UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended September 30, 2023

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 001-39729

SOTERA HEALTH COMPANY

(Exact name of registrant as specified in its charter)

Delaware	**47-3531161**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
9100 South Hills Blvd, Suite 300	
Broadview Heights, Ohio	**44147**
(Address of principal executive offices)	(Zip Code)
Registrant's telephone number, including area code	**(440) 262-1410**

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value per share	**SHC**	**The Nasdaq Stock Market LLC**

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	☒	Accelerated filer	☐
Non-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 is a shell company (as defined in Rule 12b-2 of the Exchange Act). ☐ Yes ☒ No

As of October 25, 2023, there were 282,622,621 shares of the registrant's common stock, $0.01 par value per share, outstanding.

SOTERA HEALTH COMPANY
- TABLE OF CONTENTS -

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q includes “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements are often characterized by the use of words such as “believes,” “estimates,” “expects,” “projects,” “may,” “intends,” “plans” or “anticipates,” or by discussions of strategy, plans or intentions. Such forward-looking statements involve known and unknown risks, uncertainties and other important factors that could cause our actual results, performance or achievements, or industry results, to differ materially from historical results or any future results, performance or achievements expressed, suggested or implied by such forward-looking statements. Such risks and uncertainties include, but are not limited to:

- any disruption in the availability or supply of, or increases in the price of, ethylene oxide (“EO”), Cobalt-60 (“Co-60”) or our other direct materials, services and supplies, including as a result of current geopolitical instability and/or sanctions arising from United States, Canadian, United Kingdom or European Union relations with Russia;
- foreign currency exchange rates and changes in those rates;
- changes in environmental, health and safety regulations or preferences, and general economic, social and business conditions;
- health and safety risks associated with the use, storage, transportation and disposal of potentially hazardous materials such as EO and Co-60;
- the impact and outcome of current and future legal proceedings and liability claims, including litigation related to purported exposure to emissions of EO from our facilities in Illinois, Georgia and New Mexico and the possibility that other claims will be made in the future relating to these or other facilities;
- allegations of our failure to properly perform services and potential product liability claims, recalls, penalties and reputational harm;
- compliance with the extensive regulatory requirements to which we are subject, the related costs, and any failures to receive or maintain, or delays in receiving, required clearance or approvals;
- adverse changes in industry trends;
- competition we face;
- market changes, including inflationary trends, that impact our long-term supply contracts with variable price clauses and increase our cost of revenues;
- business continuity hazards, including supply chain disruptions and other risks associated with our operations;
- the risks of doing business internationally, including global and regional economic and political instability and compliance with numerous laws and regulations in multiple jurisdictions;
- our ability to increase capacity at existing facilities, build new facilities in a timely and cost-effective manner and renew leases for our leased facilities;
- our ability to attract and retain qualified employees;
- severe health events, such as the COVID-19 pandemic, or environmental events;
- cyber security breaches, unauthorized data disclosures, and our dependence on information technology systems;
- any inability to pursue strategic transactions or find suitable acquisition targets, or our failure to integrate strategic acquisitions successfully into our business;
- our ability to maintain effective internal controls over financial reporting;
- our reliance on intellectual property to maintain our competitive position and the risk of claims from third parties that we infringe or misappropriate their intellectual property rights;
- our ability to comply with rapidly evolving data privacy and security laws and regulations and any ineffective compliance efforts with such laws and regulations;
- our ability to maintain profitability in the future;
- impairment charges on our goodwill and other intangible assets with indefinite lives, as well as other long-lived assets and intangible assets with definite lives;
- the effects of unionization efforts and labor regulations in certain countries in which we operate;
- adverse changes to our tax positions in U.S. or non-U.S. jurisdictions, the interpretation and application of recent U.S. tax legislation or other changes in U.S. or non-U.S. taxation of our operations; and
- our significant leverage and how this significant leverage could adversely affect our ability to raise additional capital, limit our ability to react to changes in the economy or our industry, limit our flexibility in operating our business through restrictions contained in our debt agreements and/or prevent us from meeting our obligations under our existing and future indebtedness.

These statements are based on current plans, estimates and projections, and therefore you should not place undue reliance on them. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to update them publicly in light of new information or future events, except as required by law. The inclusion of this forward-looking information should not be regarded as a representation by us or any other person that the future plans, estimates or expectations contemplated by us will be achieved.

You should carefully consider the above factors, as well as the factors discussed elsewhere in this Quarterly Report on Form 10-Q, including under Part II, Item 1A, "Risk Factors," as well as Part I, Item 1A, "Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2022 (the "2022 10-K"). If any of these trends, risks or uncertainties actually occur or continue, our business, financial condition or operating results could be materially adversely affected, the trading prices of our securities could decline and you could lose all or part of your investment. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by this cautionary statement.

Unless expressly indicated or the context requires otherwise, the terms "Sotera Health," "Company," "we," "us," and "our" in this document refer to Sotera Health Company, a Delaware corporation, and, where appropriate, its subsidiaries on a consolidated basis.

Part I—FINANCIAL INFORMATION

Item 1. Financial Statements

Sotera Health Company

Consolidated Balance Sheets

(in thousands, except per share amounts)

	As of	
	September 30, 2023	December 31, 2022
Assets	*(Unaudited)*	
Current assets:		
Cash and cash equivalents	**$ 244,959**	$ 395,214
Restricted cash short-term	**7,575**	1,080
Accounts receivable, net of allowance for uncollectible accounts of $2,100 and $1,871, respectively	**118,396**	118,482
Inventories, net	**37,924**	37,145
Prepaid expenses and other current assets	**84,201**	80,995
Income taxes receivable	**26,591**	12,094
Total current assets	**519,646**	645,010
Property, plant, and equipment, net	**884,385**	774,527
Operating lease assets	**24,672**	26,481
Deferred income taxes	**4,043**	4,101
Post-retirement assets	**39,342**	35,570
Other assets	**34,563**	38,983
Other intangible assets, net	**429,112**	491,265
Goodwill	**1,100,811**	1,101,768
Total assets	**$ 3,036,574**	$ 3,117,705
Liabilities and equity		
Current liabilities:		
Accounts payable	**$ 57,125**	$ 74,139
Accrued liabilities	**106,371**	490,130
Deferred revenue	**12,712**	12,140
Current portion of long-term debt	**5,235**	197,119
Current portion of finance lease obligations	**8,398**	1,722
Current portion of operating lease obligations	**6,362**	7,554
Current portion of asset retirement obligations	**252**	2,896
Income taxes payable	**4,139**	5,867
Total current liabilities	**200,594**	791,567
Long-term debt	**2,222,789**	1,747,115
Finance lease obligations, less current portion	**63,219**	56,955
Operating lease obligations, less current portion	**20,674**	21,577
Noncurrent asset retirement obligations	**44,382**	42,586
Deferred lease income	**18,444**	18,902
Post-retirement obligations	**7,760**	7,910
Noncurrent liabilities	**12,415**	12,831
Deferred income taxes	**68,826**	68,024
Total liabilities	**2,659,103**	2,767,467
See Commitments and contingencies note		
Equity:		
Common stock, with $0.01 par value, 1,200,000 shares authorized; 286,037 shares issued at September 30, 2023 and December 31, 2022	**2,860**	2,860
Preferred stock, with $0.01 par value, 120,000 authorized; no shares issued at September 30, 2023 and December 31, 2022	**—**	—
Treasury stock, at cost (3,414 and 3,616 shares at September 30, 2023 and December 31, 2022, respectively)	**(28,474)**	(29,775)
Additional paid-in capital	**1,210,346**	1,189,622
Retained deficit	**(693,121)**	(705,816)
Accumulated other comprehensive loss	**(114,140)**	(106,653)
Total equity	**377,471**	350,238
Total liabilities and equity	**$ 3,036,574**	$ 3,117,705

See notes to consolidated financial statements.

Sotera Health Company

Consolidated Statements of Operations and Comprehensive Income (Loss)
(in thousands, except per share amounts)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2023	**2022**	**2023**	**2022**
Revenues:				
Service	**$ 227,120**	$ 216,704	**$ 667,680**	$ 644,451
Product	**36,057**	32,000	**71,369**	107,646
Total net revenues	**263,177**	248,704	**739,049**	752,097
Cost of revenues:				
Service	**103,580**	99,772	**311,690**	292,755
Product	**13,613**	12,919	**30,284**	44,058
Total cost of revenues	**117,193**	112,691	**341,974**	336,813
Gross profit	**145,984**	136,013	**397,075**	415,284
Operating expenses:				
Selling, general and administrative expenses	**54,112**	57,091	**176,309**	179,765
Amortization of intangible assets	**15,774**	15,727	**48,098**	47,337
Total operating expenses	**69,886**	72,818	**224,407**	227,102
Operating income	**76,098**	63,195	**172,668**	188,182
Interest expense, net	**40,627**	23,427	**100,225**	47,875
Georgia EO litigation settlement	**35,000**	—	**35,000**	—
Impairment of investment in unconsolidated affiliate	**—**	—	**—**	9,613
Foreign exchange (gain) loss	**(426)**	(535)	**386**	(502)
Other expense (income), net	**427**	(1,713)	**(3,300)**	(4,195)
Income before income taxes	**470**	42,016	**40,357**	135,391
Provision for income taxes	**14,130**	16,926	**27,662**	49,242
Net income (loss)	**(13,660)**	25,090	**12,695**	86,149
Other comprehensive income (loss) net of tax:				
Pension and post-retirement benefits (net of taxes of $(43), $357, $(54), and $444, respectively)	**(126)**	1,065	**(159)**	1,323
Interest rate derivatives (net of taxes of $(934), $3,368, $(3,294) and $6,718, respectively)	**(1,714)**	9,408	**(6,963)**	18,765
Foreign currency translation	**(32,996)**	(69,460)	**(365)**	(100,523)
Comprehensive income (loss)	**$ (48,496)**	$ (33,897)	**$ 5,208**	$ 5,714
Earnings per share:				
Basic	**$ (0.05)**	$ 0.09	**$ 0.04**	$ 0.31
Diluted	**(0.05)**	0.09	**0.04**	0.31
Weighted average number of shares outstanding:				
Basic	**281,105**	280,142	**280,898**	279,988
Diluted	**281,105**	280,172	**283,190**	280,093

See notes to consolidated financial statements.

