	\$ 613,975	\$ —	\$ —	\$ —	\$ —	\$ 613,975
Senior secured term loans due 2028	10,000	10,000	10,000	10,000	10,000	940,000	990,000
Unsecured senior notes due 2027	—	—	—	—	545,000	—	545,000
Unsecured senior notes due 2029	—	—	—	—	—	300,000	300,000
Long term debt, at par	\$ 10,000	\$ 623,975	\$ 10,000	\$ 10,000	\$ 555,000	\$ 1,240,000	\$ 2,448,975

The interest rate on the \$545.0 million senior unsecured notes due July 15, 2027 is fixed at 4.875%. Interest payments on this debt are due semiannually on January 15 and July 15 in the amount of \$13.3 million upon each date. The interest rate on the \$300.0 million senior unsecured notes due July 15, 2029 is fixed at 5.125%. Interest payments on these \$300.0 million senior unsecured notes are also due semiannually on January 15 and July 15 in the amount of \$7.7 million upon each date.

In January 2023, we issued \$500.0 million principal amount of 6.375% unsecured senior notes due February 1, 2031 ("2031 Notes"). Interest payments on this debt are due semiannually on February 1 and August 1 in the amount of \$15.9 million upon each date starting in August of 2023.

The net proceeds of issuing the 2031 Notes, along with a \$114.0 million borrowing under our existing revolving credit facility and cash on hand, were used to repay the aggregate principal balance of our 2024 Term Loans. In connection with this,

we also terminated our 2018 Swaps and received a cash payment of \$8.7 million from the counterparties to the 2018 Swaps relating to such termination.

Subsequent to these events in January 2023, which are also detailed in Note 12, "Financing Arrangements," to our consolidated financial statements included in Item 8 of this report, our outstanding debt subject to interest rate risk was limited to \$390.0 million of the 2028 Term Loans and the \$114.0 million borrowing under our existing revolving credit facility, the latter of which bears interest at a rate of LIBOR plus 1.50% and is payable monthly. Should the average interest rate on our total variable rate debt of \$504.0 million change by 100 basis points, we estimate that our average annual interest expense would change by up to approximately \$5.8 million.

After that borrowing of \$114.0 million, we now have approximately \$174.6 million of additional capacity available under our revolving credit facility when taking into account the \$400.0 million limit and the \$111.4 million of letters of credit outstanding. This additional capacity would be subject to interest rate variability should we decide to borrow additional funds under our revolving credit facility.

Foreign Currency Risk

We view our investment in our foreign subsidiaries as long-term; thus, we have not entered into any hedging transactions between any two foreign currencies or between any of the foreign currencies in which we transact business and the U.S. Dollar. Given our significant investment in Canada and the fluctuations that have and can occur between the U.S. Dollar and Canadian Dollar exchange rates, significant movements in cumulative translation adjustment amounts recorded as a component of other comprehensive loss can occur in any given period.

During 2022, our Canadian subsidiaries transacted a portion of their business in U.S. Dollars and at any period end had cash on deposit in U.S. Dollars and outstanding U.S. Dollar accounts receivable and payable balances related to their operations. Those U.S. denominated balances are subject to foreign currency gains or losses. Exchange rate movements also affect the translation of Canadian generated profits and losses into U.S. Dollars. Had the Canadian Dollar been 10.0% stronger or weaker against the U.S. Dollar, we would have reported increased or decreased net income of \$12.8 million for the year ended December 31, 2022.

TEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**INDEX TO FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Clean Harbors, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Clean Harbors, Inc. and subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income, cash flows and stockholders' equity, for each of the three years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements 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.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 1, 2023, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the 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.

Remedial Liabilities - Refer to Note 2 and Note 11 to the financial statements

Critical Audit Matter Description

Remedial liabilities include the costs of removal or containment of contaminated material, the treatment of potentially contaminated groundwater and maintenance and monitoring costs necessary to comply with regulatory requirements. The estimate of remedial liabilities involves an analysis of numerous factors that are inherently difficult to estimate and involve a significant amount of judgment. The Company routinely reviews and evaluates the sites for which remedial liabilities have been recognized to determine if there should be changes in the cost estimates. As a result, the valuation of liabilities is subject to material changes as additional information becomes available, particularly as it relates to changes in technologies and changes in laws and regulations that govern the remediation efforts.

Total remedial liabilities recorded as of December 31, 2022 were \$116.3 million.

Given the subjectivity and judgment involved in measuring remedial liabilities, auditing remedial liabilities involved especially subjective judgment and an increased extent of effort, including the need to involve our specialists who have expertise in environmental remediation.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to remedial liabilities included the following, among others:

- We tested the effectiveness of controls related to the recognition and measurement of remedial liabilities, including those controls over changes in estimates.
- We evaluated management’s ability to accurately forecast future cash flows by comparing actual results to management’s historical forecasts through retrospective reviews.
- We evaluated the methods and assumptions used by management to estimate the remedial liabilities by confirming specific facts and circumstances related to a selection of sites with project managers and other Company personnel responsible for monitoring these sites, including legal counsel.
- With the assistance of auditor specialists who have expertise in environmental matters and specialized skills and training, we evaluated the reasonableness of the Company’s estimates by:
 - Searching for information in the public domain for completeness of sites identified for remediation.
 - Assessing the completeness of the Company’s costs estimates for a selection of sites, specifically, comparing the costs estimates to relevant regulatory guidelines and specifications.
 - Testing the accuracy of the amounts recorded for a selection of sites, specifically, verifying the mathematical accuracy of the calculation, agreeing cost components to supporting documents, and/or developing an independent range of cost estimates.

/s/ Deloitte & Touche LLP

Boston, Massachusetts
March 1, 2023

We have served as the Company's auditor since 2005.

CLEAN HARBORS, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS
(dollars in thousands)

	As of December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 492,603	\$ 452,575
Short-term marketable securities	62,033	81,724
Accounts receivable, net of allowances aggregating \$45,253 and \$40,140, respectively	964,603	792,734
Unbilled accounts receivable	107,010	94,963
Inventories and supplies	324,994	250,692
Prepaid expenses and other current assets	82,518	68,483
Total current assets	2,033,761	1,741,171
Property, plant and equipment, net	1,980,302	1,863,175
Other assets:		
Operating lease right-of-use assets	166,181	161,797
Goodwill	1,246,878	1,227,042
Permits and other intangibles, net	620,782	644,912
Other	81,803	15,602
Total other assets	2,115,644	2,049,353
Total assets	\$ 6,129,707	\$ 5,653,699
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	\$ 10,000	\$ 17,535
Accounts payable	446,629	359,866
Deferred revenue	94,094	83,749
Accrued expenses and other current liabilities	396,716	391,414
Current portion of closure, post-closure and remedial liabilities	23,123	25,136
Current portion of operating lease liabilities	49,532	47,614
Total current liabilities	1,020,094	925,314
Other liabilities:		
Closure and post-closure liabilities, less current portion of \$13,205 and \$12,015, respectively	105,596	87,088
Remedial liabilities, less current portion of \$9,918 and \$13,121, respectively	106,372	98,752
Long-term debt, less current portion	2,414,828	2,517,024
Operating lease liabilities, less current portion	119,259	117,991
Deferred tax liabilities	350,389	314,853
Other long-term liabilities	90,847	78,790
Total other liabilities	3,187,291	3,214,498
Commitments and contingent liabilities (See Note 18)		
Stockholders' equity:		
Common stock, \$0.01 par value:		
Authorized 80,000,000 shares; issued and outstanding 54,064,797 and 54,419,321 shares, respectively	541	544
Additional paid-in capital	504,240	536,377
Accumulated other comprehensive loss	(167,181)	(196,012)
Accumulated earnings	1,584,722	1,172,978
Total stockholders' equity	1,922,322	1,513,887
Total liabilities and stockholders' equity	\$ 6,129,707	\$ 5,653,699

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

CLEAN HARBORS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands except per share amounts)

	For the years ended December 31,		
	2022	2021	2020
Revenues:			
Service revenues	\$ 4,133,184	\$ 3,048,019	\$ 2,724,584
Product revenues	1,033,421	757,547	419,513
Total revenues	<u>5,166,605</u>	<u>3,805,566</u>	<u>3,144,097</u>
Cost of revenues: (exclusive of items shown separately below)			
Service revenues	2,892,726	2,105,043	1,786,718
Product revenues	651,204	504,794	351,033
Total cost of revenues	<u>3,543,930</u>	<u>2,609,837</u>	<u>2,137,751</u>
Selling, general and administrative expenses	627,391	537,962	451,044
Accretion of environmental liabilities	12,943	11,745	11,051
Depreciation and amortization	<u>347,594</u>	<u>298,135</u>	<u>292,915</u>
Income from operations	634,747	347,887	251,336
Other income (expense), net	2,472	(515)	(290)
Loss on early extinguishment of debt	(422)	—	—
Gain (loss) on sale of businesses	8,864	—	(3,376)
Interest expense, net of interest income of \$4,607, \$2,218 and \$3,462, respectively	<u>(107,663)</u>	<u>(77,657)</u>	<u>(73,120)</u>
Income before provision for income taxes	537,998	269,715	174,550
Provision for income taxes	126,254	66,468	39,713
Net income	<u>\$ 411,744</u>	<u>\$ 203,247</u>	<u>\$ 134,837</u>
Earnings per share:			
Basic	<u>\$ 7.59</u>	<u>\$ 3.73</u>	<u>\$ 2.43</u>
Diluted	<u>\$ 7.56</u>	<u>\$ 3.71</u>	<u>\$ 2.42</u>
Shares used to compute earnings per share — Basic	<u>54,223</u>	<u>54,514</u>	<u>55,479</u>
Shares used to compute earnings per share — Diluted	<u>54,487</u>	<u>54,761</u>	<u>55,690</u>

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

CLEAN HARBORS, INC. AND SUBSIDIARIES**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**
(in thousands)

	For the years ended December 31,		
	2022	2021	2020
Net income	\$ 411,744	\$ 203,247	\$ 134,837
Other comprehensive income (loss), net of tax:			
Unrealized loss on available-for-sale securities	(413)	(285)	(8)
Unrealized gain (loss) on fair value of interest rate hedge	61,124	6,235	(20,970)
Reclassification adjustment for interest rate hedge amounts realized in net income	(683)	10,011	8,180
Unfunded pension liability	318	1,094	(189)
Foreign currency translation adjustments	(31,515)	(1,590)	11,561
Other comprehensive income (loss), net of tax	28,831	15,465	(1,426)
Comprehensive income	<u>\$ 440,575</u>	<u>\$ 218,712</u>	<u>\$ 133,411</u>

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

CLEAN HARBORS, INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	For the years ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net income	\$ 411,744	\$ 203,247	\$ 134,837
Adjustments to reconcile net income to net cash from operating activities:			
Depreciation and amortization	347,594	298,135	292,915
Allowance for doubtful accounts	7,783	8,018	10,133
Amortization of deferred financing costs and debt discount	6,301	4,245	3,666
Accretion of environmental liabilities	12,943	11,745	11,051
Changes in environmental liability estimates	8,272	2,979	10,698
Deferred income taxes	17,549	1,482	(9,748)
Other (income) expense, net	(2,472)	515	290
Stock-based compensation	26,844	18,839	18,502
(Gain) loss on sale of businesses	(8,864)	—	3,376
Loss on early extinguishment of debt	422	—	—
Environmental expenditures	(13,946)	(15,506)	(12,401)
Changes in assets and liabilities, net of acquisitions:			
Accounts receivable and unbilled accounts receivable	(201,087)	(96,551)	22,422
Inventories and supplies	(74,547)	(31,689)	(7,933)
Other current and non-current assets	(17,303)	9,268	(12,602)
Accounts payable	74,460	108,398	(80,328)
Other current and long-term liabilities	30,521	22,872	45,719
Net cash from operating activities	<u>626,214</u>	<u>545,997</u>	<u>430,597</u>
Cash flows used in investing activities:			
Additions to property, plant and equipment	(345,056)	(241,856)	(196,256)
Proceeds from sale and disposal of fixed assets	8,779	22,156	9,623
Acquisitions, net of cash acquired	(86,278)	(1,253,232)	(8,839)
Additions to intangible assets including costs to obtain or renew permits	(1,966)	(3,848)	(2,029)
Purchases of available-for-sale securities	(49,845)	(129,234)	(70,891)
Proceeds from sale of available-for-sale securities	68,611	98,412	61,220
Proceeds from sale of businesses, net of transactional costs	16,811	—	7,712
Net cash used in investing activities	<u>(388,944)</u>	<u>(1,507,602)</u>	<u>(199,460)</u>
Cash flows (used in) from financing activities:			
Change in uncashed checks	552	(1,806)	5,404
Tax payments related to withholdings on vested restricted stock	(8,801)	(10,805)	(5,331)
Repurchases of common stock	(50,183)	(54,410)	(74,844)
Deferred financing costs paid	(410)	(13,737)	(2,171)
Payments on finance leases	(12,821)	(8,458)	(4,469)
Principal payments on debt	(115,652)	(7,535)	(7,535)
Proceeds from issuance of debt, net of discount	—	995,000	—
Borrowings from revolving credit facility	—	—	150,000
Payments on revolving credit facility	—	—	(150,000)
Net cash (used in) from financing activities	<u>(187,315)</u>	<u>898,249</u>	<u>(88,946)</u>
Effect of exchange rate change on cash	(9,927)	(3,170)	4,919
Increase (decrease) in cash and cash equivalents	40,028	(66,526)	147,110
Cash and cash equivalents, beginning of year	452,575	519,101	371,991
Cash and cash equivalents, end of year	<u>\$ 492,603</u>	<u>\$ 452,575</u>	<u>\$ 519,101</u>
Supplemental information:			
Cash payments for interest and income taxes:			
Interest paid	\$ 105,643	\$ 73,440	\$ 72,535
Income taxes paid, net of refunds	78,526	65,192	53,123
Non-cash investing activities:			
Property, plant and equipment accrued	30,950	19,264	3,536
Remedial liability assumed in acquisition of property, plant and equipment	8,092	—	—

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

CLEAN HARBORS, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	<u>Common Stock</u>		<u>Additional Paid-in Capital</u>	<u>Accumulated Other Comprehensive Loss</u>	<u>Accumulated Earnings</u>	<u>Total Stockholders' Equity</u>
	<u>Number of Shares</u>	<u>\$0.01 Par Value</u>				
Balance at January 1, 2020	55,798	\$ 558	\$ 644,412	\$ (210,051)	\$ 834,894	\$ 1,269,813
Net income	—	—	—	—	134,837	134,837
Other comprehensive loss	—	—	—	(1,426)	—	(1,426)
Stock-based compensation	—	—	18,502	—	—	18,502
Issuance of common stock for restricted share vesting, net of employee tax withholdings	179	2	(5,333)	—	—	(5,331)
Repurchases of common stock	(1,204)	(12)	(74,832)	—	—	(74,844)
Balance at December 31, 2020	54,773	548	582,749	(211,477)	969,731	1,341,551
Net income	—	—	—	—	203,247	203,247
Other comprehensive income	—	—	—	15,465	—	15,465
Stock-based compensation	—	—	18,839	—	—	18,839
Issuance of common stock for restricted share vesting, net of employee tax withholdings	235	2	(10,807)	—	—	(10,805)
Repurchases of common stock	(589)	(6)	(54,404)	—	—	(54,410)
Balance at December 31, 2021	54,419	544	536,377	(196,012)	1,172,978	1,513,887
Net income	—	—	—	—	411,744	411,744
Other comprehensive income	—	—	—	28,831	—	28,831
Stock-based compensation	—	—	26,844	—	—	26,844
Issuance of common stock for restricted share vesting, net of employee tax withholdings	183	2	(8,803)	—	—	(8,801)
Repurchases of common stock	(537)	(5)	(50,178)	—	—	(50,183)
Balance at December 31, 2022	54,065	\$ 541	\$ 504,240	\$ (167,181)	\$ 1,584,722	\$ 1,922,322

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

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) OPERATIONS

Clean Harbors, Inc., through its subsidiaries (collectively, the "Company"), is a leading provider of sustainable environmental and industrial services throughout North America. The Company is also the largest re-refiner and recycler of used oil and the premier provider of parts cleaning and related environmental services to commercial, industrial and automotive customers in North America.

(2) SIGNIFICANT ACCOUNTING POLICIES

The accompanying consolidated financial statements of the Company reflect the application of certain significant accounting policies as described below:

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Clean Harbors, Inc. and its majority-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions, which are evaluated on an ongoing basis, that affect the amounts reported in the Company's consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and on various other assumptions it believes to be reasonable at the time under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and disclosure, if any, of contingent assets and liabilities and reported amounts of revenues and expenses. Actual results could differ from those estimates and judgments.

Cash, Cash Equivalents, Marketable Securities and Uncashed Checks

Cash consists primarily of cash on deposit and money market accounts. The Company, through its wholly-owned captive insurance subsidiary, invests in marketable securities. Marketable securities with maturities of three months or less from the date of purchase are classified as cash equivalents. As of December 31, 2022 and 2021, the Company had total marketable securities as follows (in thousands):

	December 31, 2022	December 31, 2021
Commercial paper	\$ 5,035	\$ —
U.S. Treasury securities	28,973	—
Total cash equivalents	34,008	—
U.S. Treasury securities	—	901
Municipal bonds	1,930	1,978
Commercial paper	24,075	21,160
Corporate notes and bonds	36,028	57,685
Total marketable securities	62,033	81,724
Total	\$ 96,041	\$ 81,724

Realized gains and losses on sales of available-for-sale marketable securities in the years presented were immaterial. The majority of the marketable securities have a remaining maturity of less than one year and fair value approximates cost.

The Company's cash management program with its revolving credit lender allows for the maintenance of a zero balance in the U.S. bank disbursement accounts that are used to issue vendor and payroll checks. When checks are presented to the bank for payment, cash deposits in amounts sufficient to fund the checks are made, at the Company's discretion, either from funds provided by other accounts or under the terms of the Company's revolving credit facility. Checks that have been written to vendors or employees but have not yet been presented for payment at the Company's bank are classified as uncashed checks as

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

part of accounts payable and changes in the balance are reported as a financing activity in the consolidated statements of cash flows.