Sotera Health Company

Consolidated Statements of Cash Flows

(in thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2023	**2022**
Operating activities:		
Net income	**$ 12,695**	$ 86,149
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	**55,913**	47,496
Amortization of intangible assets	**61,290**	61,596
Impairment of investment in unconsolidated affiliate	**—**	9,613
Deferred income taxes	**3,284**	17,153
Share-based compensation expense	**24,034**	14,955
Accretion of asset retirement obligations	**1,683**	1,645
Unrealized foreign exchange (gain) loss	**2,444**	(5,610)
Unrealized loss (gain) on derivatives not designated as hedging instruments	**1,087**	(4,323)
Amortization of debt issuance costs	**6,522**	4,259
Other	**(3,492)**	(6,109)
Changes in operating assets and liabilities:		
Accounts receivable	**302**	(8,558)
Inventories	**(866)**	13,896
Other current assets	**(892)**	(13,066)
Accounts payable	**(17,412)**	(13,367)
Accrued liabilities	**(11,389)**	(1,874)
Illinois EO litigation settlement	**(407,712)**	—
Georgia EO litigation settlement	**35,000**	—
Income taxes payable / receivable, net	**(18,366)**	(25,050)
Other liabilities	**(809)**	1,489
Other long-term assets	**(4,171)**	(4,259)
Net cash provided by (used in) operating activities	**(260,855)**	176,035
Investing activities:		
Purchases of property, plant and equipment	**(150,149)**	(110,642)
Adjustment to purchase of Regulatory Compliance Associates Inc.	**—**	450
Other investing activities	**69**	34
Net cash used in investing activities	**(150,080)**	(110,158)
Financing activities:		
Proceeds from long-term borrowings	**500,000**	—
Payment of revolving credit facility	**(200,000)**	—
Payment of long-term borrowings	**(1,250)**	—
Payments of debt issuance costs and debt discount	**(25,645)**	(31)
Other financing activities	**(3,353)**	(1,452)
Net cash provided by (used in) financing activities	**269,752**	(1,483)
Effect of exchange rate changes on cash and cash equivalents	**(2,577)**	(6,357)
Net increase (decrease) in cash and cash equivalents, including restricted cash	**(143,760)**	58,037
Cash and cash equivalents, including restricted cash, at beginning of period	**396,294**	106,924
Cash and cash equivalents, including restricted cash, at end of period	**$ 252,534**	$ 164,961
Supplemental disclosures of cash flow information:		
Cash paid during the period for interest	**$ 150,696**	$ 65,045
Cash paid during the period for income taxes, net of tax refunds received	**42,587**	56,474
Purchases of property, plant and equipment included in accounts payable	**16,383**	18,583

See notes to consolidated financial statements.

Sotera Health Company

Consolidated Statements of Equity
(in thousands)
(Unaudited)

	Three Months Ended September 30, 2023						
	Common Stock						
	Shares	Amount	Treasury Stock	Additional Paid-In Capital	Retained Earnings / (Accumulated Deficit)	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balance at June 30, 2023	**282,544**	**$ 2,860**	**$ (28,700)**	**$ 1,202,972**	**$ (679,461)**	**$ (79,304)**	**$ 418,367**
Share-based compensation plans	79	—	226	7,374	—	—	**7,600**
Comprehensive income (loss):							
Pension and post-retirement plan adjustments, net of tax	—	—	—	—	—	(126)	**(126)**
Foreign currency translation	—	—	—	—	—	(32,996)	**(32,996)**
Interest rate derivatives, net of tax	—	—	—	—	—	(1,714)	**(1,714)**
Net loss	—	—	—	—	(13,660)	—	**(13,660)**
Balance at September 30, 2023	**282,623**	**$ 2,860**	**$ (28,474)**	**$ 1,210,346**	**$ (693,121)**	**$ (114,140)**	**$ 377,471**

	Nine Months Ended September 30, 2023						
	Common Stock						
	Shares	Amount	Treasury Stock	Additional Paid-In Capital	Retained Earnings / (Accumulated Deficit)	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balance at December 31, 2022	**282,421**	**$ 2,860**	**$ (29,775)**	**$ 1,189,622**	**$ (705,816)**	**$ (106,653)**	**$ 350,238**
Share-based compensation plans	202	—	1,301	20,724	—	—	**22,025**
Comprehensive income (loss):							
Pension and post-retirement plan adjustments, net of tax	—	—	—	—	—	(159)	**(159)**
Foreign currency translation	—	—	—	—	—	(365)	**(365)**
Interest rate derivatives, net of tax	—	—	—	—	—	(6,963)	**(6,963)**
Net income	—	—	—	—	12,695	—	**12,695**
Balance at September 30, 2023	**282,623**	**$ 2,860**	**$ (28,474)**	**$ 1,210,346**	**$ (693,121)**	**$ (114,140)**	**$ 377,471**

See notes to consolidated financial statements.

Sotera Health Company

Consolidated Statements of Equity (continued)
(in thousands)
(Unaudited)

Three Months Ended September 30, 2022

	Common Stock						
	Shares	Amount	Treasury Stock	Additional Paid-In Capital	Retained Earnings / (Accumulated Deficit)	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balance at June 30, 2022	282,902	$ 2,860	$ (32,654)	$ 1,181,995	$ (411,187)	$ (105,014)	$ 636,000
Share-based compensation plans	(789)	—	1	4,625	—	—	4,626
Comprehensive income (loss):	—	—		—	—	—	—
Pension and post-retirement plan adjustments, net of tax	—	—	—	—	—	1,065	1,065
Foreign currency translation	—	—	—	—	—	(69,460)	(69,460)
Interest rate derivatives, net of tax	—	—	—	—	—	9,408	9,408
Net income	—	—	—	—	25,090	—	25,090
Balance at September 30, 2022	282,113	$ 2,860	$ (32,653)	$ 1,186,620	$ (386,097)	$ (164,001)	$ 606,729

Nine Months Ended September 30, 2022

	Common Stock						
	Shares	Amount	Treasury Stock	Additional Paid-In Capital	Retained Earnings / (Accumulated Deficit)	Accumulated Other Comprehensive (Loss) Income	Total Equity
Balance at December 31, 2021	282,985	$ 2,860	$ (33,545)	$ 1,172,593	$ (472,246)	$ (83,566)	$ 586,096
Share-based compensation plans	(872)	—	892	14,027	—	—	14,919
Comprehensive income (loss):							
Pension and post-retirement plan adjustments, net of tax	—	—	—	—	—	1,323	1,323
Foreign currency translation	—	—	—	—	—	(100,523)	(100,523)
Interest rate derivatives, net of tax	—	—	—	—	—	18,765	18,765
Net income	—	—	—	—	86,149	—	86,149
Balance at September 30, 2022	282,113	$ 2,860	$ (32,653)	$ 1,186,620	$ (386,097)	$ (164,001)	$ 606,729

See notes to consolidated financial statements.

1. Basis of Presentation

Principles of Consolidation – Sotera Health Company (also referred to herein as the “Company,” “we,” “our,” “us” or “its”), is a leading global provider of mission-critical end-to-end sterilization solutions, lab testing and advisory services for the healthcare industry with operations primarily in the Americas, Europe and Asia.

We operate and report in three segments, Sterigenics, Nordion and Nelson Labs. We describe our reportable segments in Note 17, “Segment Information”. All significant intercompany balances and transactions have been eliminated in consolidation.

In July 2020, we acquired a 60% equity ownership interest in a joint venture to construct an E-beam facility in Alberta, Canada in connection with our acquisition of Iotron Industries Canada, Inc. (“Iotron”). Our equity ownership interest in the joint venture was determined to be an investment in a variable interest entity (“VIE”). The investment was not consolidated as the Company concluded that it was not the primary beneficiary of the VIE. The Company accounted for the joint venture using the equity method.

During the year ended December 31, 2022, we identified certain events and circumstances that indicated a decline in value of our investment in this joint venture that was other-than-temporary. Consequently, in the second quarter of 2022, we wrote down the investment in the joint venture to its fair value of $0, resulting in an impairment charge of approximately $9.6 million. In February 2023, we entered into a Share Purchase Agreement to transfer our equity ownership interest to the joint venture partner, thereby terminating our equity ownership interest.

Use of Estimates – In preparing our consolidated financial statements in conformity with U.S. Generally Accepted Accounting Principles (“GAAP”), we make estimates and assumptions that affect the amounts reported and the accompanying notes. We regularly evaluate the estimates and assumptions used and revise them as new information becomes available. Actual results may vary from those estimates.

Interim Financial Statements – The accompanying consolidated financial statements include the assets, liabilities, operating results, and cash flows of the Company and its wholly owned subsidiaries. These financial statements are prepared in accordance with GAAP for interim financial information, the instructions to the Quarterly Report on Form 10-Q and Rule 10-01 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by GAAP for complete financial statements. In the opinion of management, all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation have been included. These unaudited interim financial statements should be read in conjunction with the Company's annual consolidated financial statements and accompanying notes in our 2022 10-K.

2. Recent Accounting Standards

Adoption of Accounting Standard Updates

Effective January 1, 2023, we adopted *ASU 2021-08 - Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* (“ASU 2021-08”). The amendments in ASU 2021-08 require that an acquiring entity recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Accounting Standards Codification (“ASC”) Topic 606, Revenue from Contracts with Customers (“ASC Topic 606”). At the acquisition date, an acquirer should account for the related revenue contracts in accordance with ASC Topic 606 as if it had originated the contracts. The adoption of this standard did not have a material impact on our consolidated financial statements and disclosures.

3. Revenue Recognition

The following table shows disaggregated net revenues from contracts with external customers by timing of revenue and by segment for the three and nine months ended September 30, 2023 and 2022:

(thousands of U.S. dollars)	Three Months Ended September 30, 2023			
	Sterigenics	Nordion	Nelson Labs	Consolidated
Point in time	**$ 168,347**	**$ 37,068**	**$ —**	**$ 205,415**
Over time	**—**	**3,030**	**54,732**	**57,762**
Total	**$ 168,347**	**$ 40,098**	**$ 54,732**	**$ 263,177**

(thousands of U.S. dollars)	Three Months Ended September 30, 2022			
	Sterigenics	Nordion	Nelson Labs	Consolidated
Point in time	$ 157,723	$ 33,830	$ —	$ 191,553
Over time	—	1,241	55,910	57,151
Total	$ 157,723	$ 35,071	$ 55,910	$ 248,704

(thousands of U.S. dollars)	Nine Months Ended September 30, 2023			
	Sterigenics	Nordion	Nelson Labs	Consolidated
Point in time	**$ 494,934**	**$ 75,309**	**$ —**	**$ 570,243**
Over time	**—**	**5,315**	**163,491**	**168,806**
Total	**$ 494,934**	**$ 80,624**	**$ 163,491**	**$ 739,049**

(thousands of U.S. dollars)	Nine Months Ended September 30, 2022			
	Sterigenics	Nordion	Nelson Labs	Consolidated
Point in time	$ 464,977	$ 113,501	$ —	$ 578,478
Over time	—	6,050	167,569	173,619
Total	$ 464,977	$ 119,551	$ 167,569	$ 752,097

When we receive consideration from a customer prior to transferring goods or services under the terms of a sales contract, we record deferred revenue, which represents a contract liability. Deferred revenue totaled $12.7 million and $12.1 million at September 30, 2023 and December 31, 2022, respectively. We recognize deferred revenue after all revenue recognition criteria are met.