Allowance for Doubtful Accounts and Revenue Allowance

On a regular basis, the Company evaluates its accounts receivable and establishes the allowance for doubtful accounts based on an evaluation of certain criteria and evidence of collection uncertainty including historical collection trends, reasonable expectations of future collections, current economic trends and changes in customer payment patterns. Past-due receivable balances are written off when the Company's collection efforts have been deemed unsuccessful in collecting the outstanding balance due.

Due to the nature of the Company's businesses and the invoices that result from the services provided, customers may withhold payments and attempt to renegotiate amounts invoiced. In addition, for some of the services provided, the Company's invoices are based on quotes that, in limited instances can result in adjustments to revenue subsequent to billing. Based on industry knowledge and historical trends, the Company records a revenue allowance in anticipation of these expected adjustments. This practice causes the volume of activity flowing through the revenue allowance during the year to be higher than the balance at the end of the year. The revenue allowance is intended to cover the net amount of revenue adjustments that may need to be credited to customers' accounts in future periods. Management determines the appropriate total revenue allowance by evaluating the following factors on an invoice-by-invoice basis as well as on a consolidated level: trends in adjustments to previously billed amounts, existing economic conditions, communications with customers and other information as deemed applicable. Revenue allowance estimates can differ from the actual adjustments, but historically the revenue allowance has been sufficient to cover the net amount of the reserve adjustments issued in subsequent reporting periods.

The following table reflects the activity in the allowance for doubtful accounts and revenue allowance (in thousands):

	Allowance for Doubtful Accounts			Revenue Allowance		
	2022	2021	2020	2022	2021	2020
Balance at January 1,	\$ 24,136	\$ 24,634	\$ 22,493	\$ 16,004	\$ 20,115	\$ 16,218
Additions charged to earnings	7,783	8,018	10,133	54,836	34,319	45,784
Deductions from reserves, net of recoveries	(7,260)	(8,516)	(7,992)	(50,246)	(38,430)	(41,887)
Balance at December 31,	<u>\$ 24,659</u>	<u>\$ 24,136</u>	<u>\$ 24,634</u>	<u>\$ 20,594</u>	<u>\$ 16,004</u>	<u>\$ 20,115</u>

Credit Concentration

Concentration of credit risks in accounts receivable is limited due to the large number of customers comprising the Company's customer base throughout North America. The Company maintains policies over credit extension that include credit evaluations, credit limits and collection monitoring procedures on a customer-by-customer basis. However, the Company generally does not require collateral before services are performed. No individual customer accounted for more than 10% of accounts receivable or more than 10% of total direct revenues in the periods presented.

Inventories and Supplies

Inventories are stated at the lower of cost or market. The cost of oil and oil products as well as the cost of supplies and drums, solvent and solution and other inventories is principally determined on a first-in, first-out ("FIFO") basis. The Company continually reviews its inventories for obsolete or unsalable items and adjusts its carrying value to reflect estimated realizable values.

Property, Plant and Equipment, net (excluding landfill assets and finance lease right-of-use assets)

Property, plant and equipment, net is stated at cost less accumulated depreciation. Expenditures for major renewals and improvements which extend the life or usefulness of the asset are capitalized. Items of an ordinary repair or maintenance nature are charged directly to operating expense as incurred. During the construction and development period of an asset, the costs incurred, including interest expense, are classified as construction-in-progress. When the asset is ready for its intended use, the asset is reclassified to an appropriate asset classification and depreciation or amortization commences. The Company

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

depreciates and amortizes the capitalized cost of these assets, using the straight-line method as follows:

Asset Classification	Estimated Useful Life
Buildings and building improvements	
Buildings	20-42 years
Leasehold and building improvements	2-45 years
Camp and lodging equipment	8-15 years
Vehicles	2-15 years
Equipment	
Capitalized software and computer equipment	3-5 years
Containers and railcars	8-16 years
All other equipment	4-30 years
Furniture and fixtures	5-8 years

Gains and losses on the sale of property, plant and equipment are included in Other income (expense), net. Fully depreciated assets are retained in property, plant and equipment and accumulated depreciation until they are removed from service.

The Company tests asset groups for impairment whenever events or changes in circumstances indicate that the carrying value may not be recoverable. An impairment in the carrying value of long-lived assets is recognized if the expected future undiscounted cash flows derived from the assets, or group of assets, are less than their carrying value. The Company did not record any impairment charges related to long-lived assets in the periods presented.

Business Combinations

In accordance with the acquisition method of accounting, the purchase price paid for an acquisition is allocated to the assets and liabilities acquired based upon their estimated fair values as of the acquisition date, with the excess of the purchase price over the net assets acquired recorded as goodwill. As required, a preliminary fair value is determined once a business is acquired, with the final determination of the fair value being completed no later than one year from the date of acquisition.

Goodwill

Goodwill is comprised of the purchase price of business acquisitions in excess of the fair value of the net assets acquired. Goodwill is reviewed for impairment annually as of December 31 or when events or changes in the business environment indicate the carrying value of a reporting unit may exceed its fair value. This review is performed by comparing the fair value of each reporting unit to its carrying value, including goodwill. If the fair value is less than the carrying amount, a loss is recorded for the excess of the carrying value over the fair value up to the carrying amount of goodwill.

The Company determines its reporting units by identifying the components of each operating segment. As of December 31, 2022, the Company had three reporting units consisting of, Environmental Sales and Service, Environmental Facilities and Safety-Kleen Sustainability Solutions. See Note 8, "Goodwill and Other Intangible Assets," for additional information related to the Company's goodwill impairment tests.

Permits and Other Intangibles

Costs related to acquiring licenses, permits and intangible assets, such as legal fees, site surveys, engineering costs and other expenditures are capitalized. Other intangible assets consist primarily of customer and supplier relationships, trademarks and trade names and developed technology.

Permits relating to landfills are amortized on a units-of-consumption basis. All other permits are amortized over periods ranging from five to 30 years on a straight-line basis. Finite-lived other intangible assets are amortized on a straight-line basis over their respective useful lives, which range from two to 25 years.

All finite-lived intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value may not be recoverable. When such factors and circumstances exist, management compares the projected undiscounted future cash flows associated with the related asset or group of assets to the carrying amount. The impairment loss, if any, is measured as the excess of the carrying amount over the fair value of the asset or group of assets.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Indefinite-lived intangible assets are not amortized but are reviewed for impairment annually as of December 31, or when events or changes in the business environment indicate that the carrying value may be impaired. If the fair value of the asset is less than the carrying amount, the impairment loss is measured as the excess of the carrying value of the asset over its fair value.

Landfill Accounting

The Company amortizes landfill improvements and certain landfill-related permits over the estimated useful lives. The units-of-consumption method is used to amortize land, landfill cell construction, asset retirement costs and remaining landfill cells and sites. The Company also utilizes the units-of-consumption method to record closure and post-closure obligations for landfill cells and sites. Under the units-of-consumption method, the Company includes future estimated construction and asset retirement costs, as well as costs incurred to date, in the amortization base of the landfill assets. Additionally, where appropriate, as described below, the Company includes probable expansion airspace that has yet to be permitted in the calculation of the total remaining useful life of the landfill. If it is determined that expansion capacity should no longer be considered in calculating the recoverability of a landfill asset, the Company may be required to recognize an asset impairment or incur significantly higher amortization expense. If at any time the Company makes the decision to abandon the expansion effort, the capitalized costs related to the expansion effort are expensed immediately.

Landfill assets—Landfill assets include the costs of landfill site acquisition, permits and cell construction incurred to date. These amounts are recorded at cost, which includes capitalized interest as applicable. Landfill assets, net of amortization, are combined with management's estimate of the costs required to complete construction of the landfill to determine the amount to be amortized over the remaining estimated useful economic life of a site. Amortization of landfill assets is recorded on a units-of-consumption basis, such that the landfill assets should be completely amortized at the date the landfill ceases accepting waste. Amortization totaled \$16.2 million, \$13.7 million and \$10.9 million for the years ended December 31, 2022, 2021 and 2020, respectively. Changes in the determination of when the landfill will cease accepting waste, either through a business decision by the Company, determination that expansion capacity should no longer be considered probable or changes in estimates on annual airspace consumption, will impact the amortization expense of the landfill assets. Changes in estimated costs to complete construction are applied prospectively to the amortization rate.

Landfill capacity—Landfill capacity, which is the basis for the amortization of landfill assets and for the accrual of final closure and post-closure obligations, represents total permitted airspace plus unpermitted airspace that management believes is highly probable of ultimately being permitted. As of December 31, 2022, there were no unpermitted expansions included in the Company's landfill accounting model. If actual expansion airspace is significantly different from management's estimate of expansion airspace, the amortization rates used for the units-of-consumption method would change, therefore impacting the Company's profitability.

As of December 31, 2022, the Company had nine active landfill sites including the Company's two non-commercial landfills. It is anticipated that the non-commercial landfill at the Deer Park, Texas incineration facility will reach its permitted capacity early in 2023 at which point the Company will commence closure activities. This landfill has been excluded from the table below which includes the estimated remaining lives (based on anticipated waste volumes and remaining highly probable airspace) for the remaining eight landfills, as follows:

Facility Name	Location	Remaining Lives (Years)	Permitted Remaining Highly Probable Airspace (cubic yards) (in thousands)
Buttonwillow	California	20	5,197
Deer Trail	Colorado	23	1,488
Grassy Mountain	Utah	39	4,454
Kimball	Nebraska	5	116
Lambton	Ontario, Canada	47	4,443
Lone Mountain	Oklahoma	16	3,412
Ryley	Alberta, Canada	37	5,851
Sawyer	North Dakota	83	3,309
			<u>28,270</u>

At December 31, 2022 and 2021, the Company had no cubic yards of permitted, but not highly probable, airspace.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents the remaining highly probable airspace from January 1, 2021 through December 31, 2022 (in thousands of cubic yards):

	2022	2021
Remaining capacity, beginning of year	23,784	24,716
Changes in highly probable airspace, net	5,579	—
Consumed	(1,093)	(932)
Remaining capacity, end of year	28,270	23,784

In the year ended December 31, 2022, the Company received a permit for the expansion of its Ryley landfill in Alberta, Canada. In the year ended December 31, 2021, the Company had no changes in highly probable airspace.

Amortization of cell construction costs and accrual of cell closure obligations—Landfills are typically comprised of a number of cells, which are constructed within a defined acreage (or footprint). The cells are typically discrete units, which require both separate construction and separate capping and closure procedures. Cell construction costs are the costs required to excavate and construct the landfill cell. These costs are typically amortized on a units-of-consumption basis, such that they are completely amortized when the specific cell ceases accepting waste. In some instances, the Company has landfills that are engineered and constructed as "progressive trenches." In progressive trench landfills, a number of contiguous cells form a progressive trench. In those instances, the Company amortizes cell construction costs over the airspace within the entire trench, such that the cell construction costs will be fully amortized at the end of the trench useful life.

The design and construction of a landfill does not create a landfill asset retirement obligation. Rather, the asset retirement obligation for cell closure (the cost associated with capping each cell) is incurred in relatively small increments as waste is placed in the landfill. Therefore, the cost required to construct the cell cap is capitalized as an asset retirement cost and a liability of an equal amount is established, based on the discounted cash flow associated with each capping event, as airspace is consumed. Spending for cell capping is reflected as environmental expenditures within operating activities in the consolidated statements of cash flows.

Landfill final closure and post-closure liabilities —The balance of landfill final closure and post-closure liabilities at December 31, 2022 and 2021 was \$62.3 million and \$53.4 million, respectively. The Company has material financial commitments for the costs associated with requirements of the Environmental Protection Agency ("EPA") and the comparable regulatory agency in Canada for landfill final closure and post-closure activities. The Company develops estimates for the cost of these activities based on an evaluation of site-specific facts and circumstances, including the Company's interpretation of current regulatory requirements and proposed regulatory changes. Such estimates may change in the future due to various circumstances including, but not limited to, permit modifications, changes in legislation or regulations, technological changes and results of environmental studies.

Final closure costs are the costs incurred after the site ceases to accept waste, but before the landfill is certified as closed by the applicable state regulatory agency. These costs generally include the costs required to cap the final cell of the landfill (if not included in cell closure), the costs required to dismantle certain structures for landfills and other landfill improvements, and regulation-mandated groundwater monitoring and leachate management. Post-closure costs involve the maintenance and monitoring of a landfill site that has been certified closed by the applicable regulatory agency. These costs generally include groundwater monitoring and leachate management. Regulatory post-closure periods are generally 30 years after landfill closure. Final closure and post-closure obligations are accrued on a units-of-consumption basis, such that the present value of the final closure and post-closure obligations are fully accrued at the date the landfill ceases accepting waste.

Cell closure, final closure and post-closure costs (also referred to as "asset retirement obligations") are calculated by estimating the total obligation in current dollars, adjusted for future inflation estimates and discounted at the Company's credit-adjusted risk-free interest rate (5.37% and 4.84% during 2022 and 2021, respectively).

Non-Landfill Closure and Post-Closure Liabilities

The balance of non-landfill closure and post-closure liabilities at December 31, 2022 and 2021 was \$56.6 million and \$45.7 million, respectively. Non-landfill closure and post-closure obligations arise when the Company commences non-landfill facility operations and include costs required to dismantle and decontaminate certain structures and other costs incurred during the closure process. Post-closure costs, if required, include associated maintenance and monitoring costs as required by the closure permit. Post-closure periods are performance-based and are not typically specified in terms of years in the closure permit, but generally range from 10 to 30 years or more.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The Company records its non-landfill closure and post-closure liability by: (i) estimating the current cost of closing a non-landfill facility and the post-closure care of that facility, if required, based upon the closure plan that the Company is required to follow under its operating permit, or in the event the facility operates with a permit that does not contain a closure plan, based upon legally enforceable closure commitments made by the Company to various government agencies; (ii) estimates as to when future operations may cease; (iii) cost estimates of closing the non-landfill facility using the inflation rate to the time of closing; and (iv) discounting the future value back to the present using the credit-adjusted risk-free interest rate.

The estimates for non-landfill closure and post-closure liabilities are inherently uncertain due to the possibility that permit and regulatory requirements will change in the future, impacting the estimation of total costs and the timing of the expenditures. Management reviews non-landfill closure and post-closure liabilities for changes to key assumptions that would impact the amount of the recorded liabilities. Changes that would prompt management to revise a liability estimate include changes in legal requirements that impact the Company's expected closure plan or scope of work, in the market price of a significant cost item, in the estimate as to when future operations at a location might cease or in the expected timing of the costs. Changes in estimates for non-landfill closure and post-closure events immediately impact the liability and the value of the corresponding asset. If a change is made to a fully-amortized asset, the adjustment is charged immediately to expense. When a change in estimate relates to an asset that has not been fully amortized, the adjustment to the asset is recognized in income prospectively as a component of amortization. Historically, changes to non-landfill closure and post-closure estimates have not been material.

Remedial Liabilities

The balance of remedial liabilities at December 31, 2022 and 2021 was \$116.3 million and \$111.9 million, respectively. Remedial liabilities, including Superfund liabilities, include the costs of removal or containment of contaminated material, treatment of potentially contaminated groundwater and maintenance and monitoring costs necessary to comply with regulatory requirements. Most of the Company's remedial liabilities relate to the active and inactive hazardous waste treatment and disposal facilities which the Company acquired and Superfund sites owned by third-parties for which the Company, or the prior owners of certain of the Company's facilities for which the Company may have certain indemnification obligations, have been identified as potentially responsible parties ("PRPs") or potential PRPs. The Company's estimate of remedial liabilities involves an analysis of such factors as: (i) the nature and extent of environmental contamination (if any); (ii) the terms of applicable permits and agreements with regulatory authorities as to cleanup procedures and whether modifications to such permits and agreements will likely need to be negotiated; (iii) the cost of performing anticipated cleanup activities based upon current technology; and (iv) in the case of Superfund and other sites where other parties will also be responsible for a portion of the cleanup costs, the likely allocation of such costs and the ability of such other parties to pay their share. The measurement of remedial liabilities is reviewed at least quarterly and changes in estimates are recognized in the consolidated statements of operations when identified.

Where the Company concludes that it is probable that a liability has been incurred and an amount can be estimated, a liability is recognized. Remedial liabilities are inherently difficult to estimate. Estimating remedial liabilities requires that the existing environmental contamination be understood. There are risks that the actual quantities of contaminants differ from the results of the site investigation, and that contaminants exist that have not been previously identified. In addition, the amount of remedial liabilities recorded is dependent on the remedial method selected. There is a risk that funds will be expended on a remedial solution that is not successful, which could result in the Company incurring the incremental costs of an alternative solution. Such estimates, which are subject to change, are subsequently revised if and when additional or new information becomes available.

Remedial liabilities are discounted when the timing of the payments is determinable and the amounts are estimable. In the case of remedial liabilities assumed in connection with acquisitions, acquired liabilities are recorded at fair value as of the dates of the acquisitions calculated by inflating costs in current dollars using an estimate of future inflation rates as of the respective acquisition dates until the expected time of payment, and then discounting the amount of the payments to their present value using a risk-free discount rate as of the acquisition dates. Discount rates used in the present value determination of the Company's remedial liabilities range from 1.37% to 4.90%.

Self-Insurance Liabilities

The Company self-insures a significant portion of expected losses related to workers' compensation, employee medical, comprehensive general liability and vehicle liability. Liabilities associated with these losses are recorded based on the Company's estimates of the ultimate cost to settle incurred claims. These recorded liabilities are estimated based on independent

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

actuarial estimates and judgments which consider the frequency and settlement amount of historical claims data and are discounted to present value using a risk-free interest rate.

Revenue Recognition

The Company recognizes revenue when control of the promised goods or services is transferred to the Company's customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services. The majority of the Company's revenues are for services, which are recognized based on time and materials incurred at contractually agreed-upon rates. Product revenues are recognized when the products are delivered and control transfers to the customer. The Company's payment terms vary by the type of customers and the products or services offered. The periods between invoicing and when payments are due are not significant. Amounts billed to customers related to shipping and handling are classified as revenue, and the Company's shipping and handling costs are included in costs of revenues. In the course of operations, the Company collects sales tax and other excise taxes from its customers and recognizes a current liability, which is then relieved when the taxes are remitted to the appropriate government authorities. The Company excludes sales and other excise taxes that it collects from customers from its revenues.