4. Acquisitions

Acquisition of Regulatory Compliance Associates Inc.

On November 4, 2021, we acquired Regulatory Compliance Associates Inc. ("RCA") for approximately $30.6 million, net of $0.6 million of cash acquired. RCA is an industry leader in providing life sciences consulting focused on quality, regulatory, and technical advisory services for the pharmaceutical, medical device and combination device industries. Headquartered in Pleasant Prairie, Wisconsin, RCA expands and further strengthens our technical consulting and expert advisory capabilities within our Nelson Labs segment.

The purchase price of RCA was allocated to the underlying assets acquired and liabilities assumed based upon management's estimated fair values at the date of acquisition. As of September 30, 2023, approximately $25.3 million of goodwill was recorded related to the RCA acquisition, representing the excess of the purchase price over the estimated fair values of all the assets acquired and liabilities assumed. We also recorded $6.4 million of finite-lived intangible assets, primarily related to customer relationships. We funded this acquisition using available cash. The acquisition price and the results of operations for this acquired entity are not material in relation to our consolidated financial statements.

5. Inventories

Inventories consisted of the following:

(thousands of U.S. dollars)	September 30, 2023	December 31, 2022
Raw materials and supplies	**$ 33,563**	$ 36,402
Work-in-process	**590**	584
Finished goods	**3,887**	276
	38,040	37,262
Reserve for excess and obsolete inventory	**(116)**	(117)
Inventories, net	**$ 37,924**	$ 37,145

6. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following:

(thousands of U.S. dollars)	September 30, 2023	December 31, 2022
Prepaid taxes	**$ 29,515**	$ 26,598
Prepaid business insurance	**1,822**	9,964
Prepaid rent	**1,226**	998
Customer contract assets	**25,531**	19,777
Insurance and indemnification receivables	**2,039**	3,724
Current deposits	**412**	660
Prepaid maintenance contracts	**605**	324
Value added tax receivable	**3,636**	1,640
Prepaid software licensing	**2,344**	1,832
Stock supplies	**3,819**	3,656
Embedded derivatives	**2,287**	2,721
Other	**10,965**	9,101
Prepaid expenses and other current assets	**$ 84,201**	$ 80,995

7. Goodwill and Other Intangible Assets

Changes to goodwill during the nine months ended September 30, 2023 were as follows:

(thousands of U.S. dollars)	Sterigenics	Nordion	Nelson Labs	Total
Goodwill at December 31, 2022	$ 657,458	$ 270,966	$ 173,344	$ 1,101,768
Changes due to foreign currency exchange rates	131	(690)	(398)	(957)
Goodwill at September 30, 2023	**$ 657,589**	**$ 270,276**	**$ 172,946**	**$ 1,100,811**

Other intangible assets consisted of the following:

(thousands of U.S. dollars) As of September 30, 2023	Gross Carrying Amount	Accumulated Amortization
Finite-lived intangible assets		
Customer relationships	**$ 652,421**	**$ 466,828**
Proprietary technology	**83,538**	**54,474**
Trade names	**2,561**	**1,081**
Land-use rights	**8,497**	**1,748**
Sealed source and supply agreements	**203,865**	**101,918**
Other	**4,464**	**2,647**
Total finite-lived intangible assets	**955,346**	**628,696**
Indefinite-lived intangible assets		
Regulatory licenses and other[(a)]	**76,781**	—
Trade names / trademarks	**25,681**	—
Total indefinite-lived intangible assets	**102,462**	—
Total	**$ 1,057,808**	**$ 628,696**

As of December 31, 2022	Gross Carrying Amount	Accumulated Amortization
Finite-lived intangible assets		
Customer relationships	$ 652,811	$ 422,277
Proprietary technology	86,054	50,952
Trade names	2,553	701
Land-use rights	8,986	1,683
Sealed source and supply agreements	204,391	93,034
Other	4,469	1,979
Total finite-lived intangible assets	959,264	570,626
Indefinite-lived intangible assets		
Regulatory licenses and other[(a)]	76,978	—
Trade names / trademarks	25,649	—
Total indefinite-lived intangible assets	102,627	—
Total	$ 1,061,891	$ 570,626

(a) Includes certain transportation certifications, a class 1B nuclear license and other intangibles related to obtaining such licensure. These assets are considered indefinite-lived as the decision for renewal by the Canadian Nuclear Safety Commission is highly based on a licensee's previous assessments, reported incidents, and annual compliance and inspection results. New applications for license can take a significant amount of time and cost; whereas an existing licensee with a historical record of compliance and current operating conditions more than likely ensures renewal for another 10 year license period as Nordion has demonstrated over its 75 years of history.

Amounts include the impact of foreign currency translation. Fully amortized amounts are written off.

Amortization expense for other intangible assets was $20.2 million ($4.4 million is included in "Cost of revenues") and $61.3 million ($13.2 million is included in "Cost of revenues") in the Consolidated Statements of Operations and Comprehensive Income (Loss) for the three and nine months ended September 30, 2023, respectively.

Amortization expense for other intangible assets was $20.2 million ($4.5 million is included in “Cost of revenues”) and $61.6 million ($14.3 million is included in “Cost of revenues”) in the Consolidated Statements of Operations and Comprehensive Income (Loss) for the three and nine months ended September 30, 2022, respectively.

The estimated aggregate amortization expense for finite-lived intangible assets for each of the next five years and thereafter is as follows:

(thousands of U.S. dollars)		
For the remainder of 2023	**$**	**19,988**
2024		**79,336**
2025		**42,208**
2026		**22,130**
2027		**21,053**
Thereafter		**141,935**
Total	**$**	**326,650**

The weighted-average remaining useful life of the finite-lived intangible assets was approximately nine years as of September 30, 2023.

8. Accrued Liabilities

Accrued liabilities consisted of the following:

(thousands of U.S. dollars)		September 30, 2023		December 31, 2022
Accrued employee compensation	**$**	**29,361**	$	32,936
Georgia EO litigation settlement reserve		**35,000**		—
Illinois EO litigation settlement reserve		**288**		408,000
Legal reserves		**2,939**		3,776
Accrued interest expense		**2,478**		23,291
Embedded derivatives		**4,176**		3,508
Professional fees		**18,159**		6,436
Accrued utilities		**1,946**		1,906
Insurance accrual		**2,508**		2,392
Accrued taxes		**3,507**		2,567
Other		**6,009**		5,318
Accrued liabilities	**$**	**106,371**	$	490,130

9. Long-Term Debt

Long-term debt consisted of the following:

(thousands of U.S. dollars)

As of September 30, 2023	Gross Amount	Unamortized Debt Issuance Costs	Unamortized Debt Discount	Net Amount
Term loan, due 2026	**$ 1,763,100**	**$ (1,760)**	**$ (11,155)**	**$ 1,750,185**
Term loan B, due 2026	**498,750**	**(8,003)**	**(13,357)**	**477,390**
Other long-term debt	**450**	**(1)**	**—**	**449**
	2,262,300	**(9,764)**	**(24,512)**	**2,228,024**
Less current portion	**5,450**	**(80)**	**(135)**	**5,235**
Long-term debt	**$ 2,256,850**	**$ (9,684)**	**$ (24,377)**	**$ 2,222,789**

(thousands of U.S. dollars)

As of December 31, 2022	Gross Amount	Unamortized Debt Issuance Costs	Unamortized Debt Discount	Net Amount
Term loan, due 2026	$ 1,763,100	$ (2,140)	$ (13,845)	$ 1,747,115
Revolving credit facility	200,000	(3,328)	—	196,672
Other long-term debt	450	(3)	—	447
	1,963,550	(5,471)	(13,845)	1,944,234
Less current portion	200,450	(3,331)	—	197,119
Long-term debt	$ 1,763,100	$ (2,140)	$ (13,845)	$ 1,747,115

Debt Facilities

Senior Secured Credit Facilities

On December 13, 2019, Sotera Health Holdings, LLC (“SHH”), our wholly owned subsidiary, entered into senior secured first lien credit facilities (the “Senior Secured Credit Facilities”), consisting of both a prepayable senior secured first lien term loan (the “Term Loan”) and a senior secured first lien revolving credit facility (the “Revolving Credit Facility”) pursuant to a first lien credit agreement (the “Credit Agreement”). The Revolving Credit Facility and Term Loan mature on June 13, 2026 and December 13, 2026, respectively. After giving effect to the Revolving Credit Facility Amendment (defined below), the total borrowing capacity under the Revolving Credit Facility is $423.8 million. The Senior Secured Credit Facilities also provide SHH the right at any time and under certain conditions to request incremental term loans or incremental revolving credit commitments based on a formula defined in the Senior Secured Credit Facilities. As of September 30, 2023 and December 31, 2022, total borrowings under the Term Loan were $1,763.1 million. The weighted average interest rate on borrowings under the Term Loan for the three months ended September 30, 2023 and September 30, 2022 was 8.14% and 4.96%, respectively, and 7.82% and 3.92% for the nine months ended September 30, 2023 and September 30, 2022, respectively.

On February 23, 2023, we entered into the First Lien Credit Agreement (the “2023 Credit Agreement”), which provides for, among other things, a new Term Loan B facility (the “2023 Term Loan”) in an aggregate principal amount of $500.0 million and bears interest, at the Company’s option, at a variable rate per annum equal to either (x) the Term Secured Overnight Financing Rate (“Term SOFR”) (as defined in the 2023 Credit Agreement) plus an applicable margin of 3.75% or (y) an alternative base rate (“ABR”) plus an applicable margin of 2.75%. The 2023 Credit Agreement is secured on a first priority basis on substantially all of our assets and is guaranteed by certain of our subsidiaries. It is prepayable without premium or penalty at any time six months after the closing date. The principal balance shall be paid at 1% of the aggregate principal amount ($5.0 million) per year, with the balance due at the end of 2026. The Company used the proceeds of the 2023 Term Loan to fund a previously announced $408.0 million EO litigation settlement in Cook County, Illinois and pay down the $200.0 million of existing borrowings under the Revolving Credit Facility concurrent with the funding of the 2023 Term Loan on February 23, 2023. In addition, the Company plans to use the remaining proceeds to further enhance liquidity and for general corporate purposes. The weighted average interest rate on borrowings under the 2023 Term Loan for the three and nine months ended September 30, 2023 was 8.84% and 8.83%, respectively.

On March 21, 2023, the Company entered into an Incremental Facility Amendment to the Credit Agreement (“Revolving Credit Facility Amendment”), which provides for an increase in the commitments under the existing Revolving Credit Facility in an aggregate principal amount of $76.3 million. In addition, certain of the lenders providing revolving credit commitments provided additional commitments for the issuance of the letters of credit under the Revolving Credit Facility in an aggregate principal amount of $165.1 million. The Revolving Credit Facility Amendment also provides for the replacement of the reference interest rate option for Revolving Loans from London Interbank Offered Rate (“LIBOR”) to Secured Overnight Financing Rate (“SOFR”) plus an applicable credit spread adjustment of 0.10% (subject to a minimum floor of 0.00%). After giving effect to the Revolving Credit Facility Amendment, the aggregate amount of the lenders’ revolving commitments is $423.8 million. The maturity date of the Revolving Credit Facility remains June 13, 2026. The Company borrowed $200.0 million under the Revolving Credit Facility during the fourth quarter of 2022, which was repaid in the first quarter of 2023, as noted above. As of September 30, 2023, there were no borrowings outstanding under the Revolving Credit Facility.

The Senior Secured Credit Facilities and 2023 Credit Agreement contain additional covenants that, among other things, restrict, subject to certain exceptions, our ability and the ability of our restricted subsidiaries to engage in certain activities, such as incur indebtedness or permit to exist any lien on any property or asset now owned or hereafter acquired, as specified in the Senior Secured Credit Facilities and 2023 Credit Agreement. The Senior Secured Credit Facilities and 2023 Credit Agreement also contain certain customary affirmative covenants and events of default, including upon a change of control. An event of default under the Senior Secured Credit Facilities and 2023 Credit Agreement would occur if the Company or certain of its subsidiaries received one or more enforceable judgments for payment in an aggregate amount in excess of $100.0 million, which judgment or judgments are not stayed or remain undischarged for a period of 60 consecutive days or if, in order to enforce such a judgment, a judgment creditor attached or levied upon assets that are material to the business and operations, taken as a whole, of the Company and certain of its subsidiaries. As of September 30, 2023, we were in compliance with all of the Senior Secured Credit Facilities and 2023 Credit Agreement covenants.

All of SHH’s obligations under the Senior Secured Credit Facilities and 2023 Credit Agreement are unconditionally guaranteed by the Company and each existing and subsequently acquired or organized direct or indirect wholly-owned domestic restricted subsidiary of the Company, with customary exceptions including, among other things, where providing such guarantees is not permitted by law, regulation or contract or would result in material adverse tax consequences. All obligations under the Senior Secured Credit Facilities and 2023 Credit Agreement, and the guarantees of such obligations, are secured by substantially all assets of the borrower and guarantors, subject to permitted liens and other exceptions and exclusions, as outlined in the Senior Secured Credit Facilities and 2023 Credit Agreement.

Outstanding letters of credit are collateralized by encumbrances against the Revolving Credit Facility and the collateral pledged thereunder, or by cash placed on deposit with the issuing bank. As of September 30, 2023, the Company had $24.0 million of letters of credit issued against the Revolving Credit Facility, resulting in total availability under the Revolving Credit Facility of $399.8 million.

Term Loan Interest Rate Risk Management

The Company utilizes interest rate derivatives to reduce the variability of cash flows in the interest payments associated with our variable rate debt due to changes in LIBOR (up to June 22, 2023) and Term SOFR. For additional information on the derivative instruments described above, refer to Note 16, “Financial Instruments and Financial Risk”, *“Derivative Instruments.”*

LIBOR Transition

Publication of all U.S. LIBOR tenors ceased after June 30, 2023. To align with the market phaseout of LIBOR, SHH entered into an amendment to the Senior Secured Credit Facilities to replace the LIBOR-based reference interest rate option under the Term Loan with a reference interest rate option based on Term SOFR plus an applicable credit spread adjustment of 0.11448% (for one-month interest periods), 0.26161% (for three-month interest periods) and 0.42826% (for six-month interest periods) (in all cases, subject to a minimum floor of 0.50%).

In accordance with ASC 848 *Reference Rate Reform*, we have elected to apply certain optional expedients for contract modifications and hedging relationships for derivative instruments impacted by the benchmark interest rate transition. The optional expedients remove the requirement to remeasure contract modifications or dedesignate hedging relationships impacted by reference rate reform.

Aggregate Maturities

Aggregate maturities of the Company's long-term debt, excluding debt discounts, as of September 30, 2023, are as follows:

(thousands of U.S. dollars)		
2023	**$**	**1,700**
2024		**5,000**
2025		**5,000**
2026		**2,250,600**
2027		**—**
Thereafter		**—**
Total	**$**	**2,262,300**

10. Income Taxes

Income tax expense is provided on an interim basis based upon our estimate of the annual effective income tax rate. In determining the estimated annual effective income tax rate, we analyze various factors, including projections of our annual earnings and the taxing jurisdictions where the earnings will occur, the impact of state and local taxes, our ability to utilize tax credits and net operating loss carryforwards and available tax planning alternatives.

Income tax expense for the three months ended September 30, 2023 differed from the statutory rate primarily due to a net increase in the valuation allowance attributable to the limitation on the deductibility of interest expense, the impact of the foreign rate differential, and global intangible low-tax income ("GILTI"), partially offset by a benefit for state income taxes. The increase in the valuation allowance was a direct result of the $35.0 million Georgia EO litigation settlement, as described in Note 15, "Commitments and Contingencies". Income tax expense for the three months ended September 30, 2022 differed from the statutory rate primarily due to a net increase in the valuation allowance, the impact of the foreign rate differential, and GILTI. The increase in the valuation allowance for the three months ended September 30, 2022 was attributable to the limitation on the deductibility of interest expense and the impairment of an investment in a joint venture.

Income tax expense for the nine months ended September 30, 2023 differed from the statutory rate primarily due to a net increase in the valuation allowance attributable to the limitation on the deductibility of interest expense, the impact of the foreign rate differential, and GILTI, partially offset by a benefit for state income taxes. Income tax expense for the nine months ended September 30, 2022 differed from the statutory rate primarily due to a net increase in the valuation allowance, the impact of the foreign rate differential, and GILTI.

11. Employee Benefits

The Company sponsors various post-employment benefit plans including, in certain countries outside the U.S., defined benefit and defined contribution pension plans, retirement compensation arrangements, and plans that provide extended health care coverage to retired employees, the majority of which relate to Nordion.

Defined benefit pension plans

The following defined benefit pension plan disclosure relates to Nordion. Certain immaterial foreign defined benefit pension plans have been excluded from the table below. The interest cost, expected return on plan assets and amortization of net actuarial gain are recorded in “Other expense (income), net” and the service cost component is included in the same financial statement line item as the applicable employee’s wages in the Consolidated Statements of Operations and Comprehensive Income (Loss). The components of net periodic pension benefit for the defined benefit plans for the three and nine months ended September 30, 2023 and 2022 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(thousands of U.S. dollars)	**2023**	**2022**	**2023**	**2022**
Service cost	**$ 132**	$ 242	**$ 395**	$ 738
Interest cost	**2,745**	1,848	**8,211**	5,640
Expected return on plan assets	**(4,050)**	(3,595)	**(12,115)**	(10,975)
Net periodic benefit	**$ (1,173)**	$ (1,505)	**$ (3,509)**	$ (4,597)

Other benefit plans

Other benefit plans disclosed below relate to Nordion and include a supplemental retirement arrangement, a retirement and termination allowance, and post-retirement benefit plans, which include contributory health and dental care benefits and contributory life insurance coverage. Certain immaterial other foreign benefit plans have been excluded from the table below. All but one non-pension post-employment benefit plans are unfunded. The components of net periodic pension cost for the other benefit plans for the three and nine months ended September 30, 2023 and 2022 were as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(thousands of U.S. dollars)	**2023**	**2022**	**2023**	**2022**
Service cost	**$ 2**	$ 4	**$ 6**	$ 12
Interest cost	**91**	63	**271**	193
Amortization of net actuarial gain	**(44)**	(2)	**(132)**	(6)
Net periodic cost	**$ 49**	$ 65	**$ 145**	$ 199

We currently expect funding requirements of approximately $0.3 million in each of the next five years to fund the regulatory solvency deficit, as defined by Canadian federal regulation, which requires solvency testing on defined benefit pension plans.

The Company may obtain a qualifying letter of credit for solvency payments, up to 15% of the market value of solvency liabilities as determined on the valuation date, instead of paying cash into the pension fund. As of September 30, 2023, and December 31, 2022, we had letters of credit outstanding relating to the defined benefit plans totaling $16.0 million and $44.1 million, respectively. The actual funding requirements over the five-year period will be dependent on subsequent annual actuarial valuations. These amounts are estimates, which may change with actual investment performance, changes in interest rates, any pertinent changes in Canadian government regulations and any voluntary contributions.

12. Other Comprehensive Income (Loss)

Amounts in accumulated other comprehensive income (loss) are presented net of the related tax. Foreign currency translation is not adjusted for income taxes.

Changes in our accumulated other comprehensive income (loss) balances, net of applicable tax, were as follows:

(thousands of U.S. dollars)	Defined Benefit Plans	Foreign Currency Translation	Interest Rate Derivatives	Total
Beginning balance – July 1, 2023	**$ 3,176**	**$ (98,574)**	**$ 16,094**	**$ (79,304)**
Other comprehensive income (loss) before reclassifications	**(82)**	**(32,996)**	**2,976**	**(30,102)**
Amounts reclassified from accumulated other comprehensive income (loss)	**(44)** (a)	**—**	**(4,690)** (b)	**(4,734)**
Net current-period other comprehensive loss	**(126)**	**(32,996)**	**(1,714)**	**(34,836)**
Ending balance – September 30, 2023	**$ 3,050**	**$ (131,570)**	**$ 14,380**	**$ (114,140)**
Beginning balance – January 1, 2023	**$ 3,209**	**$ (131,205)**	**$ 21,343**	**$ (106,653)**
Other comprehensive income (loss) before reclassifications	**(27)**	**(365)**	**11,531**	**11,139**
Amounts reclassified from accumulated other comprehensive income (loss)	**(132)** (a)	**—**	**(18,494)** (b)	**(18,626)**
Net current-period other comprehensive loss	**(159)**	**(365)**	**(6,963)**	**(7,487)**
Ending balance – September 30, 2023	**$ 3,050**	**$ (131,570)**	**$ 14,380**	**$ (114,140)**

(thousands of U.S. dollars)	Defined Benefit Plans	Foreign Currency Translation	Interest Rate Derivatives	Total
Beginning balance – July 1, 2022	$ (17,323)	$ (97,452)	$ 9,761	$ (105,014)
Other comprehensive income (loss) before reclassifications	1,067	(69,460)	9,408	(58,985)
Amounts reclassified from accumulated other comprehensive income (loss)	(2) (a)	—	—	(2)
Net current-period other comprehensive income (loss)	1,065	(69,460)	9,408	(58,987)
Ending balance – September 30, 2022	$ (16,258)	$ (166,912)	$ 19,169	$ (164,001)
Beginning balance – January 1, 2022	$ (17,581)	$ (66,389)	$ 404	$ (83,566)
Other comprehensive income (loss) before reclassifications	1,329	(100,523)	18,765	(80,429)
Amounts reclassified from accumulated other comprehensive income (loss)	(6) (a)	—	—	(6)
Net current-period other comprehensive income (loss)	1,323	(100,523)	18,765	(80,435)
Ending balance – September 30, 2022	$ (16,258)	$ (166,912)	$ 19,169	$ (164,001)

(a) For defined benefit pension plans, amounts reclassified from accumulated other comprehensive income (loss) are recorded to “Other expense (income), net” within the Consolidated Statements of Operations and Comprehensive Income (Loss).