Foreign Currency

The Company has international operations in Canada and administrative support services located in India. The functional currencies of foreign operations are the local currency and therefore assets and liabilities of those foreign operations are translated to U.S. Dollars at the exchange rate in effect at the balance sheet date and revenue and expenses at the average exchange rate for the period. Gains and losses from the translation of the consolidated financial statements of foreign subsidiaries into U.S. Dollars are included in stockholders' equity as a component of accumulated other comprehensive loss. Gains and losses from transactions not denominated in the functional currency of an entity are recognized in the consolidated statements of operations. Recorded balances that are denominated in a currency other than the functional currency are remeasured to the functional currency using the exchange rate at the balance sheet date and gains or losses are recorded in the consolidated statements of operations.

Defined Contribution Plan

The Company has defined contribution plans under which eligible employees may contribute up to the maximum amount as provided by law. The Company matches a portion of these employee contributions and contributed \$25.3 million, \$20.5 million and \$18.6 million in 2022, 2021 and 2020 respectively.

Advertising Expense

Advertising costs are expensed as incurred. Advertising expense was \$9.4 million in 2022, \$6.0 million in 2021 and \$9.0 million in 2020.

Stock-Based Compensation

Stock-based compensation cost is measured at the grant date based on the fair value of the award and is recognized as expense over the requisite service period, which generally represents the vesting period. In addition, the Company issues awards with performance targets established prior to or at the grant date. The expense for these awards is recognized over the requisite service period when management believes it is probable those performance targets will be achieved. The fair value of the Company's grants are based on the closing price of the Company's common stock on the respective dates of grant. Forfeitures are recognized as they occur. Stock-based compensation is recognized in selling, general and administrative expense.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Interest Rate Derivatives

The Company enters into interest rate derivative agreements as part of the overall strategy to hedge against fluctuations in variable interest rates. These interest rate derivatives swap a variable interest rate for a fixed interest rate and have been designated as cash flow hedges. The Company assesses the hedge's effectiveness at the inception of the hedge and at regular intervals throughout the life of the derivative. To the extent that the interest rate swap is highly effective, changes in fair value are recorded in stockholders' equity as a component of accumulated other comprehensive loss. Amounts are reclassified from accumulated other comprehensive loss into interest expense on the consolidated statement of operations in the same period or periods during which the hedged transactions affect earnings. Although it was determined that the interest rate swaps will be a highly effective hedge, any portion of the interest rate swaps subsequently determined to be ineffective will be recognized in earnings. Further, if it becomes probable that a forecasted transaction designated as the hedged item will not occur, any gain or loss deferred is recognized in interest expense at that time.

The fair value of the interest rate swaps is calculated using discounted cash flow valuation methodologies based upon the one-month variable rate yield curves that are observable at commonly quoted intervals for the full term of the interest rate swaps and as such is considered a Level 2 measure according to the fair value hierarchy. The Company recognizes the fair value of the derivative instruments by counterparty as either a net asset, included in Other assets, or net liability, included in Accrued expenses and other current liabilities, on the consolidated balance sheets.

Income Taxes

Current income tax expense approximates cash to be paid or refunded for taxes for the applicable period. Deferred tax expense or benefit is the result of changes between deferred tax assets and liabilities. Deferred tax assets and liabilities are determined based upon the temporary differences between the financial statement basis and tax basis of assets and liabilities as well as from net operating loss and tax credit carryforwards as measured by the enacted tax rates which will be in effect when these differences reverse. The effect of a change in tax rates on deferred tax assets and liabilities is generally recognized in income in the period that includes the enactment date. The Company evaluates the recoverability of future tax deductions and credits and a valuation allowance is established by tax jurisdiction when, based on an evaluation of both positive and negative objective verifiable evidence, it is more likely than not that some portion or all of deferred tax assets will not be realized.

The Company recognizes and measures a tax benefit from uncertain tax positions when it is more likely than not that the tax position will be sustained upon examination by the taxing authorities, based on the technical merits of the position. The Company recognizes a liability for unrecognized tax benefits resulting from uncertain tax positions taken or expected to be taken in a tax return. The Company adjusts these liabilities when its judgment changes as a result of the evaluation of new information not previously available. Due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the current estimate or future recognition of an unrecognized benefit. These differences will be reflected as increases or decreases to income tax expense in the period in which they are determined. Liabilities for unrecognized tax benefits are included within other long-term liabilities in the consolidated balance sheets.

The Company recognizes interest and penalties related to unrecognized tax benefits within the provision for income taxes line in the consolidated statements of operations. Accrued interest and penalties are included within the other long-term liabilities line in the consolidated balance sheets.

Earnings per Share ("EPS")

Basic EPS is calculated by dividing net income by the weighted average number of common shares outstanding during the period. Diluted EPS gives effect to all potentially dilutive common shares that were outstanding during the period.

Leases

The Company's leases predominately relate to real estate, equipment, such as vehicles and industrial equipment utilized in operations, and rail cars utilized in connection with the Company's transportation needs. Contracts are reviewed at inception to determine if the arrangement is a lease and, if so, whether it is an operating or finance lease. For all of its leases, the Company has elected not to separate lease and nonlease components, such as common area maintenance.

The Company generally enters into long-term real estate leases with three to ten-year terms and long-term non-real estate leases with two to eight-year terms. In the normal course of business, the Company also enters into short-term leases having terms of less than one year. These leases are generally equipment leases entered into for short periods of time (e.g. daily, weekly or monthly) to satisfy immediate and/or short-term operational needs of the business which can arise based upon the nature of particular services performed or seasonality factors. The Company has elected not to recognize right-of-use ("ROU")

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

assets and lease liabilities for these short-term leases. Operating and finance leases with terms exceeding one year are recognized as ROU assets and lease liabilities and measured based on the present value of the future lease payments over the lease term at commencement date.

Certain of the Company's real estate leases contain escalating future lease payments. Escalating lease payments that are based upon explicit amounts contained in the lease or an index (e.g., consumer price index) are included in the Company's determination of future lease payments to determine the ROU asset and lease liability recognized at the commencement date. Any differences in the future lease payments from initial recognition are not anticipated to be material and will be recorded as variable lease cost in the period incurred. The variable lease cost will also include the Company's portion of property tax, utilities and common area maintenance. A significant portion of the Company's real estate lease agreements include renewal periods at the Company's option. The Company includes these renewal periods in the lease term only when renewal is reasonably certain based upon facts and circumstances specific to the lease and known by the Company. Certain of the equipment and rail car leases transfer ownership upon the conclusion of the lease term and as such, are classified as finance leases. Leases containing purchase options are classified as finance leases only when it is reasonably certain that the Company will execute such options.

The Company uses its incremental borrowing rate on collateralized debt based on the information available at the lease commencement date in determining the present value of future lease payments as the implicit rate is typically not readily determinable.

For operating leases, lease cost is recognized on a straight-line basis over the lease term and is included in cost of revenues or selling, general and administrative expenses depending on the use of the asset. For finance leases, ROU assets are amortized on a straight-line basis and interest expense is recognized based on the incremental borrowing rate. Amortization and interest expense for finance leases are included in depreciation and amortization and interest expense, net of interest income, respectively.

(3) REVENUES

The Company generates revenues through the following operating segments: Environmental Services and Safety-Kleen Sustainability Solutions. The Company's Environmental Services operating segment generally has four sources of revenue and the Safety-Kleen Sustainability Solutions operating segment has two sources of revenue. The Company disaggregates third-party revenues by geographic location and source of revenue as management believes these categories depict how revenue and cash flows are affected by economic factors. The Company's significant sources of revenue include:

Technical Services—Technical Services contribute to the revenues of the Environmental Services operating segment. Revenues for these services are generated from fees charged for waste material management and disposal services including onsite environmental management services, large remediation projects, collection and transportation, packaging, recycling, treatment and disposal of waste. Revenue is primarily generated by short-term projects, most of which are governed by master service agreements that are long-term in nature. These master service agreements are typically entered into with the Company's larger customers and outline the pricing and legal frameworks for such arrangements. Services are provided based on purchase orders or agreements with the customer and include prices based upon units of volume of waste, material and personnel costs as well as transportation and other fees. Collection and transportation revenues are recognized over time, as the customer receives and consumes the benefits of the services as they are being performed and the Company has a right to payment for performance completed to date. The Company uses the input method to recognize revenue over time, based on time and materials incurred as a basis for measuring the satisfaction of the performance obligation. Revenues for treatment and disposal of waste are recognized upon completion of treatment, final disposition in a landfill or incinerator, or when the waste is shipped to a third-party for processing and disposal. The Company periodically enters into bundled arrangements for the collection and transportation and disposal of waste. For such arrangements, transportation and disposal are considered distinct performance obligations and the Company allocates revenue to each based on the relative standalone selling price (i.e., the estimated price that a customer would pay for the services on a standalone basis). Revenues and the related costs from waste that is not yet completely processed and disposed of are deferred. The deferred revenues and costs are recognized when the services are completed. The period between collection and transportation and the final processing and disposal ranges depending on the location of the customer, but generally is measured in days.

Industrial Services and Other—Industrial Services contribute to the revenues of the Environmental Services operating segment. These revenues are primarily generated from industrial and specialty services provided to refineries, mines, upgraders, chemical plants, pulp and paper mills, manufacturing facilities, power generation facilities and other industrial customers throughout North America. Services include in-plant cleaning and maintenance services, plant outage and turnaround services,

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

specialty cleaning services including chemical cleaning, pigging and high and ultra-high pressure water cleaning, leak detection and repair, daylighting, production services and upstream energy services. Services are provided based on purchase orders or agreements with the customer and include prices based upon daily, hourly or job rates for equipment, materials and personnel. The Company recognizes revenue for these services over time, as the customer receives and consumes the benefits of the services as they are being performed and the Company has a right to payment for performance completed to date. The Company uses the input method to recognize revenue over time, based on time and materials incurred.

Field and Emergency Response Services—Field and Emergency Response Services contribute to the revenues of the Environmental Services operating segment. Field Services revenues are generated from cleanup services at customer sites, including those managed by municipalities and utility providers, or other locations on a scheduled or emergency response basis. Services include confined space entry for tank cleaning, site decontamination, remediation, railcar cleaning, manhole/vault clean outs, product recovery and transfer and vacuum services. Additional services include filtration and water treatment services. Response services for environmental emergencies of any scale range from man-made disasters such as oil spills to natural disasters such as hurricanes. Emergency response services also include spill cleanup on land and water, as well as contagion disinfection, decontamination and disposal services. Field and emergency response services are provided based on purchase orders or agreements with customers and include prices generally based upon daily, hourly or job rates for equipment, materials and personnel. The Company recognizes revenue for these services over time, as the customer receives and consumes the benefits of the services as they are being performed and the Company has a right to payment for performance completed to date. The Company uses the input method to recognize revenue over time, based on time and materials incurred. The duration of such services can be over a number of hours, several days or even months for larger scale projects.

Safety-Kleen Environmental Services—Safety-Kleen Environmental Services revenues contribute both to the Environmental Services operating segment and the Safety-Kleen Sustainability Solutions operating segment depending upon the nature of such revenues and operating responsibilities relative to executing the revenue contracts. Revenues from providing containerized waste handling and disposal services, parts washer services and vacuum services, referred to collectively as the Safety-Kleen branches' core service offerings, contribute to the revenues of the Environmental Services operating segment. In addition, sales of packaged blended oil products and other complementary product sales contribute to the revenues of the Environmental Services operating segment. Revenues generated from waste oil, anti-freeze and oil filter collection services, sales of bulk blended oil products and sales of bulk automotive fluids contribute to the Safety-Kleen Sustainability Solutions operating segment.

Generally, the revenue from services is recognized over time, as the customer receives and consumes the benefits of the services as they are being performed and the Company has a right to payment for performance completed to date. The duration of such services can be over a number of hours or several days. The Company uses the input method to recognize revenue over time, based on time and materials incurred. Product revenue is recognized upon the transfer of control whereby control transfers when the products are delivered to the customer. Containerized waste services consist of profiling, collecting, transporting and recycling or disposing of a wide variety of waste. Related collection and transportation revenues are recognized over time, as the customer receives and consumes the benefits of the services as they are being performed and the Company has a right to payment for performance completed to date. Parts washer services include customer use of the Company's parts washer equipment, cleaning and maintenance of the parts washer equipment and removal and replacement of used cleaning fluids. Parts washer services are considered a single performance obligation due to the highly integrated and interdependent nature of the arrangement. Revenue from parts washer services is recognized over the service interval as the customer receives the benefit of the services.

Safety-Kleen Oil—Safety-Kleen Oil related sales contribute to the revenues of the Safety-Kleen Sustainability Solutions segment. These revenues are generated from sales of high-quality base and blended lubricating oils to third-party distributors, government agencies, fleets, railroads and industrial customers. The business also sells recycled fuel oil to asphalt plants, industrial plants and pulp and paper companies. The used oil is also processed into vacuum gas oil which can be further re-refined into lubricant base oils or sold directly into the marine diesel oil fuel market. Revenue for oil products is recognized at a point in time, upon the transfer of control. Control transfers when the products are delivered to the customer.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following tables present the Company's third-party revenue disaggregated by source of revenue and geography (in thousands):

	For the year ended December 31, 2022			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate	Total
Primary Geographical Markets				
United States	\$ 3,675,880	\$ 899,780	\$ 507	\$ 4,576,167
Canada	469,093	121,345	—	590,438
Total third-party revenues	\$ 4,144,973	\$ 1,021,125	\$ 507	\$ 5,166,605
Sources of Revenue				
Technical Services	\$ 1,495,264	\$ —	\$ —	\$ 1,495,264
Industrial Services and Other	1,311,072	—	507	1,311,579
Field and Emergency Response Services	575,300	—	—	575,300
Safety-Kleen Environmental Services	763,337	199,360	—	962,697
Safety-Kleen Oil	—	821,765	—	821,765
Total third-party revenues	\$ 4,144,973	\$ 1,021,125	\$ 507	\$ 5,166,605

	For the year ended December 31, 2021			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate	Total
Primary Geographical Markets				
United States	\$ 2,631,112	\$ 693,542	\$ 299	\$ 3,324,953
Canada	394,795	85,818	—	480,613
Total third-party revenues	\$ 3,025,907	\$ 779,360	\$ 299	\$ 3,805,566
Sources of Revenue				
Technical Services	\$ 1,209,624	\$ —	\$ —	\$ 1,209,624
Industrial Services and Other	705,999	—	299	706,298
Field and Emergency Response Services	466,380	—	—	466,380
Safety-Kleen Environmental Services	643,904	161,587	—	805,491
Safety-Kleen Oil	—	617,773	—	617,773
Total third-party revenues	\$ 3,025,907	\$ 779,360	\$ 299	\$ 3,805,566

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

	For the year ended December 31, 2020			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate	Total
Primary Geographical Markets				
United States	\$ 2,287,796	\$ 452,435	\$ (674)	\$ 2,739,557
Canada	349,845	53,731	964	404,540
Total third-party revenues	<u>\$ 2,637,641</u>	<u>\$ 506,166</u>	<u>\$ 290</u>	<u>\$ 3,144,097</u>
Sources of Revenue				
Technical Services	\$ 1,062,714	\$ —	\$ —	\$ 1,062,714
Industrial Services and Other	480,331	—	290	480,621
Field and Emergency Response Services	461,036	—	—	461,036
Safety-Kleen Environmental Services	633,560	175,676	—	809,236
Safety-Kleen Oil	—	330,490	—	330,490
Total third-party revenues	<u>\$ 2,637,641</u>	<u>\$ 506,166</u>	<u>\$ 290</u>	<u>\$ 3,144,097</u>

Contract Balances

(in thousands)	December 31, 2022	December 31, 2021
Receivables	\$ 964,603	\$ 792,734
Contract assets (unbilled receivables)	107,010	94,963
Contract liabilities (deferred revenue)	94,094	83,749

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets) and customer advances and deposits or deferred revenue (contract liabilities) on the consolidated balance sheet. Generally, billing occurs subsequent to revenue recognition, as a right to payment is not just subject to passage of time, resulting in contract assets. Contract assets are generally classified as current. The Company sometimes receives advances or deposits from its customers before revenue is recognized, resulting in contract liabilities. These assets and liabilities are reported on the consolidated balance sheet on a contract-by-contract basis at the end of each reporting period. The contract liability balances at the beginning of each period presented were generally fully recognized in the subsequent three-month period.

Variable Consideration

The nature of the Company's contracts give rise to certain types of variable consideration, including in limited cases volume discounts. Accordingly, management establishes a revenue allowance to cover the estimated amounts of revenue that may need to be credited to customers' accounts in future periods. The Company estimates the amount of variable consideration to include in the estimated transaction price based on historical experience, anticipated performance and management's best judgment at the time and to the extent it is probable that a significant reversal of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. There have been no material changes in estimates of variable consideration in the periods presented.

Contract Costs

Contract costs include direct and incremental costs to obtain or fulfill a contract. Parts washer costs include costs of solvent, commissions paid relating to revenue generated from parts washer services, and transportation costs associated with transferring the product picked up from the services as it is returned to the Company's facilities or a third-party site. Costs related to the treatment of waste include costs for waste receiving, drum movement and storage, waste consolidation and transportation between facilities.

The Company's contract costs that are subject to capitalization are comprised of costs associated with parts washer services and costs associated with the treatment and disposal of waste. As of December 31, 2022 and 2021, the Company's deferred contract costs totaled \$29.7 million and \$26.4 million, respectively. Deferred parts washer costs are recognized over the service interval as the customer receives the benefit of the services, and deferred costs related to treatment and disposal of waste are recognized when the corresponding waste is disposed. Deferred costs are included within total current assets in the

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Company's consolidated balance sheets. The deferred contract cost balances at the beginning of each period presented were fully recognized in cost of revenue in the subsequent three-month period.

(4) BUSINESS COMBINATIONS***Proposed 2023 Acquisition***

On February 9, 2023, the Company signed a purchase agreement to acquire a privately-owned company for an all cash purchase price of approximately \$100.0 million, subject to customary closing adjustments. The Company intends to fund this acquisition with available cash. Once acquired, the operations of the acquired company will expand the Environmental Services segment's industrial service operations in the southeastern region of the United States. The acquisition is expected to close in early 2023.