(b) For interest rate derivatives, amounts reclassified from accumulated other comprehensive income (loss) are recorded to “Interest expense, net” within the Consolidated Statements of Operations and Comprehensive Income (Loss).

13. Share-Based Compensation

Pre-IPO Awards

Restricted stock distributed in respect of pre-IPO Class B-1 time vesting units vests on a daily basis pro rata over a five-year vesting period (20% per year) beginning on the original vesting commencement date of the corresponding Class B-1 time vesting units, subject to the grantee's continued services through each vesting date. Upon the occurrence of a change in control of the Company, all then outstanding unvested shares of our common stock distributed in respect of Class B-1 Units will become vested as of the date of consummation of such change in control, subject to the grantee's continued services through the consummation of the change in control.

Restricted stock distributed in respect of pre-IPO Class B-2 Units (which were considered performance vesting units) are scheduled to vest only upon satisfaction of certain thresholds. These units generally vest as of the first date on which (i) our Sponsors have received actual cash proceeds in an amount equal to or in excess of at least two and one-half times their invested capital in Sotera Health Topco Parent, L.P. (of which the Company was a direct wholly owned subsidiary prior to the IPO) and (ii) the Sponsors' internal rate of return exceeds 20%, subject to such grantee's continued services through such date. In the event of a change in control of the Company, any outstanding shares of our common stock distributed in respect of Class B-2 Units that remain unvested immediately following the consummation of such a change in control of the Company shall be immediately canceled and forfeited without compensation. Stock based compensation expense attributed to the pre-IPO Class B-2 awards was recorded in the fourth quarter of 2020 as the related performance conditions were considered probable of achievement and the implied service conditions were met. As of September 30, 2023, these awards remain unvested.

We recognized $0.5 million of share-based compensation expense related to the pre-IPO Class B-1 awards for each of the three months ended September 30, 2023 and 2022, and $1.5 million and $1.6 million for the nine months ended September 30, 2023 and 2022, respectively.

A summary of the activity for the nine months ended September 30, 2023 related to the restricted stock awards distributed in respect of the pre-IPO awards (Class B-1 and B-2 Units) is presented below:

	Restricted Stock - Pre-IPO B-1	Restricted Stock - Pre-IPO B-2
Unvested at December 31, 2022	716,091	1,098,415
Forfeited	(5,378)	(80,051)
Vested	(260,208)	—
Unvested at September 30, 2023	**450,505**	**1,018,364**

2020 Omnibus Incentive Plan

We maintain a long-term incentive plan (the "2020 Omnibus Incentive Plan" or the "2020 Plan") that allows for grants of incentive stock options to employees (including employees of any of our subsidiaries), nonstatutory stock options, restricted stock awards ("RSAs"), restricted stock units ("RSUs") and other cash-based, equity-based or equity-related awards to employees, directors, and consultants, including employees or consultants of our subsidiaries.

We recognized $7.9 million ($3.8 million for stock options and $4.1 million for RSUs) and $4.1 million ($1.5 million for stock options and $2.6 million for RSUs) of share-based compensation expense for these awards for the three months ended September 30, 2023 and 2022, respectively. We recognized $22.7 million ($10.7 million for stock options and $12.0 million for RSUs) and $13.3 million ($5.2 million for stock options and $8.1 million for RSUs) for the nine months ended September 30, 2023 and 2022, respectively, in our Consolidated Statements of Operations and Comprehensive Income (Loss), in "Selling, general and administrative expenses."

Stock Options

Stock options generally vest ratably over a period of two to four years. They have an exercise price equal to the fair market value of a share of common stock on the date of grant, and a contractual term of 10 years. The following table summarizes our stock option activity for the nine months ended September 30, 2023:

	Number of Shares	Weighted Average Exercise Price
At December 31, 2022	5,990,470	$ 14.84
Granted	1,098,136	17.53
Forfeited	(79,244)	20.94
At September 30, 2023	**7,009,362**	**$ 15.20**

As of September 30, 2023, there were 1.4 million stock options vested and exercisable.

RSUs

RSUs generally vest ratably over a period of one to four years and are valued based on our market price on the date of grant. The following table summarizes our unvested RSUs activity for the nine months ended September 30, 2023:

	Number of Shares	Weighted Average Grant Date Fair Value
Unvested at December 31, 2022	2,482,435	$ 13.09
Granted	917,972	16.97
Forfeited	(131,650)	12.35
Vested	(401,892)	21.17
Unvested at September 30, 2023	**2,866,865**	**$ 13.24**

14. Earnings (Loss) Per Share

Basic earnings per share represents the amount of income attributable to each common share outstanding. Diluted earnings per share represents the amount of income attributable to each common share outstanding adjusted for the effects of potentially dilutive common shares. Potentially dilutive common shares include stock options and other stock-based awards. In the periods where the effect would be antidilutive, potentially dilutive common shares are excluded from the calculation of diluted earnings per share.

In periods in which the Company has net income, earnings per share is calculated using the two-class method. This method is required as unvested restricted stock distributed in respect of pre-IPO Class B-1 and B-2 awards have the right to receive non-forfeitable dividends or dividend equivalents if the Company were to declare dividends on its common stock. Pursuant to the two-class method, earnings for each period are allocated on a pro-rata basis to common stockholders and unvested pre-IPO Class B-1 and B-2 restricted stock awards. Diluted earnings per share is computed using the more dilutive of (a) the two-class method, or (b) treasury stock method, as applicable, to the potentially dilutive instruments.

In periods in which the Company has a net loss, the two-class method is not applicable because the pre-IPO Class B-1 and B-2 restricted stock awards do not participate in losses.

Our basic and diluted earnings per common share are calculated as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
in thousands of U.S. dollars and share amounts (except per share amounts)	**2023**	**2022**	**2023**	**2022**
Earnings:				
Net income (loss)	**$ (13,660)**	$ 25,090	**$ 12,695**	$ 86,149
Less: Allocation to participating securities	**—**	223	**74**	862
Net income (loss) attributable to Sotera Health Company common shareholders	**$ (13,660)**	$ 24,867	**$ 12,621**	$ 85,287
Weighted Average Common Shares:				
Weighted-average common shares outstanding - basic	**281,105**	280,142	**280,898**	279,988
Dilutive effect of potential common shares[(a)]	**—**	30	**2,292**	105
Weighted-average common shares outstanding - diluted	**281,105**	280,172	**283,190**	280,093
Earnings per Common Share:				
Net income (loss) per common share attributable to Sotera Health Company common shareholders - basic	**$ (0.05)**	$ 0.09	**$ 0.04**	$ 0.31
Net income (loss) per common share attributable to Sotera Health Company common shareholders - diluted	**(0.05)**	0.09	**0.04**	0.31

(a) As the Company reported a net loss for the three months ended September 30, 2023, the calculation of diluted weighted average common shares outstanding is not applicable because the effect of including the potential common shares would be anti-dilutive.

Diluted earnings per share does not consider the following potential common shares as the effect would be anti-dilutive:

	Three Months Ended September 30,		Nine Months Ended September 30,	
in thousands of share amounts	**2023**	**2022**	**2023**	**2022**
Stock options	**7,001**	3,526	**4,049**	3,399
RSUs	**3,315**	1,121	**303**	34
Total anti-dilutive securities	**10,316**	4,647	**4,352**	3,433

15. Commitments and Contingencies

From time to time, we may be subject to various lawsuits and other claims, as well as gain contingencies, in the ordinary course of our business. In addition, from time to time, we receive communications from government or regulatory agencies concerning investigations or allegations of noncompliance with laws or regulations in jurisdictions in which we operate.

We establish reserves for specific liabilities in connection with regulatory and legal actions that we determine to be both probable and reasonably estimable. If a potentially material loss contingency is not probable, but is reasonably possible, or is probable but cannot be estimated, then the nature of the contingent liability is disclosed, together with an estimate of the range of possible loss if the range is determinable and material. In certain of the matters described below, we are not able to estimate potential liability because of the uncertainties related to the outcome(s) and/or the amount(s) or range(s) of loss. While it is not possible to determine the ultimate disposition of each of these matters, the ultimate resolution of pending regulatory and legal matters in future periods, including the matters described below, may have a material adverse effect on our financial condition, results of operations and/or liquidity. The Company may also incur material defense and settlement costs, diversion of management resources and other adverse effects on our business, financial condition, and/or results of operations.

Ethylene Oxide Tort Litigation

Sterigenics U.S., LLC ("Sterigenics") and other medical supply sterilization companies have been subjected to tort lawsuits alleging various injuries caused by low-level environmental exposure to EO emissions from sterilization facilities. Those lawsuits, as detailed further below, are individual claims, as opposed to class actions.

Illinois

More than 854 plaintiffs filed lawsuits, and approximately 28 individuals threatened to file lawsuits, alleging personal injuries or wrongful death resulting from purported emissions and releases of EO from Sterigenics' former Willowbrook facility. The lawsuits were consolidated for pre-trial purposes by the Circuit Court of Cook County, Illinois (the "Consolidated Case"). The first jury trial began in August 2022 and, on September 19, 2022, the jury rendered a verdict in favor of the plaintiff and awarded damages in the amount of $358.7 million, including $36.1 million of compensatory damages, $320.0 million of punitive damages and $2.6 million of prejudgment interest against Sterigenics and Sotera Health LLC (the "Defendant Subsidiaries"). The Defendant Subsidiaries filed a Motion for Post Trial Relief, which was denied on December 19, 2022. On January 9, 2023, the Defendant Subsidiaries filed a Notice of Appeal to the First District Appellate Court in Illinois. The second jury trial began in October 2022 and, on November 18, 2022, the jury returned a defense verdict on all counts. On January 4, 2023, the plaintiff in the second trial filed a motion for post-trial relief seeking an order reversing and/or vacating the verdict, granting a new trial, and/or entering judgment in the plaintiff's favor notwithstanding the verdict.

On January 9, 2023, the Defendant Subsidiaries entered into binding term sheets (the "Willowbrook Term Sheets") with the "Plaintiffs' Executive Committee" (the "PEC") appointed to act on behalf of the more than 20 law firms ("Plaintiffs' Counsel") representing the plaintiffs in the Consolidated Case and other clients with personal injury claims that had not yet been filed (each an "Eligible Claimant" and collectively, the "Eligible Claimants"). Based on our assessment that it was probable that the conditions to the Willowbrook Term Sheets would be satisfied or waived, we recorded a charge of $408.0 million for the year ended December 31, 2022. The Willowbrook Term Sheets provided an agreed path to final settlement of the Eligible Claimants' claims, subject to the satisfaction or waiver of certain conditions, including the negotiation and execution of full settlement agreements in accordance with the Willowbrook Term Sheets.

On March 28, 2023, the Defendant Subsidiaries and the PEC entered into full settlement agreements (the "Willowbrook Settlement Agreements") to resolve the claims that were or could have been alleged by 882 Eligible Claimants related to or arising from alleged emissions of EO from Sterigenics' operations in or around Willowbrook and related claims that were or could have been alleged by Eligible Claimants seeking to challenge any transfer of assets to or from the Company, its subsidiaries and certain affiliates to any other entity or person (the "Willowbrook Covered Claims"). The Company and Defendant Subsidiaries deny any liability for the Willowbrook Covered Claims and, per their express terms, the Willowbrook Settlement Agreements are not to be construed as an admission of liability or that the Company or Defendant Subsidiaries engaged in any wrongful, tortious, or unlawful activity or that use and/or emissions of EO from Sterigenics' operations posed any safety hazard to the surrounding communities.

The Willowbrook Settlement Agreements provided that final settlement was conditioned, among other things, on successful completion of a claims administration process and satisfaction (or waiver by the Defendant Subsidiaries) of specific participation requirements, the dismissal with prejudice of the Willowbrook Covered Claims of all Eligible Claimants participating in the settlement, and court approval of the settlement as a good faith settlement under the Illinois Joint Contribution Among Tortfeasors Act.

On May 1, 2023, Sterigenics contributed $408.0 million to settlement escrow funds (the "Settlement Funds") to be used, if the conditions of the Willowbrook Settlement Agreements were satisfied or waived, to pay all settlement fees and expenses and cash payments to the Eligible Claimants participating in the settlement.

The claims administration process concluded with 879 of 882 Eligible Claimants providing opt-in consents to participate in the settlement (the "Settling Claimants"). Pursuant to the Willowbrook Settlement Agreements, the three Eligible Claimants who did not opt in (each a "Non-Settling Willowbrook Claimant," and collectively the "Non-Settling Willowbrook Claimants") created an option for the Defendant Subsidiaries to exercise walkaway rights. On June 22, 2023, after evaluating the available information about the claims of the Non-Settling Willowbrook Claimants, the Defendant Subsidiaries waived their walkaway rights and chose to proceed to final settlement with the Settling Claimants (the “Willowbrook Settlement”).

On June 23, 2023, the Circuit Court of Cook County entered an order confirming that the Willowbrook Settlement was a good-faith settlement under the Illinois Contribution Among Joint Tortfeasors Act. On June 30, 2023, the Settlement Funds were released from escrow to the PEC’s Qualified Settlement Funds. The amounts allocated by the PEC to the Non-Settling Willowbrook Claimants represent an immaterial fraction of the Settlement Funds and will remain in escrow until December 31, 2023, at which point, absent an opt-in election by a Non-Settling Willowbrook Claimant, the funds allocated to that Non-Settling Willowbrook Claimant will revert to Sterigenics. On July 6, 2023, the claims of the Settling Claimants against the Defendant Subsidiaries were dismissed with prejudice, with the Circuit Court of Cook County retaining jurisdiction to adjudicate disputes over liens on the settlement proceeds to be paid to the Settling Claimants and to oversee the administration of the settlements of the wrongful death cases.

The three Non-Settling Willowbrook Claimants’ cases will proceed in the Circuit Court of Cook County, Illinois. Between June 2023 and September 2023, eight new personal injury lawsuits relating to the Willowbrook facility were filed in the Circuit Court of Cook County against Sterigenics, Sotera Health Services, LLC and other parties (the “Post-Settlement Willowbrook Cases”). One Post-Settlement Willowbrook Case has been removed to the United States District Court for the Northern District of Illinois, and a motion to remand is pending. The remaining Post-Settlement Willowbrook Cases will proceed in the Circuit Court of Cook County.

Georgia

Subsidiaries of the Company and other parties are defendants in lawsuits in the State Court of Cobb County, Georgia and the State Court of Gwinnett County, Georgia in which plaintiffs allege personal injuries and property devaluation resulting from emissions or releases of EO from or at Sterigenics’ Atlanta facility and seek damages and other forms of relief.

One personal injury lawsuit pending in Gwinnett County (the “Buczek case”) was scheduled to begin trial in late October 2023. Approximately 300 personal injury claims pending in Cobb County have been consolidated for pretrial purposes (the “Consolidated Personal Injury Cases”) and are proceeding under a case management order pursuant to which a “pool” of these cases will proceed to determination of general causation issues in Phase 1 and specific causation issues in Phase 2; the first trial of any “pool” case that survives Phases 1 and 2 is expected to begin in September or October 2025. The remaining Consolidated Personal Injury Cases are stayed. One personal injury lawsuit pending in Cobb County has not been consolidated and is proceeding independently. Nine lawsuits pending in Cobb County include both personal injury and property claims (the “Dual Injury Cases”). By agreement of the parties, the Dual Injury Cases will be included in the Consolidated Personal Injury Cases and stayed.

Our subsidiaries are also defendants in approximately 365 property devaluation lawsuits. One property lawsuit was filed in the State Court of Gwinnett County. The remaining property lawsuits were filed in the State Court of Cobb County, have been consolidated for pretrial purposes (the “Consolidated Property Cases”) and are proceeding under a case management order pursuant to which ten cases will proceed with dispositive motions and discovery while the remaining cases are stayed.

On October 16, 2023, Sterigenics and Sotera Health LLC entered into a binding term sheet (the “October 2023 Term Sheet”) outlining an agreement in principle to resolve the *Buczek* case and the 78 other Georgia EO claims being pursued by Plaintiff’s counsel in the *Buczek* case (the “Gwinnett and Cobb Counties Settlement”), including the property devaluation case pending in the State Court of Gwinnett County and 77 personal injury claims pending in the State Court of Cobb Country (each individually a “Covered Claim” and collectively the “Covered Claims”). Pursuant to the October 2023 Term Sheet, Sterigenics will pay $35.0 million and the Covered Claims will be dismissed with prejudice. The settlement process is expected to be finalized by the end of the year. The Gwinnett and Cobb Counties Settlement is subject to 100% of the plaintiffs with Covered Claims consenting to their respective settlement payment allocations, which will be determined by the plaintiffs’ lawyers. Sterigenics has the right to waive the 100% participation requirement, in which case the Gwinnett and Cobb Counties Settlement will be binding on only those plaintiffs who opt into the settlement. On October 17, 2023, the State Court of Gwinnett County stayed the *Buczek* trial.

The final settlement of the Covered Claims in the Gwinnett and Cobb Counties Settlement may not occur or may not occur for all Covered Claims if the conditions of the settlement are not met, including, but not limited to, a failure to satisfy the 100% participation requirement.

The October 2023 Term Sheet expressly provides that Sterigenics and Sotera Health LLC deny all liability and that nothing in the October 2023 Term Sheet constitutes an admission of any alleged fact, liability, or fault or that the use and/or emission of EO by and/or from the Atlanta Facility or any other Sterigenics facility have ever caused or created health risks or other hazards to any person or surrounding communities. The Company intends to vigorously defend the remaining EO cases, including the balance of the cases in Georgia, which are all pending in the State Court of Cobb County.

New Mexico

On December 22, 2020, the New Mexico Attorney General filed a lawsuit in the Third Judicial District Court, Doña Ana County, New Mexico against the Company and certain subsidiaries alleging that emissions and releases of EO from Sterigenics' facility in Santa Teresa, New Mexico have deteriorated the air quality in Santa Teresa and surrounding communities and materially contributed to increased health risks suffered by residents of those communities. The Complaint asserted claims for public nuisance, negligence, strict liability, violations of New Mexico's Public Nuisance Statute and Unfair Practices Act and sought various forms of relief, including injunctive relief and damages. On June 29, 2021, the Court entered an Order Granting Preliminary Injunction prohibiting Sterigenics from allowing any uncontrolled emissions or releases of EO from the Santa Teresa facility. On December 20, 2021, the Court entered an order establishing a protocol to monitor Sterigenics' compliance with the preliminary injunction. Operations at the facility continue to comply with the June 2021 and December 2021 orders.

On September 13, 2022, the Court entered a Scheduling Order that set a trial date of June 3, 2024. On August 10, 2023, the Court granted Sterigenics' motion for summary judgment on strict liability, the Unfair Practices Act claim, and claims for decreased property values, increased healthcare costs and medical monitoring costs, and instructed the State to amend its Complaint in compliance with the order and to exclude any claim for injunctive relief (the "Summary Judgment Order"). On August 25, 2023, the State filed a Motion for Reconsideration of the Summary Judgment Order, which remains pending. On September 12, 2023, the State filed its Amended Complaint; the Company's response will be due after the Court rules on the motion for reconsideration. A defense motion challenging the Court's jurisdiction over Sotera Health Company and another defendant also remain pending.

On April 24, 2023, a lawsuit was filed against the Company, Sterigenics and certain other subsidiaries alleging wrongful death caused by exposure to emissions and releases of EO from Sterigenics' facility in Santa Teresa, New Mexico while the decedent was working at a different company's facility approximately one mile away. Motions to dismiss filed in June and August 2023 remain pending.

* * *

Additional EO tort lawsuits may be filed in the future against the Company and/or its subsidiaries relating to Sterigenics' Willowbrook, Atlanta, Santa Teresa or other EO facilities. Based on our view of the strength of the science and related evidence that emissions of EO from Sterigenics' operations have not caused and could not have caused the harms alleged in such lawsuits, we believe that losses in the remaining or future EO cases are not probable.