2022 Acquisitions

On June 17, 2022, the Company acquired a privately-owned company for an all-cash purchase price of approximately \$78.9 million, net of cash acquired. The operations of the newly acquired company expand the Safety-Kleen Sustainability Solutions segment's waste oil collection capabilities and re-refining business throughout the southeast region of the United States, including the addition of a re-refinery in Georgia.

The preliminary allocation of the purchase price is provisional and was based on estimates of the fair value of assets acquired and liabilities assumed as of June 17, 2022. The Company continues to obtain information to complete the valuation of these balances and the associated income tax accounting. Measurement period adjustments will reflect new information obtained about facts and circumstances that existed as of the acquisition date. The following table summarizes the preliminary determination and recognition of assets acquired and liabilities assumed (in thousands):

	At Acquisition Date As Reported December 31, 2022
Accounts receivable	\$ 1,111
Inventories and supplies	5,816
Prepaid expenses and other current assets	144
Property, plant and equipment	19,605
Permits and other intangibles	23,500
Operating lease right-of-use assets	585
Other non-current assets	13
Current liabilities	(3,271)
Current portion of operating lease liabilities	(186)
Operating lease liabilities, less current portion	(399)
Other long-term liabilities	(55)
Total identifiable net assets	46,863
Goodwill	32,015
Total purchase price	\$ 78,878

Permits and other intangible assets acquired include supplier relationships, permits, customer relationships and trademarks/tradenames and are anticipated to have estimated useful lives of between five and 20 years with a weighted average useful life of approximately 18 years. The excess of the total purchase price, which includes the aggregate cash consideration paid in excess of the fair value of the tangible and intangible assets acquired, was recorded as goodwill. The goodwill recognized is

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

attributable to the expected operating synergies, assembled workforce and growth potential that the Company expects to realize from the acquisition. Goodwill generated from the acquisition is deductible for tax purposes.

The operations included in the Company's financial statements for the period ended December 31, 2022 and pro forma revenue and earnings amounts on a combined basis as if this acquisition had been completed on January 1, 2021 are immaterial to the consolidated financial statements of the Company.

On December 9, 2022, the Company acquired a privately-owned business for \$12.4 million cash consideration, subject to the settlement of working capital. The acquired company expands the Safety-Kleen Sustainability Solutions segment's oil collection operations in the southeast United States. In connection with this acquisition, goodwill of \$2.5 million was recognized. The results of operations for the acquired business were not material in 2022.

HydroChemPSC

On October 8, 2021, the Company completed its acquisition of LJ Energy Services Intermediate Holding Corp. and its subsidiaries (collectively, "HydroChemPSC"), a privately owned company, for an all-cash purchase price of approximately \$1.23 billion. HydroChemPSC is a leading U.S. provider of industrial cleaning, specialty maintenance and utilities services. These operations enhance and have been fully integrated into the Company's Environmental Services segment. In the first quarter of 2022, the Company received \$5.0 million after finalizing the acquisition date working capital balances, which decreased the overall purchase price.

The Company finalized the purchase accounting for the acquisition of HydroChemPSC in the third quarter of 2022. The allocation of the purchase price was based on estimates of the fair value of assets acquired and liabilities assumed as of October 8, 2021. The following table summarizes the final determination and recognition of assets acquired and liabilities assumed (in thousands):

	At Acquisition Date As Reported December 31, 2021	Measurement Period Adjustments	Final Allocation at Acquisition Date As Reported December 31, 2022
Accounts receivable, including unbilled receivables	\$ 131,924	\$ (408)	\$ 131,516
Inventories and supplies	3,162	—	3,162
Prepaid expenses and other current assets	16,016	275	16,291
Property, plant and equipment	313,540	857	314,397
Other intangibles	289,000	—	289,000
Operating lease right-of-use assets	34,347	68	34,415
Other non-current assets	1,045	(83)	962
Current liabilities	(115,704)	(3,150)	(118,854)
Current portion of operating lease liabilities	(11,659)	382	(11,277)
Operating lease liabilities, less current portion	(26,128)	(216)	(26,344)
Deferred tax liabilities	(85,908)	5,522	(80,386)
Other long-term liabilities	(2,685)	(1,485)	(4,170)
Total identifiable net assets	546,950	1,762	548,712
Goodwill ⁽ⁱ⁾	683,463	(6,762)	676,701
Total purchase price	\$ 1,230,413	\$ (5,000)	\$ 1,225,413

(i) Goodwill represents the excess of the fair value of the net assets acquired over the purchase price. Goodwill of \$676.7 million was assigned to the Environmental Sales and Service reporting unit and is attributable to the future economic benefits arising from the acquired operations, synergies and the acquired workforce of HydroChemPSC. None of the goodwill related to this acquisition will be deductible for tax purposes.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Unaudited Pro Forma Financial Information

The following table presents unaudited pro forma combined summary financial information for the years ended December 31, 2021 and December 31, 2020, respectively, and assumes the acquisition of HydroChemPSC occurred on January 1, 2020 (in thousands):

	2021	2020
Pro forma combined revenues	\$ 4,380,724	\$ 3,859,430
Pro forma combined net income	229,807	149,219

The pro forma results do not include any costs incurred directly attributable to the acquisition of HydroChemPSC. The pro forma results do reflect impacts resulting from the issuance of \$1.0 billion senior secured term loans issued in connection with the acquisition assuming interest rates in effect at the time of the acquisition.

This pro forma financial information is not necessarily indicative of the Company's consolidated operating results that would have been reported had the transactions been completed as described herein, nor is such information necessarily indicative of the Company's consolidated results for any future period. Interest expense used in calculating the pro forma net income in both periods did not contemplate the interest rate swap that the Company put in place in early 2022. See Note 12, "Financing Arrangements."

Other 2021 Acquisition Activity

On March 27, 2021, the Company acquired a privately-owned business for \$22.8 million cash consideration. The acquired company increases the Safety-Kleen Sustainability Solutions segment's network within the south central United States. In connection with this acquisition, a goodwill amount of \$16.3 million was recognized. The results of operations for this acquired business were not material in 2021.

On June 29, 2021, the Company signed a definitive agreement with Vertex Energy, Inc. ("Vertex") to acquire certain assets related to Vertex's used motor oil collection and re-refinery business in an all-cash transaction for \$140.0 million, subject to working capital and other adjustments. On January 25, 2022, Vertex and the Company mutually agreed to terminate the planned acquisition. In connection with the termination, in early 2022, Vertex paid Clean Harbors a breakup fee of \$3.0 million pursuant to the agreement.

2020 Acquisition

On April 17, 2020, the Company acquired a privately-owned business for \$8.8 million cash consideration. The acquired company expands the Safety-Kleen Sustainability Solutions segment's oil re-refining operations to the northeast United States. In connection with this acquisition, goodwill of \$1.4 million was recognized. The results of operations of this acquired business were not material in 2020.

(5) DISPOSITION OF BUSINESS

On June 30, 2022, the Company completed the sale of a line of business as part of its continuous focus on divesting certain non-core operations. The divested line of business was previously included within the Environmental Sales and Service reporting unit of the Environmental Services segment. The Company determined that the disposition did not constitute a strategic shift and that the impact on the Company's overall operations and financial results will not be material. Accordingly, the operations associated with the disposal are not reported in discontinued operations. The final purchase price for the line of business was \$18.8 million, after settling working capital. The gain on sale of \$8.9 million, after accounting for the assets sold, liabilities transferred upon sale and transaction costs, is included in gain on sale of business in the Company's consolidated statement of operations for the year ended December 31, 2022.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(6) INVENTORIES AND SUPPLIES

Inventories and supplies consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Oil and oil related products	\$ 151,519	\$ 101,965
Supplies	143,743	126,602
Solvent and solutions	11,994	8,099
Other	17,738	14,026
Total inventories and supplies	<u>\$ 324,994</u>	<u>\$ 250,692</u>

The balance of oil and oil related products has increased due to higher volumes of base oil on hand at December 31, 2022 when compared with December 31, 2021 and overall price increases for the oil inventory and additives. Supplies inventories consist primarily of critical spare parts to support the Company's incinerator and re-refinery operations and other general supplies used in normal day-to-day operations. Other inventories consist primarily of parts washer components, cleaning fluids, absorbents and automotive fluids, such as windshield washer fluid and antifreeze.

(7) PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Land	\$ 172,579	\$ 165,010
Asset retirement costs (non-landfill)	22,001	19,105
Landfill assets	232,872	205,873
Buildings and improvements ⁽¹⁾	584,916	551,795
Camp equipment	116,976	127,680
Vehicles ⁽²⁾	1,112,188	912,836
Equipment ⁽³⁾	2,078,088	2,092,395
Furniture and fixtures	6,481	6,444
Construction in progress	140,328	60,447
	<u>4,466,429</u>	<u>4,141,585</u>
Less - accumulated depreciation and amortization	2,486,127	2,278,410
Total property, plant and equipment, net	<u>\$ 1,980,302</u>	<u>\$ 1,863,175</u>

(1) Balances inclusive of gross ROU assets classified as finance leases of \$8.0 million and \$8.9 million, respectively.

(2) Balances inclusive of gross ROU assets classified as finance leases of \$106.7 million and \$77.7 million, respectively.

(3) Balances inclusive of gross ROU assets classified as finance leases of \$9.2 million and \$9.3 million, respectively.

Depreciation expense, inclusive of landfill and finance lease amortization was \$297.4 million, \$263.4 million and \$257.1 million for the years ended December 31, 2022, 2021 and 2020, respectively. The Company recorded \$3.4 million of capitalized interest in 2022, mainly attributable to the construction of a new incinerator in Kimball, Nebraska. Capitalized interest in 2021 and 2020 was negligible.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

(8) GOODWILL AND OTHER INTANGIBLE ASSETS

The changes in goodwill for the years ended December 31, 2022 and 2021 were as follows (in thousands):

	Environmental Services	Safety-Kleen Sustainability Solutions	Totals
Balance at January 1, 2021	\$ 401,918	\$ 125,105	\$ 527,023
Increase from current period acquisitions	683,463	16,349	699,812
Foreign currency translation	153	54	207
Balance at December 31, 2021	\$ 1,085,534	\$ 141,508	\$ 1,227,042
Increase from current period acquisitions	—	34,510	34,510
Measurement period adjustments from prior period acquisition	(6,762)	—	(6,762)
Decrease from disposition of business	(4,412)	—	(4,412)
Foreign currency translation	(2,514)	(986)	(3,500)
Balance at December 31, 2022	<u>\$ 1,071,846</u>	<u>\$ 175,032</u>	<u>\$ 1,246,878</u>

The Company regularly assesses goodwill for impairment when it is more likely than not that events or changes in the business environment ("triggering events") would reduce the fair value of a reporting unit below its carrying value. The Company did not identify any triggering events in the years presented.

Goodwill impairment is also tested annually. The Company conducted its annual impairment test of goodwill as of December 31, 2022 and determined that no adjustment to the carrying value of goodwill for any reporting unit was then necessary because the fair values of the reporting units exceeded their respective carrying values. The fair value of all reporting units was determined using an income approach based upon estimates of future discounted cash flows. The resulting estimates of fair value were validated through the consideration of other factors such as the fair value of comparable companies to the reporting units and a reconciliation of the sum of all estimated fair values of the reporting units to the Company's overall market capitalization. In all cases, the estimated fair values of the reporting units significantly exceeded the respective carrying values.

Significant judgments and unobservable inputs, categorized as Level 3 in the fair value hierarchy, are inherent in the impairment tests performed and include assumptions about the amount and timing of expected future cash flows, growth rates, and the determination of appropriate discount rates. Level 3 inputs are unobservable inputs for the asset or liability in which there is little, if any, market activity for the asset or liability at the measurement date. The Company believes that the assumptions used in its impairment tests are reasonable, but variations in any of the assumptions may result in different measurements of fair values.

The impacts of any adverse business and market conditions which may impact the overall performance of the Company's reporting units will continue to be monitored. If the Company's reporting units do not achieve the financial performance that the Company expects, or if there is a significant prolonged change in demand for the Company's products and services, it is possible that goodwill impairment charges may result. Therefore, there can be no assurance that future events will not result in an impairment of goodwill.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

As of December 31, 2022 and 2021, the Company's finite-lived and indefinite-lived intangible assets consisted of the following (in thousands):

	December 31, 2022			December 31, 2021		
	Cost	Accumulated Amortization	Net	Cost	Accumulated Amortization	Net
Permits	\$ 188,373	\$ 109,036	\$ 79,337	\$ 187,519	\$ 102,408	\$ 85,111
Customer and supplier relationships	583,709	229,368	354,341	576,474	214,776	361,698
Other intangible assets	89,388	24,818	64,570	94,271	19,359	74,912
Total amortizable permits and other intangible assets	861,470	363,222	498,248	858,264	336,543	521,721
Trademarks and trade names	122,534	—	122,534	123,191	—	123,191
Total permits and other intangible assets	\$ 984,004	\$ 363,222	\$ 620,782	\$ 981,455	\$ 336,543	\$ 644,912

The Company regularly monitors and assesses whether events or changes in circumstances relative to the Company's business might indicate that future cash flows attributable to the Company's asset groups may not be sufficient to recover the current value of those assets. During the periods presented, there were no events or changes in circumstances which would indicate that the carrying values of the Company's asset groups would not be recoverable and thus no impairment charge was recorded related to the Company's long-lived assets. If expectations of future cash flows were to decrease in the future as a result of worse than expected or prolonged periods of depressed activity, future impairments may become evident.

Amortization expense of permits, customer and supplier relationships and other intangible assets for the years ended December 31, 2022, 2021 and 2020 were \$50.2 million, \$34.7 million and \$35.8 million, respectively. The Company wrote-off fully amortized intangible assets with a cost of \$19.1 million during the year ended December 31, 2022.

The expected amortization of the net carrying amount of finite-lived intangible assets at December 31, 2022 is as follows (in thousands):

Years ending December 31,	Expected Amortization
2023	\$ 46,030
2024	41,814
2025	39,828
2026	37,943
2027	35,869
Thereafter	296,764
	\$ 498,248

(9) ACCRUED EXPENSES

Accrued expenses consisted of the following (in thousands):

	December 31, 2022	December 31, 2021
Accrued insurance	\$ 92,909	\$ 102,853
Accrued interest	20,033	19,785
Accrued compensation and benefits	123,226	133,604
Accrued income, real estate, sales and other taxes	61,442	29,954
Interest rate swap liability	—	17,383
Accrued other	99,106	87,835
	\$ 396,716	\$ 391,414

As of December 31, 2022 and 2021, accrued insurance included employee medical insurance costs of \$16.4 million and \$18.6 million, respectively, and accruals for losses under workers' compensation, comprehensive general liability and vehicle liability self-insurance programs of \$74.9 million and \$82.8 million, respectively. The increase in accrued income, real estate, sales and other taxes is due to the timing and amount of estimated payments of foreign income tax liabilities. The change in the

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

fair value of the interest rate swap liability from December 31, 2021 is mainly due to the passage of time and changes in future interest rate expectations. As of December 31, 2022, the interest rate swap derivatives are in an asset position and therefore, are included within Other Assets on the consolidated balance sheet. For additional information relating to the interest rate swaps, see Note 12, "Financing Arrangements."

(10) CLOSURE AND POST-CLOSURE LIABILITIES

The changes to closure and post-closure liabilities (also referred to as "asset retirement obligations") from January 1, 2021 through December 31, 2022 were as follows (in thousands):

	Landfill Retirement Liability	Non-Landfill Retirement Liability	Total
Balance at January 1, 2021	\$ 48,412	\$ 39,514	\$ 87,926
Liabilities assumed in acquisitions	—	1,446	1,446
New asset retirement obligations	2,443	—	2,443
Accretion	3,655	3,702	7,357
Changes in estimates recorded to consolidated statement of operations	2,287	396	2,683
Changes in estimates recorded to consolidated balance sheet	2,297	1,415	3,712
Expenditures	(5,818)	(784)	(6,602)
Currency translation and other	149	(11)	138
Balance at December 31, 2021	<u>53,425</u>	<u>45,678</u>	<u>99,103</u>
Liabilities assumed in acquisitions	—	55	55
Measurement period adjustments from prior period acquisitions	—	1,148	1,148
New asset retirement obligations	3,743	—	3,743
Accretion	4,605	4,147	8,752
Changes in estimates recorded to consolidated statement of operations	1,063	5,712	6,775
Changes in estimates recorded to consolidated balance sheet	3,219	1,742	4,961
Expenditures	(3,373)	(1,778)	(5,151)
Currency translation and other	(431)	(154)	(585)
Balance at December 31, 2022	<u>\$ 62,251</u>	<u>\$ 56,550</u>	<u>\$ 118,801</u>

The Company is in the process of closing two of its commercial landfill sites. The Altair landfill reached its permitted capacity in 2020 and the Westmorland landfill was closed due to the costs of obtaining and maintaining permits and operating the landfill. The changes in estimates recorded to the consolidated statement of operations includes \$0.6 million and \$2.3 million in 2022 and 2021, respectively, related to the closure of these two commercial landfills. The remainder of the change in estimate recorded to the consolidated statement of operations in 2022 was predominately the result of updated cost estimates for the planned closure of two non-landfill locations expected to commence in 2023.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Anticipated payments (based on current estimated costs and anticipated timing of necessary regulatory approvals to commence work on closure and post-closure activities) for each of the next five years and thereafter are as follows (in thousands):

Years ending December 31,

2023	\$	14,414
2024		14,733
2025		12,808
2026		8,369
2027		7,420
Thereafter		290,366
Undiscounted closure and post-closure liabilities		348,110
Less: Discount at credit-adjusted risk-free rate		(153,062)
Less: Undiscounted estimated closure and post-closure liabilities relating to airspace not yet consumed		(76,247)
Present value of closure and post-closure liabilities	\$	118,801

(11) REMEDIAL LIABILITIES

The changes to remedial liabilities from January 1, 2021 through December 31, 2022 were as follows (in thousands):

	Remedial Liabilities for Landfill Sites	Remedial Liabilities for Inactive Sites	Remedial Liabilities (Including Superfund) for Non-Landfill Operations	Total
Balance at January 1, 2021	\$ 1,865	\$ 63,060	\$ 49,888	\$ 114,813
Liabilities assumed in acquisitions	—	—	1,216	1,216
Accretion	90	2,614	1,684	4,388
Changes in estimates recorded to consolidated statement of operations	(126)	(178)	600	296
Expenditures	(49)	(4,889)	(3,966)	(8,904)
Currency translation and other	—	(820)	884	64
Balance at December 31, 2021	1,780	59,787	50,306	111,873
Liabilities assumed in acquisition of real estate	—	—	8,092	8,092
Measurement period adjustments from prior period acquisition	—	—	338	338
Accretion	86	2,498	1,607	4,191
Changes in estimates recorded to consolidated statement of operations	8	877	612	1,497
Expenditures	(50)	(3,370)	(5,375)	(8,795)
Currency translation and other	—	(43)	(863)	(906)
Balance at December 31, 2022	\$ 1,824	\$ 59,749	\$ 54,717	\$ 116,290

In 2022, there were no significant charges or benefits resulting from changes in estimates for remedial liabilities. The \$8.1 million liability assumed in acquisition relates to real estate that the Company acquired in 2022. In purchasing the property, the Company assumed a known associated remedial liability, which was contemplated in the purchase price.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Anticipated payments at December 31, 2022 (based on current estimated costs and anticipated timing of necessary regulatory approvals to commence work on remedial activities) for each of the next five years and thereafter were as follows (in thousands):

Years ending December 31,

2023	\$	10,793
2024		20,912
2025		12,065
2026		7,581
2027		6,390
Thereafter		76,416
Undiscounted remedial liabilities		134,157
Less: Discount at risk free rates		(17,867)
Total remedial liabilities	\$	116,290

The following table presents the Company's estimated remedial liabilities and reasonably possible additional liabilities as of December 31, 2022 disaggregated by facility/site type (in thousands, except percentages):

Type of Facility or Site	Remedial Liabilities	% of Total	Reasonably Possible Additional Liabilities ⁽¹⁾
Inactive facilities not used in active conduct of the Company's business, most of which were assumed through prior period acquisitions (25 facilities)	\$ 59,759	51.4 %	\$ 10,295
Facilities now used in active conduct of the Company's business (45 facilities)	47,951	41.2	11,189
Superfund sites (16 sites)	8,580	7.4	1,288
Total	\$ 116,290	100.0 %	\$ 22,772

(1) Amounts represent the high end of the range of management's best estimate of the reasonably possible additional liabilities.

The following table presents the Company's estimated remedial liabilities and reasonably possible additional liabilities as of December 31, 2022 disaggregated by facilities/sites which represent at least 5% of the total and with all other facilities/ sites combined (in thousands, except percentages):

Location	Type of Facility or Site	Remedial Liabilities ⁽¹⁾	% of Total	Reasonably Possible Additional Liabilities ⁽²⁾
Baton Rouge, LA	Closed incinerator and landfill	\$ 26,604	22.9 %	\$ 4,547
Bridgeport, NJ	Closed incinerator	18,089	15.6	3,364
Linden, NJ	Operating solvent recycling center	14,479	12.5	3,352
Mercier, Quebec	Idled incinerator	10,996	9.5	1,659
Various	All other incinerators, landfills, wastewater treatment facilities and service centers (66 facilities)	37,542	32.1	8,562
Various	Superfund sites (each representing less than 5% of total liabilities) (16 sites)	8,580	7.4	1,288
Total		\$ 116,290	100.0 %	\$ 22,772

(1) \$24.1 million of the \$116.3 million remedial liabilities include estimates related to the legal and administrative proceedings discussed in Note 18, "Commitments and Contingencies."

(2) Amounts represent the high end of the range of management's best estimate of the reasonably possible additional liabilities.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Revisions to remediation reserve requirements may result in upward or downward adjustments to income from operations in any given period. The Company believes that its extensive experience in the environmental services business, as well as its involvement with a large number of sites, provides a reasonable basis for estimating its aggregate liability. It is possible, however, that future changes in available technology, regulatory or enforcement developments, the results of environmental studies or other factors could necessitate the recording of additional liabilities or the revision of currently recorded liabilities that could be material. Since the Company's satisfaction of the liabilities will occur over many years, the Company cannot reasonably predict the nature or extent of possible future events or the impact that those events, if any, might have on the current estimates of remedial liabilities.

(12) FINANCING ARRANGEMENTS

Long-term Debt

The following table is a summary of the Company's long-term debt (in thousands):

Current Portion of Long-Term Debt:	December 31, 2022	December 31, 2021
Secured senior term loans	\$ 10,000	\$ 17,535
Long-Term Debt:		
Secured senior term loans due June 30, 2024 ("2024 Term Loans")	\$ 613,975	\$ 712,091
Secured senior term loans due October 8, 2028 ("2028 Term Loans")	980,000	990,000
Unsecured senior notes, at 4.875%, due July 15, 2027 ("2027 Notes")	545,000	545,000
Unsecured senior notes, at 5.125%, due July 15, 2029 ("2029 Notes")	300,000	300,000
Long-term debt, at par	2,438,975	2,547,091
Unamortized debt issuance costs and discount, net	(24,147)	(30,067)
Long-term debt, at carrying value	\$ 2,414,828	\$ 2,517,024

Secured Senior Term Loans.

As of December 31, 2022, the Company had two series of secured senior term loans ("Term Loans") outstanding under Incremental Facility Amendment No. 2, dated October 8, 2021, to the Company's existing Credit Agreement, dated June 30, 2017 ("the Term Loan Agreement").

The 2028 Term Loans had an aggregate principal amount outstanding of \$990.0 million as of December 31, 2022. Under the Term Loan Agreement, the 2028 Term Loans bear interest, at the Company's election, at either of the following rates: (a) the sum of the Eurodollar Rate (as defined in the Term Loan Agreement) plus 2.00%, or (b) the sum of the Base Rate (as defined in the Term Loan Agreement) plus 1.00%, with the Eurodollar Rate being subject to a floor of 0.00% and the Base Rate being subject to a floor of 1.00%. The 2024 Term Loans had an aggregate principal amount outstanding of \$614.0 million as of December 31, 2022. Under the Term Loan Agreement, the 2024 Term Loans bore interest, at the Company's election, at either of the following rates: (a) the sum of the Eurodollar Rate (as defined in the Term Loan Agreement) plus 1.75%, or (b) the sum of the Base Rate (as defined in the Term Loan Agreement) plus 1.00%, with the Eurodollar Rate being subject to a floor of 0.00% and the Based Rate being subject to a floor of 1.00%. Interest on the Term Loans are paid monthly. The Term Loans are prepayable at any time without premium or penalty, other than customary breakage costs with respect to Eurodollar based loans.

The Company's obligations under the Term Loan Agreement with respect to both the 2024 Term Loans and the 2028 Term Loans are guaranteed by all of the Company's domestic restricted subsidiaries and secured by liens on substantially all of the assets of the Company and the guarantors.

On November 21, 2022, the Company repaid \$100.0 million principal amount of the then outstanding 2024 Term Loans with available cash. In connection with this transaction, the Company recorded a loss on early extinguishment of debt of \$0.4 million during the year ended December 31, 2022 related to the write-off of unamortized debt issuance costs for the settled debt. On January 24, 2023, the remaining \$614.0 million principal amount of the 2024 Term Loans was repaid using net proceeds from the issuance of \$500.0 million of unsecured senior notes due on February 1, 2031 as described below, a

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

\$114.0 million loan under the Company's Revolving Credit Facility and available cash. In connection with the repayment, the Company will recognize a loss on early extinguishment of debt of approximately \$2.4 million in 2023.

Unsecured Senior Notes.

On July 2, 2019, the Company completed a private placement of \$545.0 million aggregate principal amount of 2027 Notes and \$300.0 million aggregate principal amount of 2029 Notes. The 2027 Notes will mature on July 15, 2027, and the 2029 Notes will mature on July 15, 2029. Interest payments on the 2027 Notes and 2029 Notes are paid semiannually on January 15 and July 15.

On January 24, 2023, the Company completed a private placement of \$500.0 million aggregate principal amount of unsecured senior notes which mature on February 1, 2031 (the "2031 Notes" and, together with the 2027 and 2029 Notes, the "Notes"). The interest rate on the 2031 Notes is fixed at 6.375% and is paid semiannually on February 1 and August 1 of each year commencing on August 1, 2023.

The tables below depict the redemption prices (expressed as percentages of the principal amount) of the Notes if redeemed during the twelve-month period commencing on the dates below, plus accrued and unpaid interest, if any, to but not including the date of redemption.

2027 Notes	
Year	Percentage
July 15, 2022	102.438 %
July 15, 2023	101.219 %
July 15, 2024 and thereafter	100.000 %

2029 Notes	
Year	Percentage
July 15, 2024	102.563 %
July 15, 2025	101.281 %
July 15, 2026 and thereafter	100.000 %

2031 Notes	
Year	Percentage
February 1, 2026	103.188 %
February 1, 2027	101.594 %
February 1, 2028 and thereafter	100.000 %

The Company may also redeem all or any portion of the 2029 Notes prior to July 15, 2024 or the 2031 Notes prior to February 1, 2026, at a redemption price equal to 100% of the principal amount redeemed plus a make whole premium as of the date of redemption including accrued and unpaid interest, if any, up to but not including the date of redemption.

Additionally, subject to certain limitations, prior to February 1, 2026, the Company may use net cash proceeds of one or more equity offerings to redeem up to 40% in aggregate principal of the 2031 Notes at a redemption price equal to 106.375% of the principal amount thereof plus accrued and unpaid interest thereon, if any, up to but not including the date of redemption.

The Notes and the related indentures contain various customary non-financial covenants and are guaranteed by substantially all of the Company's current and future domestic subsidiaries. The Notes are effectively subordinated to the Company's Term Loans, revolving credit facility and finance lease obligations to the extent of the value of the assets securing such secured indebtedness. The Notes are also effectively subordinated to all indebtedness and other liabilities of the Company's subsidiaries that are not guarantors of the Notes.

As of December 31, 2022 and 2021, the estimated fair value of the Company's outstanding long-term debt, including the current portion, was \$2.4 billion and \$2.6 billion, respectively. The Company's estimates of the fair value of its long-term debt, including the current portion, are based on quoted market prices or other available market data which are considered Level 2 measures according to the fair value hierarchy. Level 2 utilizes quoted market prices in markets that are not active, broker or dealer quotation, or alternative pricing sources with reasonable levels of price transparency for similar assets and liabilities.

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Revolving Credit Facility. On October 28, 2020, the Company and one of the Company's subsidiaries (the "Canadian Borrower") entered into an amended and restated credit agreement for the Company's revolving credit facility with Bank of America, N.A. ("BofA"), as agent for the lenders under the facility (the "Agent"). Under the amended and restated facility, the Company has the right to obtain revolving loans and letters of credit for a combined maximum of up to \$350.0 million (with a sub-limit of \$250.0 million for letters of credit) and the Canadian Borrower has the right to obtain revolving loans and letters of credit for a combined maximum of up to \$50.0 million. Availability under the U.S. line is subject to a borrowing base primarily comprised of 85% of the eligible accounts receivable of the Company and its U.S. subsidiaries plus 100% of cash deposited in a controlled account with the Agent, and availability under the Canadian line is subject to a borrowing base primarily comprised of 85% of the eligible accounts receivable of the Company's Canadian subsidiaries plus 100% of cash deposited in a controlled account with the Agent's Canadian affiliate. Subject to certain conditions, the revolving credit facility will expire on October 28, 2025.

Borrowings under the revolving credit facility bear interest at a rate of, at the Company's option, either (i) LIBOR plus an applicable margin ranging from 1.50% to 1.75% per annum based primarily on the level of the Company's average liquidity for the most recent 30 day period or (ii) BofA's base rate plus an applicable margin ranging from 0.50% to 0.75% per annum based primarily on such average liquidity. There is also an unused line fee, calculated on the then unused portion of the lenders' \$400.0 million maximum commitments, ranging from 0.25% to 0.375% per annum of the unused commitment. For outstanding letters of credit, the Company pays to the lenders a fee equal to the then applicable LIBOR margin described above, and to the issuing banks a standard fronting fee and customary fees and charges in connection with all amendments, extensions, draws and other actions with respect to letters of credit. In the event that LIBOR ceases to be available during the term of the revolving credit facility, the amended and restated credit agreement provides procedures to determine a LIBOR successor rate.

Letters of credit issued under the revolving credit facility are utilized primarily as security for the Company's insurance program that includes casualty and financial assurance.

The Company's obligations under the revolving credit facility (including revolving loans and reimbursement obligations for outstanding letters of credit) are guaranteed by substantially all of the Company's U.S. subsidiaries and secured by a first lien on the Company's and its U.S. subsidiaries' accounts receivable. The Canadian Borrower's obligations under the facility are guaranteed by substantially all of the Company's Canadian subsidiaries and secured by a first lien on the accounts receivable of the Canadian subsidiaries.

The revolving credit facility had no outstanding loan balances at December 31, 2022 and 2021 and had availability of \$288.6 million and outstanding letters of credit of \$111.4 million at December 31, 2022. As noted above, on January 24, 2023, the Company borrowed \$114.0 million under the revolving credit facility. Proceeds from this borrowing were used toward the repayment of the 2024 Term Loans.

Cash Flow Hedges

Although the interest rates on the Term Loans are variable, as of December 31, 2022, the Company effectively fixed the interest rate on \$350.0 million principal of the outstanding 2024 Term Loans by entering into interest rate swap agreements in 2018 with a notional amount of \$350.0 million ("2018 Swaps"). Under the terms of the 2018 Swaps' agreements, the Company receives interest based on the one-month LIBOR index and pays interest at a weighted average rate of approximately 2.92%, which together with the 1.75% interest rate margin for Eurocurrency borrowings on the 2024 Term Loans, results in an effective annual interest rate of approximately 4.67%.

In January 2022, the Company entered into interest rate swap agreements ("2022 Swaps") with a notional amount of \$600.0 million to effectively fix the interest rate on \$600.0 million principal of the outstanding 2028 Term Loans. Under the terms of the 2022 Swaps' agreements, the Company will receive interest based upon the variable rates on the 2028 Term Loans and pay a fixed amount of interest. The fixed rate on these instruments is 0.931% through June 30, 2023 which, together with the 2.00% interest rate margin for Eurodollar borrowings on the 2028 Term Loans, results in an effective annual interest rate of approximately 2.931%. The fixed rate on these instruments increases to 1.9645% from July 1, 2023 through September 30, 2027 to both mirror the current 2028 Term Loans variable interest payments and the successor rate upon the eventual sunset of the LIBOR rate.

The Company has designated both the 2018 Swaps and the 2022 Swaps (collectively referred to as the "Swaps") as cash flow hedges. As of December 31, 2022 the Company recorded a derivative asset with a fair value of \$60.6 million. As of December 31, 2021, the Company recorded a derivative liability of \$17.4 million. No ineffectiveness has been recognized on the Swaps in 2022, 2021 or 2020.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

On January 24, 2023, concurrently with the repayment of the 2024 Term Loans, the Company received a cash payment of \$8.7 million from the counterparties to settle the 2018 Swaps. The Company also reclassified the amounts previously deferred in accumulated other comprehensive loss and recognized an \$8.7 million gain in interest expense.

(13) INCOME TAXES

The domestic and foreign components of income before provision for income taxes were as follows (in thousands):

	For the years ended December 31,		
	2022	2021	2020
Domestic	\$ 406,206	\$ 223,438	\$ 168,117
Foreign	131,792	46,277	6,433
Total	\$ 537,998	\$ 269,715	\$ 174,550

The provision for income taxes consisted of the following (in thousands, except percentages):

	For the years ended December 31,		
	2022	2021	2020
Current:			
Federal	\$ 52,237	\$ 42,480	\$ 33,327
State	26,980	18,126	14,575
Foreign	29,488	4,380	1,559
	108,705	64,986	49,461
Deferred			
Federal	32,199	2,275	(965)
State	(2,432)	(4,777)	(2,506)
Foreign	(12,218)	3,984	(6,277)
	17,549	1,482	(9,748)
Provision for income taxes	\$ 126,254	\$ 66,468	\$ 39,713

Effective tax rate	23.5%	24.6%	22.8%
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The Company's effective income tax rate varied from the amount computed using the statutory federal income tax rate of 21% as follows (in thousands):

	For the years ended December 31,		
	2022	2021	2020
Tax expense at U.S. statutory rate	\$ 112,980	\$ 56,640	\$ 36,655
State income taxes, net of federal benefit	19,831	12,101	9,837
Foreign rate differential	6,196	1,922	1,256
Valuation allowance	(18,769)	(9,139)	(11,339)
Uncertain tax position interest and penalties	(2,454)	263	(712)
Tax credits expired	2,768	2,530	2,039
Non-deductible compensation	2,754	2,326	1,406
Other	2,948	(175)	571
Provision for income taxes	\$ 126,254	\$ 66,468	\$ 39,713

The valuation allowance benefits recognized in 2022 were the result of cumulative profitable earnings at certain Canadian entities with historic operating losses. The 2022 earnings were sufficient to utilize substantially all of the net operating losses, and as of December 31, 2022, the Company released any remaining valuation allowances associated with these entities, which were nominal.

The valuation allowance benefits recognized in 2021 and 2020 were predominately related to taxable earnings in certain Canadian entities that benefited from amounts received under the Canada Emergency Wage Subsidiary. In addition, foreign tax credits that expired in the periods presented had full valuation allowances which were also written off, contributing to the

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

valuation allowance benefits in the table above. The foreign tax credit expirations and associated valuation allowance write-offs had no net impact to the provision for income taxes in any year.