Although the Company intends to defend itself vigorously on the merits of the remaining EO cases, future settlements of EO cases are reasonably possible. The Willowbrook Settlement and the Gwinnett and Cobb Counties Settlement were driven by dynamics unique to the cases that were settled and thus should not give rise to presumptions that the Company will settle additional EO cases and/or that any such settlements will be for comparable amounts.

Potential trial and settlement outcomes can vary widely based a host of factors. Future cases will be presided over by different judges, tried by different counsel presenting different evidence and decided by different juries. The substantive and procedural laws of the various jurisdictions in which the EO tort cases are pending vary and can meaningfully impact the litigation process and outcome of a case. Each plaintiff's claim involves unique facts and evidence, including the circumstances of the plaintiff's alleged exposure, the type and severity of the plaintiff's disease and the plaintiff's medical history and course of treatment. The outcomes of trials before juries are rarely certain and a judgment entered or settlement reached in one case is not representative of the outcome of other seemingly comparable cases. As a result, it is not possible to estimate a reasonably possible loss or range of loss with respect to any future settlements.

Insurance Coverage for Environmental Liabilities

Our undisputed insurance coverage for litigation related to past alleged environmental liabilities, like the litigation pending in Illinois, Georgia and New Mexico described above, has limits of $10.0 million per occurrence and $20.0 million in the aggregate. The per occurrence limit related to the Willowbrook, Illinois litigation was fully utilized by June 30, 2020. The remaining $10.0 million was fully utilized by March 31, 2023 for occurrences related to the EO litigation in Georgia and New Mexico described above. Our insurance for future alleged environmental liabilities excludes coverage for EO claims.

We are pursuing additional insurance coverage for our legal expenses related to litigation like the Illinois, Georgia and New Mexico matters described above. In 2021, Sterigenics filed an insurance coverage lawsuit in the U.S. District Court for the Northern District of Illinois relating to two commercial general liability policies issued in the 1980s (the “No. Dist. of IL Coverage Lawsuit”). The court has issued an order declaring that the defendant insurer owes Sterigenics and another insured party a duty to defend the EO tort litigation relating to the Willowbrook facility (the “Duty to Defend Order”) and owes Sterigenics approximately $75.5 million in defense costs through September 30, 2022 (the “Past Defense Costs Judgment”). Motions for awards of pre-judgment and post-judgment interest on the Past Defense Costs Judgment and additional defense costs through July 31, 2023 are pending. The defendant insurer is appealing the Duty to Defend Order and Past Defense Costs Judgment. Sterigenics is also a party in insurance coverage lawsuits pending in the Delaware Superior Court and the Circuit Court of Cook County seeking insurance coverage from various historical commercial general liability policies for certain EO litigation settlement amounts and defense costs that the insurer in the No. Dist. of IL Coverage Lawsuit may fail to fund. It is unknown how much, if any, of the insurance proceeds sought will be recovered.

Sotera Health Company Securities Litigation & Related Matters

On January 24, 2023, a putative stockholder class action was filed in the U.S. District Court for the Northern District of Ohio against the Company, its directors, certain senior executives, the Company’s private equity stockholders and the underwriters of the Company’s initial public offering (“IPO”) in November 2020 and the Company’s secondary public offering (“SPO”) in March 2021 (the “Michigan Funds Litigation”). On April 17, 2023, the court appointed the Oakland County Employees’ Retirement System, Oakland County Voluntary Employees’ Beneficiary Association, and Wayne County Employees’ Retirement System (the “Michigan Funds”) to serve as lead plaintiff to prosecute claims on behalf of a proposed class of stockholders who acquired shares of the Company in connection with our IPO or SPO or between November 20, 2020 and September 19, 2022 (the “Proposed Class”). The Michigan Funds allege that statements made regarding the safety of the Company’s use of EO and/or the litigation and other risks of its EO operations violated Sections 11, 12(a)(2) and 15 of the Securities Act of 1933 (when made in the registration statements for the IPO and SPO) and Sections 10(b), Section 20(a) and Rule 10b-5 of the Securities Exchange Act of 1934 (when made in subsequent securities filings and other contexts). On June 1, 2023, the Michigan Funds filed an Amended Complaint. Defendants have moved to dismiss the Amended Complaint and that motion remains pending.

On May 15, 2023, and July 25, 2023, the Company received demands pursuant to 8 Del. C. §220 for inspections of its books and records from shareholders purporting to be investigating the Company’s internal operations, disclosure practices and other matters alleged and at issue in the Michigan Funds Litigation (the “220 Demands”).

The Company believes that the allegations and claims in the Michigan Funds Litigation and 220 Demands are without merit and plans to vigorously defend the Michigan Funds Litigation.

16. Financial Instruments and Financial Risk

Derivative Instruments

We do not use derivatives for trading or speculative purposes and are not a party to leveraged derivatives.

Derivatives Designated in Hedge Relationships

From time to time, the Company utilizes interest rate derivatives designated in hedge relationships to manage interest rate risk associated with our variable rate borrowings. These instruments are measured at fair value with changes in fair value recorded as a component of “Accumulated other comprehensive income (loss)” on our Consolidated Balance Sheets.

In March 2023, we entered into an interest rate swap agreement with a notional amount of $400.0 million. The interest rate swap has a forward start date of August 23, 2023 and expires on August 23, 2025. We have designated the interest rate swap as a cash flow hedge designed to hedge the variability of cash flows attributable to changes in the SOFR benchmark interest rate of our 2023 Term Loan. We receive interest at the one-month Term SOFR rate and pay a fixed interest rate under the terms of the swap agreement.

In May 2022, we entered into two interest rate cap agreements with a combined notional amount of $1,000.0 million for a total option premium of $4.1 million. The interest rate caps became effective as of July 31, 2023 and expire on July 31, 2024. We have designated these interest rate caps as cash flow hedges designed to hedge the variability of cash flows attributable to changes in the benchmark interest rate of our Term Loan. Under the current terms of the loan agreement, the benchmark interest rate index transitioned from LIBOR to Term SOFR on June 30, 2023. Accordingly, the interest rate cap agreements hedge the variability of cash flows attributable to changes in SOFR by limiting our cash flow exposure related to Term SOFR under a portion of our variable rate borrowings to 3.5%.

In October 2021, we entered into two interest rate cap agreements with a combined notional amount of $1,000.0 million for a total option premium of $1.8 million. Both interest rate caps were effective on December 31, 2022 and expired on July 31, 2023. These interest rate caps were designated as cash flow hedges and were designed to hedge the variability of cash flows attributable to changes in LIBOR (or its successor), the benchmark interest rate being hedged, by limiting our cash flow exposure related to the LIBOR base rate under a portion of our variable rate borrowings to 1.0%.

Derivatives Not Designated in Hedge Relationships

The Company previously entered into interest rate derivatives to manage economic risks associated with our variable rate borrowings that were not designated in hedge relationships. These instruments were recorded at fair value on the Consolidated Balance Sheets, with any changes in fair value recorded in “Interest expense, net” in the Consolidated Statements of Operations and Comprehensive Income (Loss).

The Company also routinely enters into foreign currency forward contracts to manage foreign currency exchange rate risk of our intercompany loans in certain of our international subsidiaries and non-functional currency assets and liabilities. The foreign currency forward contracts expire on a monthly basis.

Embedded Derivatives

We have embedded derivatives in certain of our customer and supply contracts as a result of the currency of the contract being different from the functional currency of the parties involved. Changes in the fair value of the embedded derivatives are recognized in “Other expense (income), net” in the Consolidated Statements of Operations and Comprehensive Income (Loss).

The following table provides a summary of the notional and fair values of our derivative instruments:

(in U.S. Dollars; notional in millions, fair value in thousands)	September 30, 2023			December 31, 2022		
		Fair Value			Fair Value	
	Notional Amount	Derivative Assets	Derivative Liabilities	Notional Amount	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments:						
Interest rate caps	**1,000.0**	**$ 15,327**	**$ —**	$ 2,000.0	$ 34,764	$ —
Interest rate swaps	**400.0**	**6,808**	**—**	—	—	—
Derivatives not designated as hedging instruments						
Foreign currency forward contracts	**$ 172.1**	**$ —**	**$ 1,221**	$ 151.5	$ —	$ 272
Embedded derivatives	**157.5** (a)	**2,287**	**4,176**	179.9 (a)	2,721	3,508
Total	**$ 1,729.6**	**$ 24,422**	**$ 5,397**	$ 2,331.4	$ 37,485	$ 3,780

(a) Represents the total notional amounts for certain of the Company's supply and sales contracts accounted for as embedded derivatives.

Embedded derivatives and foreign currency forward contracts are included in "Prepaid expenses and other current assets" and "Accrued liabilities" on our Consolidated Balance Sheets depending upon their position at period end. Interest rate swaps and interest rate caps are included in "Other assets," and "Noncurrent liabilities" on the Consolidated Balance Sheets depending upon their position at period end.

The following tables summarize the activities of our derivative instruments for the periods presented, and the line item they are recorded in the Consolidated Statements of Operations and Comprehensive Income (Loss):

(thousands of U.S. dollars)	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Unrealized loss (gain) on interest rate derivatives recorded in interest expense, net	**$ —**	$ 3,348	**$ —**	$ (6,098)
Realized gain on interest rate derivatives recorded in interest expense, net[(a)]	**(7,277)**	(4,473)	**(27,288)**	(5,752)
Unrealized loss on embedded derivatives recorded in other expense (income), net	**1,833**	359	**1,087**	1,776
Realized loss (gain) on foreign currency forward contracts recorded in foreign exchange (gain) loss	**1,946**	4,157	**3**	3,662
Unrealized loss (gain) on foreign currency forward contracts recorded in foreign exchange (gain) loss	**1,230**	—	**949**	—

(a) For the three and nine months ended September 30, 2023, amounts represent periodic settlement of interest rate caps and swaps.

We expect to reclassify approximately $16.8 million of net gains on derivative instruments from accumulated other comprehensive income (loss) to income during the next 12 months associated with our cash flow hedges. Refer to Note 12,"Other Comprehensive Income (Loss)" for unrealized gains on interest rate derivatives, net of applicable tax, recorded in other comprehensive income (loss) and amounts reclassified from accumulated other comprehensive income to interest expense, net of applicable tax, during the three and nine months ended September 30, 2023.

Credit Risk

Certain of our financial assets, including cash and cash equivalents, are exposed to credit risk.

We are also exposed, in our normal course of business, to credit risk from our customers. As of September 30, 2023 and December 31, 2022, accounts receivable was net of an allowance for uncollectible accounts of $2.1 million and $1.9 million, respectively.