The components of the total net deferred tax assets and liabilities as of December 31, 2022 and 2021 were as follows (in thousands):

	2022	2021
Deferred tax assets:		
Provision for doubtful accounts	\$ 11,544	\$ 10,188
Closure, post-closure and remedial liabilities	31,837	28,206
Operating lease liabilities	42,255	42,218
Accrued expenses	19,311	20,455
Accrued compensation and benefits	20,171	24,504
Net operating loss carryforwards ⁽¹⁾	41,585	68,381
Tax credit carryforwards ⁽²⁾	8,903	12,368
Interest rate swap liability	—	5,215
Stock-based compensation	3,988	2,705
Other	7,487	5,635
Total deferred tax assets	187,081	219,875
Deferred tax liabilities:		
Property, plant and equipment	(281,131)	(273,883)
Operating lease right-of-use assets	(41,939)	(41,260)
Interest rate swap asset	(17,587)	—
Permits and other intangible assets	(132,681)	(138,241)
Prepaid expenses	(12,088)	(10,212)
Total deferred tax liabilities	(485,426)	(463,596)
Total net deferred tax liability before valuation allowance	(298,345)	(243,721)
Less valuation allowance	(42,509)	(69,806)
Net deferred tax liabilities	\$ (340,854)	\$ (313,527)

(1) As of December 31, 2022, the net operating loss carryforwards included (i) state net operating loss carryforwards of \$231.4 million which will begin to expire in 2023, (ii) federal net operating loss carryforwards of \$34.8 million which will begin to expire in 2024 and (iii) foreign net operating loss carryforwards of \$85.6 million which will begin to expire in 2023.

(2) As of December 31, 2022, the foreign tax credit carryforwards of \$7.7 million will expire between 2023 and 2024.

The Company previously recognized the U.S. federal income taxes related to the operations in Canada and has not accrued for any remaining undistributed foreign earnings. These amounts continue to be indefinitely reinvested. The amount of tax associated with those unrepatriated earnings is not expected to be material.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

A valuation allowance is required to be established when, based on an evaluation of available evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. The components of the total valuation allowance as of December 31, 2022 and 2021 were as follows (in thousands):

	2022	2021
Allowance related to:		
Foreign tax credits	7,666	11,047
Federal net operating losses	3,783	3,788
State net operating loss carryforwards	9,928	12,053
Foreign net operating loss carryforwards	15,488	26,697
Deferred tax assets of a Canadian subsidiary	5,339	10,701
Realized and unrealized capital losses	305	5,520
Total valuation allowance	<u>\$ 42,509</u>	<u>\$ 69,806</u>

The Company files U.S. federal income tax returns as well as income tax returns in various states and foreign jurisdictions. The Company may be subject to examination by the Internal Revenue Service for calendar years 2017 through 2021. The Company may be subject to examination by Canadian federal and provincial authorities for calendar years 2015 through 2021 and by state and local revenue authorities for calendar years 2016 through 2021. The Company has ongoing U.S., state and local jurisdictional audits, as well as Canadian federal and provincial audits, all of which the Company believes will not result in material liabilities. The Company has not identified any material uncertain positions in the periods presented.

(14) EARNINGS PER SHARE

The following are computations of basic and diluted earnings per share (in thousands, except for per share amounts):

	For the years ended December 31,		
	2022	2021	2020
Numerator for basic and diluted earnings per share:			
Net income	\$ 411,744	\$ 203,247	\$ 134,837
Denominator:			
Weighted basic shares outstanding	54,223	54,514	55,479
Dilutive effect of equity-based compensation awards	264	247	211
Weighted dilutive shares outstanding	<u>54,487</u>	<u>54,761</u>	<u>55,690</u>
Basic earnings per share	<u>\$ 7.59</u>	<u>\$ 3.73</u>	<u>\$ 2.43</u>
Diluted earnings per share	<u>\$ 7.56</u>	<u>\$ 3.71</u>	<u>\$ 2.42</u>

For the year ended December 31, 2022, all then outstanding performance stock awards and restricted stock awards were included in the calculation of diluted earnings per share except for 10,250 of restricted stock awards which were excluded as their inclusion would have had an antidilutive effect. For the years ended 2021 and 2020, all the outstanding performance stock awards and restricted stock awards were included in the calculation of diluted earnings per share except for 14,237 and 53,667, respectively, of performance stock awards for which the performance criteria were not yet attained at the reporting dates and 67,981 and 8,878, respectively, of restricted stock awards which were excluded as their inclusion would have had an antidilutive effect.

(15) STOCKHOLDERS' EQUITY

The Company's board of directors has authorized the repurchase of up to \$600.0 million of the Company's common stock. The repurchase program authorizes the Company to purchase the Company's common stock on the open market or in privately negotiated transactions periodically in a manner that complies with applicable U.S. securities laws. The number of shares purchased and the timing of the purchases have depended and will depend on a number of factors including share price, cash required for future business plans, trading volume and other conditions. The Company has no obligation to repurchase stock under this program and may suspend or terminate the repurchase program at any time.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

During the years ended December 31, 2022, 2021 and 2020, the Company repurchased and retired a total of 0.5 million, 0.6 million and 1.2 million shares, respectively, of the Company's common stock for total costs of \$50.2 million, \$54.4 million and \$74.8 million, respectively. As of December 31, 2022, an additional \$105.3 million remained available to repurchase shares under this program.

(16) ACCUMULATED OTHER COMPREHENSIVE LOSS

The changes in accumulated other comprehensive loss by component and related tax impacts for the years ended December 31, 2022, 2021 and 2020 were as follows (in thousands):

	Foreign Currency Translation Adjustments	Unrealized Gain (Loss) on Available-For- Sale Securities	Unrealized (Loss) Gain on Fair Value of Interest Rate Hedges	Unrealized Loss on Unfunded Pension Liability	Total
Balance at January 1, 2020	\$ (187,795)	\$ 143	\$ (20,839)	\$ (1,560)	\$ (210,051)
Other comprehensive income (loss) before reclassifications	10,212	(10)	(20,970)	(255)	(11,023)
Amounts reclassified out of accumulated other comprehensive loss	—	—	8,180	—	8,180
Tax benefit	1,349	2	—	66	1,417
Other comprehensive income (loss)	11,561	(8)	(12,790)	(189)	(1,426)
Balance at December 31, 2020	(176,234)	135	(33,629)	(1,749)	(211,477)
Other comprehensive (loss) income before reclassifications	(1,590)	(361)	6,235	1,411	5,695
Amounts reclassified out of accumulated other comprehensive loss	—	—	10,011	—	10,011
Tax benefit (provision)	—	76	—	(317)	(241)
Other comprehensive (loss) income	(1,590)	(285)	16,246	1,094	15,465
Balance at December 31, 2021	(177,824)	(150)	(17,383)	(655)	(196,012)
Other comprehensive (loss) income before reclassifications	(31,515)	(523)	78,711	415	47,088
Amounts reclassified out of accumulated other comprehensive loss	—	—	(683)	—	(683)
Tax benefit (provision)	—	110	(17,587)	(97)	(17,574)
Other comprehensive (loss) income	(31,515)	(413)	60,441	318	28,831
Balance at December 31, 2022	<u>\$ (209,339)</u>	<u>\$ (563)</u>	<u>\$ 43,058</u>	<u>\$ (337)</u>	<u>\$ (167,181)</u>

The amounts realized in the consolidated statements of operations during the years ended December 31, 2022, 2021 and 2020 which were reclassified out of accumulated other comprehensive loss were as follows (in thousands):

Other Comprehensive Loss Component	For the years ended December 31,			Location
	2022	2021	2020	
Unrealized (Loss) Gain on Fair Value of Interest Rate Hedges	683	(10,011)	(8,180)	Interest expense, net of interest income

In the first quarter of 2023, the Company reclassified an unrealized gain of \$8.7 million out of unrealized (loss) gain on fair value of interest rate hedges into interest expense in connection with the discontinuance of the 2018 Swap. For more information on this transaction, see Note 12, "Financing Arrangements."

(17) STOCK-BASED COMPENSATION
Stock-Based Compensation

In 2020, the Company's shareholders approved the Clean Harbors, Inc. 2020 Stock Incentive Plan (the "2020 Plan"). The 2020 Plan provides for future awards of up to 2.5 million shares of the Company's common stock (subject to certain anti-dilution adjustments) in the form of stock options, stock appreciation rights, restricted stock, restricted stock units and other stock-based awards. The 2020 Plan is administered by the Compensation Committee of the Company's Board of Directors.

The Company grants restricted stock awards and performance stock awards. The restricted stock awards generally vest over three to five years subject to continued employment. The performance stock awards vest depending on the satisfaction of certain performance conditions typically based on revenue, Adjusted EBITDA, Adjusted EBITDA margin, Adjusted free cash

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

flow, return on invested capital and a measure of workplace safety. In addition, performance stock awards include continued service conditions subsequent to the attainment of any performance conditions.

Total stock-based compensation expense for the years ended December 31, 2022, 2021 and 2020 was \$26.8 million, \$18.8 million and \$18.5 million, respectively. The total income tax benefit recognized in the consolidated statements of operations from stock-based compensation expense was \$5.0 million, \$3.5 million and \$4.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Restricted Stock Awards

The following table summarizes information about restricted stock awards for the year ended December 31, 2022:

Restricted Stock	Number of Shares	Weighted Average Grant-Date Fair Value
Balance at January 1, 2022	452,197	\$ 76.88
Granted	165,149	94.88
Vested	(167,086)	74.37
Forfeited	(23,118)	80.17
Balance at December 31, 2022	427,142	\$ 84.64

As of December 31, 2022, there was \$25.6 million of total unrecognized compensation cost arising from restricted stock awards. This cost is expected to be recognized over a weighted average period of 2.5 years. The total fair value of restricted stock vested during 2022, 2021 and 2020 was \$16.4 million, \$17.7 million and \$13.3 million, respectively.

Performance Stock Awards

The following table summarizes information about performance stock awards for the year ended December 31, 2022:

Performance Stock	Number of Shares	Weighted Average Grant-Date Fair Value
Balance at January 1, 2022	169,757	\$ 85.56
Granted	156,687	92.60
Vested	(100,892)	83.51
Forfeited	(11,873)	86.87
Balance at December 31, 2022	213,679	\$ 91.62

As of December 31, 2022, there was \$9.3 million of total unrecognized compensation cost arising from performance stock awards whereby the performance conditions either had been or were probable of being met. The total fair value of performance awards vested during 2022, 2021 and 2020 was \$11.1 million, \$15.0 million and \$3.5 million, respectively.

(18) COMMITMENTS AND CONTINGENCIES

The Company and its subsidiaries are subject to legal proceedings and claims arising in the ordinary course of business. Actions filed against the Company arise from commercial and employment-related claims including alleged class actions related to sales practices and wage and hour claims. The plaintiffs in these actions may be seeking damages or injunctive relief or both. These actions are in various jurisdictions and stages of proceedings, and some are covered in part by insurance. In addition, the Company's waste management services operations are regulated by federal, state, provincial and local laws enacted to regulate discharge of materials into the environment, remediation of contaminated soil and groundwater or otherwise protect the environment. This ongoing regulation results in the Company frequently becoming a party to legal or administrative proceedings involving all levels of government authorities and other interested parties. The issues involved in such proceedings generally relate to alleged violations of existing permits and licenses or alleged responsibility under federal or state Superfund laws to remediate contamination at properties owned either by the Company or by other parties ("third-party sites") to which either the Company or the prior owners of certain of the Company's facilities shipped waste.

At December 31, 2022 and 2021, the Company had recorded reserves of \$37.1 million and \$36.1 million, respectively, for actual or probable liabilities related to the legal and administrative proceedings in which the Company was then involved, the principal of which are described below. As of December 31, 2022 and 2021, the \$37.1 million and \$36.1 million, respectively,

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

of reserves consisted of (i) \$24.1 million in both periods, related to pending legal or administrative proceedings, including Superfund liabilities, which were included in remedial liabilities on the consolidated balance sheets, and (ii) \$13.0 million and \$12.0 million, respectively, primarily related to federal, state and provincial enforcement actions, which were included in accrued expenses on the consolidated balance sheets.

In management's opinion, it is not reasonably possible that the potential liability beyond what has been recorded, if any, that may result from these actions, either individually or collectively, will have a material effect on the Company's financial position, results of operations or cash flows. The Company periodically adjusts the aggregate amount of these reserves when actual or probable liabilities are paid or otherwise discharged, new claims arise, or additional relevant information about existing or probable claims becomes available.

Legal or Administrative Proceedings

As of December 31, 2022, the principal legal and administrative proceedings in which the Company was involved, or which had been terminated during 2022, mainly relate to Safety-Kleen product liability cases and Superfund proceedings.

Safety-Kleen Product Liability Cases: Safety-Kleen, Inc. ("Safety-Kleen"), which is a legal entity acquired by the Company in 2012, has been named as a defendant in certain product liability cases that are currently pending in various courts and jurisdictions throughout the United States. As of December 31, 2022, there were approximately 54 proceedings (excluding cases which have been settled but not formally dismissed) wherein persons claim personal injury resulting from the use of Safety-Kleen's parts cleaning equipment or cleaning products. These proceedings typically involve allegations that the solvent used in Safety-Kleen's parts cleaning equipment contains contaminants and/or that Safety-Kleen's recycling process does not effectively remove the contaminants that become entrained in the solvent during their use. In addition, certain claimants assert that Safety-Kleen failed to warn adequately the product user of potential risks, including a historic failure to warn that solvent contains trace amounts of toxic or hazardous substances such as benzene.

The Company maintains insurance that it believes will provide coverage for these product liability claims (over amounts accrued for self-insured retentions and deductibles in certain limited cases), except for punitive damages to the extent not insurable under state law or excluded from insurance coverage. The Company also believes that these claims lack merit and has historically vigorously defended, and intends to continue to vigorously defend, itself and the safety of its products against all of these claims. Such matters are subject to many uncertainties and outcomes are not predictable with assurance. Consequently, the Company is unable to ascertain the ultimate aggregate amount of monetary liability or financial impact with respect to these matters as of December 31, 2022. From January 1, 2022 to December 31, 2022, 20 product liability claims were settled or dismissed. Due to the nature of these claims and the related insurance, the Company did not incur any expense as insurance provided coverage in full for all such claims. Safety-Kleen may be named in similar, additional lawsuits in the future, including claims for which insurance coverage may not be available.

Superfund Proceedings: The Company has been notified that either the Company (which, since December 28, 2012, has included Safety-Kleen) or the prior owners of certain of the Company's facilities for which the Company may have certain indemnification obligations have been identified as PRPs or potential PRPs in connection with 131 sites which are subject to or are proposed to become subject to proceedings under federal or state Superfund laws. Of the 131 Superfund related sites, six involve facilities that are now owned or leased by the Company and 125 involve third-party sites to which either the Company or the prior owners of certain of the Company's facilities shipped waste. Of the 125 third-party sites, 30 are now settled, 16 are currently requiring expenditures on remediation and 79 are not currently requiring expenditures on remediation.

In connection with each site, the Company has estimated the extent, if any, to which it may be subject, either directly or as a result of any indemnification obligations, for cleanup and remediation costs, related legal and consulting costs associated with PRP investigations, settlements, and related legal and administrative proceedings. The amount of such actual and potential liability is inherently difficult to estimate because of, among other relevant factors, uncertainties as to the legal liability (if any) of the Company or the prior owners of certain of the Company's facilities to contribute a portion of the cleanup costs, the assumptions that must be made in calculating the estimated cost and timing of remediation, the identification of other PRPs and their respective capability and obligation to contribute to remediation efforts, and the existence and legal standing of indemnification agreements (if any) with prior owners, which may either benefit the Company or subject the Company to potential indemnification obligations. The Company believes its potential monetary liability could exceed \$1.0 million at three of the 131 Superfund related sites.

Of the 125 third-party sites at which the Company has been notified it is a PRP or potential PRP or may have indemnification obligations, the Company has an indemnification agreements at a total of 17 sites. These agreements indemnify the Company (which now includes Safety-Kleen) with respect to any liability at the 17 sites for waste disposed prior to the

CLEAN HARBORS, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Company's (or Safety-Kleen's) acquisition of the former subsidiaries of Waste Management and McKesson which had shipped waste to those sites. Accordingly, the indemnifying parties are paying all costs of defending those subsidiaries in those 17 cases, including legal fees and settlement costs. However, there can be no guarantee that the Company's ultimate liabilities for those sites will not exceed the amount recorded or that indemnities applicable to any of these sites will be available to pay all or a portion of related costs. Except for those indemnification agreements discussed, the Company does not have an indemnity agreement with respect to any of the 125 third-party sites discussed above.

Federal, State and Provincial Enforcement Actions

From time to time, the Company pays fines or penalties in regulatory proceedings relating primarily to waste treatment, storage or disposal facilities. As of December 31, 2022, there was one proceeding for which the Company believes it is possible that the sanctions could equal or exceed \$1.0 million. The Company believes that the fines or other penalties in this or any of the other regulatory proceedings will, individually or in the aggregate, not have a material effect on its financial condition, results of operations or cash flows.

Self-Insurance Liabilities

Under the Company's insurance programs, coverage is obtained for catastrophic exposures, as well as those risks required to be insured by law or contract. The Company's policy is to retain a significant portion of certain expected losses related to workers' compensation, employee medical, comprehensive general liability and vehicle liability. A portion of these self-insured liabilities are managed through its wholly-owned captive insurance subsidiary.

Provisions for losses expected under these programs are recorded based upon the Company's estimates of the aggregate liability for claims. The current deductible per participant per year for the employee medical insurance policy is \$0.9 million. The current deductible per occurrence for workers' compensation is \$1.0 million, general liability is \$2.0 million and vehicle liability is \$2.0 million. The retention per claim for the environmental impairment policy is \$1.0 million. At December 31, 2022 and 2021, the Company had accrued \$74.9 million and \$82.8 million, respectively, for its self-insurance liabilities (exclusive of employee medical insurance) using a risk-free discount rate of 4.36% and 0.97%, respectively.

Anticipated payments for contingencies related to workers' compensation, comprehensive general liability and vehicle liability related claims at December 31, 2022 for each of the next five years and thereafter were as follows (in thousands):

Years ending December 31,	
2023	\$ 26,736
2024	16,317
2025	12,172
2026	8,170
2027	6,318
Thereafter	10,631
Undiscounted self-insurance liabilities	80,344
Less: Discount	(5,452)
Total self-insurance liabilities (included in accrued expenses)	\$ 74,892

(19) LEASES

The Company's lease portfolio is predominately operating leases for real estate, vehicles and industrial equipment utilized in operations and rail cars. The Company presents operating lease balances separately on the consolidated balance sheets. The Company's finance leases relate to equipment, rail cars and certain real estate. The following table presents the Company's finance lease balances and their classification on the consolidated balance sheets (in thousands):

Finance Lease Balances (Classification)	December 31, 2022	December 31, 2021
ROU assets (Property, plant and equipment, net)	\$ 96,207	\$ 81,267
Current portion of lease liabilities (Accrued expenses)	12,767	10,893
Long-term portion of lease liabilities (Other long-term liabilities)	86,390	72,051

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The Company's lease expense was as follows (in thousands):

	For the years ended December 31,		
	2022	2021	2020
Operating lease cost	\$ 59,041	\$ 50,264	\$ 53,194
Finance lease cost:			
Amortization of ROU assets	13,239	9,504	4,966
Interest on lease liabilities	3,011	2,544	1,523
Total finance lease cost	16,250	12,048	6,489
Short-term lease cost	158,736	102,913	70,692
Variable lease cost	4,353	3,546	3,691
Total lease cost	\$ 238,380	\$ 168,771	\$ 134,066

Other information related to leases was as follows:

Weighted Average Remaining Lease Term (years)	December 31, 2022	December 31, 2021
Operating leases	4.2	4.4
Finance leases	7.5	8.1
Weighted Average Discount Rate	December 31, 2022	December 31, 2021
Operating leases	4.08 %	4.35 %
Finance leases	3.53 %	3.65 %

Supplemental Cash Flow Related Disclosures (in thousands)	For the years ended December 31,		
	2022	2021	2020
Cash paid for amounts related to lease liabilities:			
Operating cash flows from operating leases	\$ 61,014	\$ 50,963	\$ 53,498
Operating cash flows from finance leases	3,011	2,544	1,523
Financing cash flows from finance leases	12,821	8,458	4,469
ROU assets obtained in exchange for operating lease liabilities	58,230	55,556	34,358
ROU assets obtained in exchange for finance lease liabilities	29,205	30,476	32,526

At December 31, 2022, the Company's future lease payments under non-cancelable leases that have lease terms in excess of one year were as follows (in thousands):

Years ending December 31,	December 31, 2022	
	Operating Leases	Finance Leases
2023	\$ 57,757	\$ 17,085
2024	45,478	16,423
2025	32,739	15,748
2026	23,791	15,761
2027	14,635	15,748
Thereafter	11,564	33,950
Total future lease payments	185,964	114,715
Amount representing interest	(17,173)	(15,558)
Total lease liabilities	\$ 168,791	\$ 99,157

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

At December 31, 2022, none of the Company's executed leases that had not yet commenced will create significant rights or obligations in the future and sublease transactions are not material. Additionally, the Company does not have any related party leases, and there were no restrictions or covenants imposed by its leases.

(20) SEGMENT REPORTING

Segment reporting is prepared on the same basis that the Company's chief executive officer, who is the Company's chief operating decision maker, manages the business, makes operating decisions and assesses performance. The Company is managed and reports as two operating segments; (i) the Environmental Services segment and (ii) the Safety-Kleen Sustainability Solutions segment.

Third-party revenue is revenue billed to outside customers by a particular segment. Direct revenues is revenue allocated to the segment providing the product or service. Intersegment revenues represent the sharing of third-party revenues among the segments based on products and services provided by each segment as if the products and services were sold directly to the third-party. The intersegment revenues are shown net. The operations not managed through the Company's operating segments described above are recorded as "Corporate Items."

The following tables reconcile third-party revenues to direct revenues for the years ended December 31, 2022, 2021 and 2020 (in thousands):

	For the year ended December 31, 2022			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate Items	Totals
Third-party revenues	\$ 4,144,973	\$ 1,021,125	\$ 507	\$ 5,166,605
Intersegment revenues (expense), net	26,733	(26,733)	—	—
Direct revenues	<u>\$ 4,171,706</u>	<u>\$ 994,392</u>	<u>\$ 507</u>	<u>\$ 5,166,605</u>

	For the year ended December 31, 2021			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate Items	Totals
Third-party revenues	\$ 3,025,907	\$ 779,360	\$ 299	\$ 3,805,566
Intersegment revenues (expense), net	6,547	(6,547)	—	—
Direct revenues	<u>\$ 3,032,454</u>	<u>\$ 772,813</u>	<u>\$ 299</u>	<u>\$ 3,805,566</u>

	For the year ended December 31, 2020			
	Environmental Services	Safety-Kleen Sustainability Solutions	Corporate Items	Totals
Third-party revenues	\$ 2,637,641	\$ 506,166	\$ 290	\$ 3,144,097
Intersegment revenues (expense), net	(1,740)	1,740	—	—
Direct revenues	<u>\$ 2,635,901</u>	<u>\$ 507,906</u>	<u>\$ 290</u>	<u>\$ 3,144,097</u>

The primary financial measure by which the Company evaluates the performance of its segments is Adjusted EBITDA, which consists of net income plus accretion of environmental liabilities, stock-based compensation, depreciation and amortization, net interest expense, loss on early extinguishment of debt and provision for income taxes and excludes other gains, losses and non-cash charges not deemed representative of fundamental segment results and other expense (income), net. Transactions between the segments are accounted for at the Company's best estimate based on similar transactions with outside customers.

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

The following table presents Adjusted EBITDA information used by management by reported segment (in thousands):

	For the years ended December 31,		
	2022	2021	2020
Adjusted EBITDA:			
Environmental Services	\$ 953,053	\$ 659,718	\$ 665,918
Safety-Kleen Sustainability Solutions	306,327	227,354	83,214
Corporate Items	(237,252)	(210,466)	(175,328)
Total	1,022,128	676,606	573,804
Reconciliation to Consolidated Statements of Operations:			
Accretion of environmental liabilities	12,943	11,745	11,051
Stock-based compensation	26,844	18,839	18,502
Depreciation and amortization	347,594	298,135	292,915
Income from operations	634,747	347,887	251,336
Other (income) expense, net	(2,472)	515	290
Loss on early extinguishment of debt	422	—	—
(Gain) loss on sale of businesses	(8,864)	—	3,376
Interest expense, net of interest income	107,663	77,657	73,120
Income from operations before provision for income taxes	\$ 537,998	\$ 269,715	\$ 174,550

The following table presents assets by reported segment and in the aggregate (in thousands):

	December 31, 2022	December 31, 2021
Property, plant and equipment, net		
Environmental Services	\$ 1,467,641	\$ 1,374,913
Safety-Kleen Sustainability Solutions	398,660	373,721
Corporate Items	114,001	114,541
Total property, plant and equipment, net	\$ 1,980,302	\$ 1,863,175
Goodwill and Permits and other intangibles, net		
Environmental Services		
Goodwill	\$ 1,071,846	\$ 1,085,534
Permits and other intangibles, net	462,050	498,739
Total Environmental Services	1,533,896	1,584,273
Safety-Kleen Sustainability Solutions		
Goodwill	\$ 175,032	\$ 141,508
Permits and other intangibles, net	158,732	146,173
Total Safety-Kleen Sustainability Solutions	333,764	287,681
Total	\$ 1,867,660	\$ 1,871,954

CLEAN HARBORS, INC. AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

Geographic Information

As of December 31, 2022 and 2021, the Company had property, plant and equipment, net of depreciation and amortization and permits and other intangible assets, net of amortization in the following geographic locations (in thousands):

	December 31, 2022		December 31, 2021	
	Total	% of Total	Total	% of Total
Property, plant and equipment, net				
United States	\$ 1,765,291	89.1 %	\$ 1,610,402	86.4 %
Canada and other foreign	215,011	10.9	252,773	13.6
Total property, plant and equipment, net	<u>\$ 1,980,302</u>	<u>100.0 %</u>	<u>\$ 1,863,175</u>	<u>100.0 %</u>
Permits and other intangibles, net				
United States	\$ 585,887	94.4 %	\$ 604,076	93.7 %
Canada and other foreign	34,895	5.6	40,836	6.3
Total permits and other intangibles, net	<u>\$ 620,782</u>	<u>100.0 %</u>	<u>\$ 644,912</u>	<u>100.0 %</u>

The following table presents the total assets by geographical area (in thousands):

	December 31, 2022	December 31, 2021
United States	\$ 5,595,255	\$ 5,077,585
Canada and other foreign	534,452	576,114
Total	<u>\$ 6,129,707</u>	<u>\$ 5,653,699</u>

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

Based on an evaluation under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, as of the end of the period covered by this Annual Report on Form 10-K, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures (as defined under Rule 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) were effective as of December 31, 2022 to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting, as that term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of the Company's management, including the Chief Executive Officer and Chief Financial Officer, the Company conducted an evaluation of its 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.

The Company's management evaluated the effectiveness of Clean Harbors internal control over financial reporting as of December 31, 2022. Based on their evaluation under the framework in *Internal Control—Integrated Framework (2013)*, the Company's management concluded that the Company maintained effective internal control over financial reporting as of December 31, 2022 based on the criteria in the *Internal Control—Integrated Framework (2013)*.

Deloitte & Touche LLP, the independent registered public accounting firm that audited the Company's consolidated financial statements, has issued an attestation report on the effectiveness of the Company's internal control over financial reporting as of December 31, 2022, which is included below in this Item 9A of this Annual Report on Form 10-K.

Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Exchange Act Rules 13a-15 or 15d-15 that was conducted during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

Limitations on the Effectiveness of Controls

The Company's management, including the Chief Executive Officer and Chief Financial Officer, does not expect that the Company's disclosure controls and procedures or the Company's internal control over financial reporting will prevent all errors and all fraud.

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.

Further, the design of disclosure controls and procedures and internal control over financial reporting must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations of controls and procedures and internal control over financial reporting, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the stockholders and the Board of Directors of Clean Harbors, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Clean Harbors, Inc. and subsidiaries (the “Company”) 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 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 COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2022, of the Company and our report dated March 1, 2023 expressed an unqualified opinion on those financial statements.

Basis for Opinion

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

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ Deloitte & Touche LLP

Boston, Massachusetts
March 1, 2023

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

Except for the information set forth below under Item 12 with respect to securities authorized for issuance under the registrant's equity compensation plans, the information called for by Item 10 (Directors, Executive Officers and Corporate Governance), Item 11 (Executive Compensation), Item 12 (Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters), Item 13 (Certain Relationships and Related Transactions and Director Independence) and Item 14 (Principal Accountant Fees and Services) is incorporated herein by reference to the registrant's definitive proxy statement for its 2023 annual meeting of shareholders, which definitive proxy statement will be filed with the Securities and Exchange Commission by April 13, 2023.

For the purpose of calculating the aggregate market value of the voting stock of the registrant held by non-affiliates as shown on the cover page of this report, it has been assumed that the directors and executive officers of the registrant, as will be set forth in the Company's definitive proxy statement for its 2023 annual meeting of shareholders, are the only affiliates of the registrant. However, this should not be deemed to constitute an admission that all of such persons are, in fact, affiliates or that there are not other persons who may be deemed affiliates of the registrant.

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

In addition to the information about the security ownership of certain beneficial owners and management and related stockholder matters which is incorporated herein by reference to the Company's definitive proxy statement for the Company's 2023 annual meeting of shareholders, the following table includes information as of December 31, 2022 regarding shares of common stock authorized for issuance under the Company's equity compensation plan. The Company's shareholders approved the plan in 2020.

Plan Category	Number of securities to be issued upon exercise of outstanding options and rights(a)	Weighted average exercise price of outstanding options and rights(b)	Number of securities remaining available for future issuance under equity compensation plan (excluding securities reflected in column (a))(c)
Equity compensation plan approved by security holders ⁽¹⁾	—	\$ —	1,657,661

(1) Includes the Company's 2020 Stock Incentive Plan (the "2020 Plan") under which there were no outstanding options but 1,657,661 shares were available for grant of stock options, stock appreciation rights, restricted stock, restricted stock units and certain other stock-based awards as of December 31, 2022. See Note 17, "Stock-Based Compensation," to the Company's consolidated financial statements included in Item 8, "Financial Statements and Supplementary Data," in this report.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) Documents Filed as a Part of this Report

	<u>Page</u>
1. Financial Statements:	
<u>Report of Independent Registered Public Accounting Firm</u>	<u>48</u>
<u>Consolidated Balance Sheets as of December 31, 2022 and 2021</u>	<u>50</u>
<u>Consolidated Statements of Operations for the Three Years Ended December 31, 2022</u>	<u>51</u>
<u>Consolidated Statements of Comprehensive Income for the Three Years Ended December 31, 2022</u>	<u>52</u>
<u>Consolidated Statements of Cash Flows for the Three Years Ended December 31, 2022</u>	<u>53</u>
<u>Consolidated Statements of Stockholders' Equity for the Three Years Ended December 31, 2022</u>	<u>54</u>
<u>Notes to Consolidated Financial Statements</u>	<u>55</u>

All other schedules are omitted because they are not applicable, not required, or because the required information is included in the financial statements or notes thereto.

2. Exhibits:

The list of exhibits filed as part of this annual report on Form 10-K is set forth on the Exhibit Index immediately following the signature page to this report, and such Exhibit Index is incorporated herein by reference.

Exhibits to this annual report on Form 10-K have been included only with the copies of the Form 10-K filed with the Securities and Exchange Commission. Upon request to the Company and payment of a reasonable fee, copies of the individual exhibits will be furnished. The Company undertakes to furnish to the Commission upon request copies of instruments (in addition to the exhibits listed below) relating to the Company's acquisitions and long-term debt.

ITEM 16. FORM 10-K SUMMARY

None

EXHIBIT INDEX

Item No.	Description	Location
2.1	<u>Acquisition Agreement by and between Safety-Kleen Services, Inc., as Seller, and Clean Harbors, Inc., as Purchaser, dated as of February 22, 2002</u>	(1)
2.2	<u>First Amendment to Acquisition Agreement by and between Safety-Kleen Services, Inc., as Seller, and Clean Harbors, Inc., as Purchaser, dated as of March 8, 2002</u>	(2)
2.3	<u>Second Amendment to Acquisition Agreement by and between Safety-Kleen Services, Inc. as Seller, and Clean Harbors, Inc. as Purchaser, dated as of April 30, 2002</u>	(3)
2.4	<u>Third Amendment to Acquisition Agreement by and between Safety-Kleen Services, Inc., as Seller, and Clean Harbors, Inc., as Purchaser, dated as of September 6, 2002</u>	(4)
2.5	<u>Fourth Amendment to Acquisition Agreement by and between Safety-Kleen Services, Inc., as Seller and Clean Harbors, Inc., as Purchaser, dated as of July 14, 2003</u>	(5)
2.6	<u>Agreement and Plan of Merger dated as of October 26, 2012 among Safety-Kleen, Inc., Clean Harbors, Inc., and CH Merger Sub, Inc.</u>	(6)
2.7	<u>Stock Purchase Agreement by and among Clean Harbors, Inc., LJ Energy Services Holdings LLC, and LJ Energy Services Intermediate Holding Corp. dated August 3, 2021</u>	(7)
3.1A	<u>Restated Articles of Organization of Clean Harbors, Inc.</u>	(8)
3.1B	<u>Articles of Amendment [as filed on May 9, 2011] to Restated Articles of Organization of Clean Harbors, Inc.</u>	(9)
3.4D	<u>Amended and Restated By-Laws of Clean Harbors, Inc.</u>	(10)
3.4E	<u>Description of rights of holders of Clean Harbors, Inc. common stock</u>	(11)
4.34	<u>Sixth Amended and Restated Credit Agreement dated as of October 28, 2020 among Clean Harbors, Inc., as the U.S. Borrower, Clean Harbors Industrial Services Canada, Inc., as the Canadian Borrower, Bank of America, N.A., as Administrative Agent, and the Lenders party thereto</u>	(12)
4.34B	<u>Amended and Restated Security Agreement (Canadian Domiciled Loan Parties) dated as of November 1, 2016 among Clean Harbors Industrial Services Canada, Inc., as the Canadian Borrower and a Grantor, the subsidiaries of Clean Harbors, Inc. listed on Annex A thereto or that thereafter become a party thereto as Grantors, and Bank of America, N.A., as Agent</u>	(13)
4.34C	<u>Amended and Restated Guarantee (U.S. Domiciled Loan Parties-U.S. Facility Obligations) dated as of November 1, 2016 executed by the U.S. Domiciled Subsidiaries of Clean Harbors, Inc. named therein in favor of Bank of America, N.A., as Agent for itself and the other U.S. Facility Secured Parties</u>	(13)
4.34D	<u>Amended and Restated Guarantee (Canadian Domiciled Loan Parties-Canadian Facility Obligations) dated as of November 1, 2016 executed by the Canadian Domiciled Subsidiaries of Clean Harbors, Inc. named therein in favor of Bank of America, N.A., as Agent for itself and the other Canadian Facility Secured Parties</u>	(13)
4.34E	<u>Amended and Restated Guarantee (U.S. Domiciled Loan Parties-Canadian Facility Obligations) dated as of November 1, 2016 executed by Clean Harbors, Inc. and the U.S. Domiciled Subsidiaries of Clean Harbors, Inc. named therein in favor of Bank of America, N.A., as Agent for itself and the other Canadian Facility Secured Parties</u>	(13)
4.34G	<u>Second Amended and Restated Security Agreement (U.S. Domiciled Loan Parties) dated as of June 30, 2017, among Clean Harbors, Inc., as the U.S. Borrower and a Grantor, the subsidiaries of Clean Harbors, Inc. listed on Annex A thereto or that thereafter become a party thereto as Grantors, and Bank of America, N.A., as Agent</u>	(14)
4.34K	<u>Amended and Restated Confirmation and Ratification of Ancillary Loan Documents dated as of October 28, 2020 among Clean Harbors, Inc., as the U.S. Borrower, Clean Harbors Industrial Services Canada, Inc., as the Canadian Borrower, the subsidiaries of Clean Harbors, Inc. listed on Annex A thereto or that thereafter become a party thereto as Grantors, and Bank of America, N.A., as Agent for its own benefit and the benefit of the other Lenders and Credit Parties</u>	(12)
4.43	<u>Credit Agreement dated as of June 30, 2017, among the Financial Institutions party thereto, as Lenders, Goldman Sachs Lending Partners LLC, as Administrative Agent and Collateral Agent, Clean Harbors, Inc., as Borrower, and the Loan Guarantors from time to time party thereto</u>	(14)
4.43A	<u>Security Agreement dated as of June 30, 2017, among Clean Harbors, Inc. and its subsidiaries listed on Annex A thereto or that become a party thereto as the Grantors, and Goldman Sachs Lending Partners LLC, as the Agent</u>	(14)

Item No.	Description	Location
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4.43B	First Amendment to Credit Agreement dated as of April 17, 2018, among the Financial Institutions party thereto, as Lenders, Goldman Sachs Lending Partners LLC, as Administrative Agent and Collateral Agent, Clean Harbors, Inc., as Borrower, and the Loan Guarantors from time to time party thereto	(15)
4.43C	Incremental Facility Amendment dated July 19, 2018, to Credit Agreement dated as of June 30, 2017, among the Financial Institutions party thereto, as Lenders, Goldman Sachs Lending Partners LLC, as Administrative Agent and Collateral Agent, Clean Harbors, Inc., as Borrower, and the Loan Guarantors from time to time party thereto	(16)
4.43D	Incremental Facility Amendment No. 2 to Credit Agreement, dated as of October 8, 2021, to Credit Agreement dated as of June 30, 2017, as previously amended, among Clean Harbors, Inc., as the Borrower, each of the entities listed as an Incremental Lender on the signature pages thereto, Goldman Sachs Lending Partners LLC, as Administrative Agent and Collateral Agent, and the other Loan Parties as of the date thereof	(17)
4.44	Intercreditor Agreement dated as of June 30, 2017, among Clean Harbors, Inc., and the subsidiaries of Clean Harbors, Inc. listed on the signature pages thereto (together with any subsidiary that becomes a party thereto after the date thereof), Bank of America, N.A., as the Initial ABL Agent, and Goldman Sachs Lending Partners LLC, as agent under the Term Loan Agreement	(14)
4.45	Indenture dated as of July 2, 2019, among Clean Harbors, Inc., as Issuer, the subsidiaries of Clean Harbors, Inc. named therein as Guarantors, and U.S. Bank National Association, as Trustee	(18)
4.46	Indenture dated as of January 24, 2023, among Clean Harbors, Inc., the subsidiaries of Clean Harbors, Inc. named therein as Guarantors, and U.S. Bank Trust Company, National Association, as Trustee	(19)
10.43*	Key Employee Retention Plan	(20)
10.43A*	Form of Severance Agreement under Key Employee Retention Plan with Confidentiality and Non-Competition Agreement	(21)
10.52D*	Clean Harbors, Inc. Amended and Restated Management Incentive Plan	(22)
10.58*	Clean Harbors, Inc. 2020 Stock Incentive Plan	(23)
10.58A*	Form of Restricted Stock Award Agreement [Non-Employee Director] [for use under 2020 Stock Incentive Plan]	(24)
10.58B*	Form of Restricted Stock Award Agreement [Employee] [for use under Clean Harbors, Inc. 2020 Stock Incentive Plan]	(24)
10.58C*	Form of Performance-Based Restricted Stock Award Agreement [for use under Clean Harbors, Inc. 2020 Stock Incentive Plan]	(24)
10.59*	Michael Battles accepted offer letter dated November 1, 2022	(25)
10.60*	Severance Agreement dated as of November 1, 2022 between Michael Battles and Company	(25)
10.61*	Eric Gerstenberg accepted offer letter dated November 1, 2022	(25)
10.62*	Severance Agreement dated as of November 1, 2022 between Eric Gerstenberg and Company	(25)
10.63*	Alan McKim accepted offer letter dated November 1, 2022	(25)
10.64*	Eric J. Dugas accepted offer letter dated February 24, 2023	(26)
10.65*	Brian Weber accepted offer letter dated February 24, 2023	(26)
21	Subsidiaries	Filed herewith
23	Consent of Independent Registered Public Accounting Firm	Filed herewith
24	Power of Attorney	Filed herewith
31.1	Rule 13a-14a/15d-14(a) Certification of the CEO Alan S. McKim	Filed herewith
31.2	Rule 13a-14a/15d-14(a) Certification of the CFO Michael L. Battles	Filed herewith
32	Section 1350 Certifications	Filed herewith
101	The following materials from the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, formatted in iXBRL (Inline eXtensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Income, (iv) Consolidated Statements of Cash Flows, (v) Consolidated Statements of Stockholders' Equity and (vi) Notes to Consolidated Financial Statements, tagged as blocks of text	(27)
104	Cover page from the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, formatted in iXBRL and contained in Exhibit 101.	

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- * A “management contract or compensatory plan or arrangement” filed as an exhibit to this report pursuant to Item 15(a)(3) of Form 10-K.
- (1) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on February 28, 2002.
 - (2) Incorporated by reference to the similarly numbered exhibit to the Company's Form 10-K Annual Report for the Year ended December 31, 2001.
 - (3) Incorporated by reference to the similarly numbered exhibit to the Company's Form 10-Q Quarterly Report for the Quarterly Period ended March 31, 2002.
 - (4) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on September 25, 2002.
 - (5) Incorporated by reference to the similarly numbered exhibit to the Company's Form 10-Q Quarterly Report for the Quarterly Period ended June 30, 2003.
 - (6) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on October 31, 2012.
 - (7) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on August 4, 2021.
 - (8) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on May 19, 2005.
 - (9) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on May 12, 2011.
 - (10) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on March 16, 2022.
 - (11) Incorporated by reference to prospectus supplement dated November 28, 2012 filed on November 28, 2012 under the Company's Registration Statement on Form S-3 (File No. 333-185141).
 - (12) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on October 30, 2020.
 - (13) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on November 2, 2016.
 - (14) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on June 30, 2017.
 - (15) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on April 17, 2018.
 - (16) Incorporated by reference to the similarly numbered exhibit to the Company's Report on Form 8-K filed on July 20, 2018.
 - (17) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on October 12, 2021.
 - (18) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on July 3, 2019.
 - (19) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K filed on January 25, 2023.
 - (20) Incorporated by reference to the similarly numbered exhibit to the Company's Form 10-Q Quarterly Report for the quarterly period ended March 31, 1999.
 - (21) Incorporated by reference to the similarly numbered exhibit to the Company's Form 10-K Annual Report for the Year ended December 31, 2010.
 - (22) Incorporated by reference to Appendix A to the Company's definitive proxy statement for its 2021 annual meeting of shareholders filed on April 23, 2021.

- (23) Incorporated by reference to Appendix A to the Company's definitive proxy statement for its 2020 annual meeting of shareholders filed on April 24, 2020.
- (24) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on June 3, 2020.
- (25) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on November 2, 2022.
- (26) Incorporated by reference to the similarly numbered exhibit to the Company's Form 8-K Report filed on March 1, 2023.
- (27) These interactive data files are furnished herewith and deemed not filed or part of a registration statement or prospectus for purposes of Sections 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under those sections.

Subsidiaries of Clean Harbors, Inc.

<u>Subsidiary</u>	<u>Jurisdiction of Organization</u>
Ace/Allwaste Environmental Services of Indiana, LLC	Illinois
Altair Disposal Services, LLC	Delaware
American Industrial Assurance Company	South Carolina
Aquilex Finance LLC	Delaware
Aquilex Intermediate Corporate Holdings LLC	Delaware
Aquilex Intermediate Holdings LLC	Delaware
Aquilex LLC	Delaware
Baton Rouge Disposal, LLC	Delaware
Bridgeport Disposal, LLC	Delaware
CARBER Holdings, Inc.	Delaware
CB Canada Acquisition, Inc.*	Ontario
CB Canada Holdings, Inc.*	Ontario
CB US Holdings, Inc.	Delaware
CH International Holdings, LLC	Delaware
Clean Harbors Andover, LLC	Delaware
Clean Harbors Aragonite, LLC	Delaware
Clean Harbors Arizona, LLC	Delaware
Clean Harbors Baton Rouge, LLC	Delaware
Clean Harbors BDT, LLC	Delaware
Clean Harbors Buttonwillow, LLC	Delaware
Clean Harbors Canada, Inc.*	New Brunswick
Clean Harbors Caribe, Inc.*	Puerto Rico
Clean Harbors Chattanooga, LLC	Delaware
Clean Harbors Clive, LLC	Delaware
Clean Harbors Coffeyville, LLC	Delaware
Clean Harbors Colfax, LLC	Delaware
Clean Harbors Deer Park, LLC	Delaware
Clean Harbors Deer Trail, LLC	Delaware
Clean Harbors Development, LLC	Delaware
Clean Harbors Disposal Services, Inc.	Delaware
Clean Harbors El Dorado, LLC	Delaware
Clean Harbors Energy and Industrial Services Corp.*	Alberta
Clean Harbors Energy and Industrial Services LP*	Alberta
Clean Harbors Energy and Industrial Western Ltd.*	Alberta
Clean Harbors Energy Services, ULC*	Alberta
Clean Harbors Environmental Services, Inc.	Massachusetts
Clean Harbors Exploration Services LP*	Alberta
Clean Harbors Exploration Services, Inc.	Nevada
Clean Harbors Exploration Services, ULC*	Alberta
Clean Harbors Florida, LLC	Delaware
Clean Harbors Grassy Mountain, LLC	Delaware
Clean Harbors India LLP*	India

Clean Harbors Industrial Services Canada, Inc.*	Alberta
Clean Harbors Innu Environmental Services, Inc.*	Newfoundland
Clean Harbors Kansas, LLC	Delaware
Clean Harbors Kingston Facility Corporation	Massachusetts
Clean Harbors LaPorte, LLC	Delaware
Clean Harbors Laurel, LLC	Delaware
Clean Harbors Lodging Services LP*	Alberta
Clean Harbors Lodging Services, ULC*	Alberta
Clean Harbors Lone Mountain, LLC	Delaware
Clean Harbors Mercier, Inc.*	Quebec
Clean Harbors of Baltimore, Inc. (DE Corp.)	Delaware
Clean Harbors of Braintree, Inc.	Massachusetts
Clean Harbors of Connecticut, Inc. (DE)	Delaware
Clean Harbors Pecatonica, LLC	Delaware
Clean Harbors Production Services, ULC*	Alberta
Clean Harbors Quebec, Inc.*	Quebec
Clean Harbors Recycling Services of Chicago, LLC	Delaware
Clean Harbors Recycling Services of Ohio, LLC	Delaware
Clean Harbors Reidsville, LLC	Delaware
Clean Harbors San Jose, LLC	Delaware
Clean Harbors San Leon, Inc.	Delaware
Clean Harbors Services, Inc.	Massachusetts
Clean Harbors Surface Rentals Partnership*	Alberta
Clean Harbors Surface Rentals USA, Inc.	Delaware
Clean Harbors Surface Rentals, ULC*	Alberta
Clean Harbors Tennessee, LLC	Delaware
Clean Harbors Westmorland, LLC	Delaware
Clean Harbors White Castle, LLC	Delaware
Clean Harbors Wichita, LLC	Delaware
Clean Harbors Wilmington, LLC	Delaware
Confined Space Services L.L.C.	Michigan
Cousins Waste Control, LLC	Ohio
Crowley Disposal, LLC	Delaware
Cyn Oil Corporation	Massachusetts
Debusk Industrial Services Company LLC	Texas
Dene Nation Industrial Services LTD.*	Alberta
DFW Waste Oil Services	Texas
Disposal Properties, LLC	Delaware
Emerald Services, Inc.	Washington
EnviroSORT Inc.*	Alberta
Global Vapor Control, Inc.	Texas
Green View Technologies, Inc.	New Hampshire
GSX Disposal, LLC	Delaware
Hilliard Disposal, LLC	Delaware

HPC Industrial Group, LLC	Delaware
HPC Industrial Services, LLC	Delaware
HPC PetroServ, Inc.	Texas
HydroChem Canada ULC*	Alberta
IISG Central Region LLC	Delaware
IISG Gulf Coast LLC	Delaware
IISG Real Estate LLC	Michigan
Industrial Service Oil Company, Inc.	California
Inland Industrial Services Group LLC	Michigan
Inland Waters of Ohio LLC	Michigan
Inland Waters Pollution Control Services LLC	Michigan
Jesco Industrial Service, LLC	Kentucky
Laidlaw Environmental Services de Mexico S.A. de C.V.*	Mexico
LJ Energy Services Intermediate Holding Corp.	Delaware
Lonestar Sylvan Inc.*	Federally Chartered
Lonestar Vacuum Inc.*	Alberta
Lonestar West Enterprises LLC	Oklahoma
Lonestar West Inc.*	Federally Chartered
Lonestar West Services LLC	Nevada
Murphy's Waste Oil Service, Inc.	Massachusetts
Northeast Casualty Insurance Company	Vermont
Omnichem, LLC	Michigan
Philip Services/North Central, LLC	Iowa
Plaquemine Remediation Services, LLC	Delaware
PMS Industrial Services, LLC	Michigan
Power Vac Construction L.L.C.	Michigan
PSC Industrial Holdings Corp.	Delaware
PSC Industrial Outsourcing of Michigan, LLC	Ohio
PSC Industrial Outsourcing, LP	Delaware
PSC Industrial, Inc.	Delaware
PSC LDAR Services, LLC	Delaware
Ricky's Oil & Environmental Services, LLC	Florida
RMF Aquilex Corp.	Delaware
Roebuck Disposal, LLC	Delaware
Rosemead Oil Products, Inc.	California
Safety-Kleen Canada Inc.*	New Brunswick
Safety-Kleen Envirosystems Company	California
Safety-Kleen Envirosystems Company of Puerto Rico, Inc.	Indiana
Safety-Kleen International, Inc.	Delaware
Safety-Kleen of California, Inc.	California
Safety-Kleen Systems, Inc.	Wisconsin
Safety-Kleen, Inc.	Delaware
Sawyer Disposal Services, LLC	Delaware
Seaport Environmental, LLC	Delaware

Service Chemical, LLC	Delaware
SK D'Incineration Inc.*	Quebec
Speed Industrial Corporate, LLC	Louisiana
Speed Industrial Service Catalyst LLC	Delaware
Speed Industrial Service of Beaumont, LLC	Louisiana
Speed Industrial Service, LLC	Louisiana
Speed Industrial Services of Lake Charles LLC	Louisiana
Speed Industrial Services of Louisiana, LLC	Louisiana
Speed Industrial Services of Texas, LLC	Louisiana
Spring Grove Resource Recovery, Inc.	Delaware
Synergy Hydrocarbon Recovery, LLC	Florida
Synergy Recycling of Central Florida, LLC	Georgia
Synergy Recycling, LLC	Florida
The Solvents Recovery Service of New Jersey, Inc.	New Jersey
Thermo Fluids Inc.	Delaware
Tri-vax Enterprises Ltd.*	Alberta
Tulsa Disposal, LLC	Delaware
Versant Energy Services, Inc.	Delaware
Versant Energy Services, LP*	Alberta
Vulsay Industries Ltd.*	Ontario

*Foreign entity or subsidiary of foreign entity

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-238902 on Form S-8 of our reports dated March 1, 2023, relating to the financial statements of Clean Harbors, Inc. and the effectiveness of Clean Harbors, Inc.'s internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2022.

/s/ Deloitte & Touche LLP

Boston, Massachusetts

March 1, 2023

POWER OF ATTORNEY

Know all by these presents, that the undersigned hereby constitutes and appoints each of Alan S. McKim and Michael L. Battles, signing singly, the undersigned's true and lawful attorney-in-fact to:

- (1) execute for and on behalf of the undersigned, in the undersigned's capacity as an officer and/or director of Clean Harbors, Inc. (the "Company"), any and all documents required by the Securities and Exchange Commission pursuant to the Securities Exchange Act of 1934 and the rules thereunder, including, without limitation, Form 10-K;
- (2) do and perform any and all acts for and on behalf of the undersigned which may be necessary or desirable to complete and execute any such document filing and timely file such form with the United States Securities and Exchange Commission and any stock exchange or similar authority; and
- (3) take any other action of any type whatsoever in connection with the foregoing which, in the opinion of such attorney-in-fact, may be of benefit to, and in the best interest of, or legally required by, the undersigned.

The undersigned hereby grants to each such attorney-in-fact full power and authority to do and perform any and every act and thing whatsoever requisite, necessary, or proper to be done in the exercise of any of the rights and powers herein granted, as fully to all intents and purposes as the undersigned might or could do if personally present, with full power of substitution or revocation, hereby ratifying and confirming all that such attorney-in-fact, or such attorney-in-fact's substitute or substitutes, shall lawfully do or cause to be done by virtue of this power of attorney and the rights and powers herein granted. The undersigned acknowledges that the foregoing attorneys-in-fact, in serving in such capacity at the request of the undersigned, are not assuming, nor is the Company assuming, any of the undersigned's responsibilities to comply with Section 16 of the Securities Exchange Act of 1934.

This Power of Attorney shall remain in full force and effect until the undersigned is no longer required with respect to the undersigned's capacity as an officer and/or director and/or holdings of and transactions in securities issued by the Company, unless earlier revoked by the undersigned in a signed writing delivered to the foregoing attorneys-in-fact.

IN WITNESS WHEREOF, the undersigned has caused this Power of Attorney to be executed as of this 1st day of March, 2023.

Signature

/s/ EUGENE BANUCCI

/s/ EDWARD G. GALANTE

/s/ JOHN T. PRESTON

/s/ ALISON QUIRK

/s/ MARCY L. REED

/s/ ANDREA ROBERTSON

/s/ THOMAS J. SHIELDS

/s/ SHELLEY STEWART, JR.

/s/ LAUREN C. STATES

/s/ JOHN R. WELCH

/s/ ROBERT WILLET

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Alan S. McKim, certify that:

1. I have reviewed this annual report on Form 10-K for the period ended December 31, 2022 of Clean Harbors, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Alan S. McKim

Alan S. McKim
Chairman, President and Chief Executive Officer

Date: March 1, 2023

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Michael L. Battles, certify that:

1. I have reviewed this annual report on Form 10-K for the period ended December 31, 2022 of Clean Harbors, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Michael L. Battles

Michael L. Battles
Executive Vice President and Chief Financial Officer

Date: March 1, 2023