Credit risk on financial instruments arises from the potential for counterparties to default on their contractual obligations to us. We are exposed to credit risk in the event of non-performance, but do not anticipate non-performance by any of the counterparties to our financial instruments. We limit our credit risk by dealing with counterparties that are considered to be of high credit quality. In the event of non-performance by counterparties, the carrying value of our financial instruments represents the maximum amount of loss that would be incurred.

Our credit team evaluates and regularly monitors changes in the credit risk of our customers. We routinely assess the collectability of accounts receivable and maintain an adequate allowance for uncollectible accounts to address potential credit losses. The process includes a review of customer financial information and credit ratings, current market conditions as well as the expected future economic conditions that may impact the collection of trade receivables. We regularly review our customers' past due amounts through an analysis of aged accounts receivables, specific customer past due aging amounts, and the history of trade receivables written off. Upon concluding that a receivable balance is not collectible, the balance is written off against the allowance for uncollectible accounts.

Fair Value Hierarchy

The fair value of our financial instruments is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The valuation techniques we would use to determine such fair values are described as follows: Level 1—fair values determined by inputs utilizing quoted prices in active markets for identical assets or liabilities; Level 2—fair values based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable; Level 3—fair values determined by unobservable inputs reflecting our own assumptions, consistent with reasonably available assumptions made by other market participants.

The following table discloses the fair value of our financial assets and liabilities:

As of September 30, 2023		Fair Value		
(thousands of U.S. dollars)	Carrying Amount	Level 1	Level 2	Level 3
Derivatives designated as hedging instruments[a]				
Interest rate caps	$ 15,327	—	$ 15,327	—
Interest rate swaps	6,808	—	6,808	—
Derivatives not designated as hedging instruments[b]				
Foreign currency forward contract liabilities	1,221	—	1,221	—
Embedded derivative assets	2,287	—	2,287	—
Embedded derivative liabilities	4,176	—	4,176	—
Current portion of long-term debt				
Term loan B, due 2026	4,786	—	4,988	—
Other long-term debt[c]	449	—	449	—
Long-Term Debt[d]				
Term loan, due 2026	1,750,185	—	1,749,877	—
Term loan B, due 2026	472,604	—	493,763	—
Finance Lease Obligations (with current portion)[e]	71,617	—	71,617	—

As of December 31, 2022 (thousands of U.S. dollars)	Carrying Amount	Fair Value		
		Level 1	Level 2	Level 3
Derivatives designated as hedging instruments[(a)]				
Interest rate caps	$ 34,764	$ —	$ 34,764	$ —
Derivatives not designated as hedging instruments[(b)]				
Foreign currency forward contracts	272	—	272	—
Embedded derivative assets	2,721	—	2,721	—
Embedded derivative liabilities	3,508	—	3,508	—
Current portion of long-term debt[(c)]				
Revolving credit facility	196,672	—	196,672	—
Other long-term debt	447	—	447	—
Long-Term Debt[(d)]				
Term loan, due 2026	1,747,115	—	1,626,460	—
Finance Lease Obligations (with current portion)[(e)]	58,677	—	58,677	—

(a) Derivatives designated as hedging instruments are measured at fair value with changes in fair value recorded as a component of accumulated other comprehensive income (loss). Interest rate caps and swaps are valued using pricing models that incorporate observable market inputs including interest rate and yield curves.

(b) Derivatives that are not designated as hedging instruments are measured at fair value with gains or losses recognized immediately in the Consolidated Statements of Operations and Comprehensive Income (Loss). Embedded derivatives are valued using internally developed models that rely on observable market inputs, including foreign currency forward curves. Foreign currency forward contracts are valued by reference to changes in the forward foreign currency exchange rate over the life of the contract.

(c) Carrying value of other long-term debt and revolving credit facility approximates fair value.

(d) Carrying amounts of long-term debt instruments are reported net of discounts and debt issuance costs. The estimated fair value of these instruments is based on quoted prices for the term loans due in 2026 in inactive markets as provided by an independent fixed income security pricing service.

(e) Fair value approximates carrying value.

17. Segment Information

We identify our operating segments based on the way we manage, evaluate and internally report our business activities for purposes of allocating resources and assessing performance. We have three reportable segments: Sterigenics, Nordion and Nelson Labs. We have determined our reportable segments based upon an assessment of organizational structure, service types, and internally prepared financial statements. Our chief operating decision maker evaluates performance and allocates resources based on net revenues and segment income after the elimination of intercompany activities. The accounting policies of our reportable segments are the same as those described in Note 1, “Significant Accounting Policies” of the Company’s annual consolidated financial statements and accompanying notes in our 2022 10-K.

Sterigenics

Sterigenics provides outsourced terminal sterilization and irradiation services for the medical device, pharmaceutical, food safety and advanced applications markets using three major technologies: gamma irradiation, EO processing and E-beam irradiation.

Nordion

Nordion is a leading global provider of Co-60 used in the sterilization and irradiation processes for the medical device, pharmaceutical, food safety, and high-performance materials industries, as well as in the treatment of cancer. In addition, Nordion is a leading global provider of gamma irradiation systems.

Nelson Labs

Nelson Labs provides outsourced microbiological and analytical chemistry testing and advisory services for the medical device and pharmaceutical industries.

Segment Revenue Concentrations

For the three months ended September 30, 2023, four customers reported within the Nordion segment individually represented 10% or more of the segment’s total net revenues. These customers represented 15.4%, 13.5%, 13.5%, and 11.3% of the total segment’s external net revenues for the three months ended September 30, 2023. For the three months ended September 30, 2022, three customers reported within the Nordion segment individually represented 10% or more of the segment’s total net revenues. These customers represented 21.0%, 14.7%, and 10.1% of the total segment’s external net revenues for the three months ended September 30, 2022.

For the nine months ended September 30, 2023, four customers reported within the Nordion segment individually represented 10% or more of the segment’s total net revenues. These customers represented 19.9%, 14.4%, 12.7% , and 12.1% of the total segment’s external net revenues for the nine months ended September 30, 2023. For the nine months ended September 30, 2022, four customers reported within the Nordion segment individually represented 10% or more of the segment’s total net revenues. These customers represented 17.1%, 16.2%, 11.8%, and 11.7% of the total segment's external net revenues for the nine months ended September 30, 2022.

Financial information for each of our segments is presented in the following table:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(thousands of U.S. dollars)	**2023**	**2022**	**2023**	**2022**
Segment revenues[(a)]				
Sterigenics	**$ 168,347**	$ 157,723	**$ 494,934**	$ 464,977
Nordion	**40,098**	35,071	**80,624**	119,551
Nelson Labs	**54,732**	55,910	**163,491**	167,569
Total net revenues	**$ 263,177**	$ 248,704	**$ 739,049**	$ 752,097
Segment income[(b)]				
Sterigenics	**$ 93,169**	$ 85,587	**$ 267,459**	$ 250,088
Nordion	**24,052**	20,294	**43,362**	69,179
Nelson Labs	**17,107**	19,271	**50,460**	57,369
Total segment income	**$ 134,328**	$ 125,152	**$ 361,281**	$ 376,636

(a) Revenues are reported net of intersegment sales. Our Nordion segment recognized $11.2 million and $7.4 million in revenues from sales to our Sterigenics segment for the three months ended September 30, 2023 and 2022, respectively, and $28.8 million and $38.7 million in revenues from sales to our Sterigenics segment for the nine months ended September 30, 2023 and 2022, respectively, that is not reflected in net revenues in the table above. Intersegment sales for Sterigenics and Nelson Labs are immaterial for these periods.

(b) Segment income is only provided on a net basis to the chief operating decision maker and is reported net of intersegment profits.

Corporate operating expenses for executive management, accounting, information technology, legal, human resources, treasury, investor relations, corporate development, tax, purchasing, and marketing not directly incurred by a segment are allocated to the segments based on total net revenue. Corporate operating expenses that are directly incurred by a segment are reflected in each segment’s income.

Capital expenditures by segment for the nine months ended September 30, 2023 and 2022 were as follows:

(thousands of U.S. dollars)	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Sterigenics	**$ 115,438**	$ 90,444
Nordion	**23,875**	12,045
Nelson Labs	**10,836**	8,153
Total capital expenditures	**$ 150,149**	$ 110,642

Total assets and depreciation and amortization expense by segment are not readily available and are not reported separately to the chief operating decision maker.

A reconciliation of segment income to consolidated income before taxes is as follows:

(thousands of U.S. dollars)	Three Months Ended September 30, 2023	Three Months Ended September 30, 2022	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Segment income	**$ 134,328**	$ 125,152	**$ 361,281**	$ 376,636
Less adjustments:				
Interest expense, net[(a)]	**30,464**	20,080	**82,275**	53,974
Depreciation and amortization[(b)]	**38,175**	36,104	**117,203**	109,092
Share-based compensation[(c)]	**8,378**	4,616	**24,135**	14,955
Gain on foreign currency and derivatives not designated as hedging instruments, net[(d)]	**1,333**	3,194	**1,459**	(4,788)
Acquisition and divestiture related charges, net[(e)]	**72**	447	**817**	978
Business optimization project expenses[(f)]	**1,237**	1,035	**7,093**	1,609
Plant closure expenses[(g)]	**126**	2,627	**(640)**	3,776
Impairment of investment in unconsolidated affiliate[(h)]	**—**	—	**—**	9,613
Professional services and other expenses relating to EO sterilization facilities[(i)]	**18,518**	14,501	**51,900**	50,238
Georgia EO litigation settlement[(j)]	**35,000**	—	**35,000**	—
Accretion of asset retirement obligation[(k)]	**555**	526	**1,682**	1,644
COVID-19 expenses[(l)]	**—**	6	**—**	154
Consolidated income before taxes	**$ 470**	$ 42,016	**$ 40,357**	$ 135,391

(a) The three and nine months ended September 30, 2023 exclude $10.2 million and $18.0 million, respectively, of interest expense, net on Term Loan B attributable to the loan proceeds that were used to fund the $408.0 million Illinois EO litigation settlement. The three and nine months ended September 30, 2022 exclude $3.3 million of unrealized loss and $6.1 million of unrealized gain, respectively, on interest rate derivatives not designated as hedging instruments.

(b) Includes depreciation of Co-60 held at gamma irradiation sites.

(c) Represents share-based compensation expense to employees and non-employee directors.

(d) Represents the effects of (i) fluctuations in foreign currency exchange rates, (ii) non-cash mark-to-fair value of embedded derivatives relating to certain customer and supply contracts at Nordion, and (iii) unrealized gains and losses on interest rate caps not designated as hedging instruments.

(e) Represents (i) certain direct and incremental costs related to the acquisitions of RCA and BioScience Labs and certain related integration efforts as a result of those acquisitions, (ii) the earnings impact of fair value adjustments (excluding those recognized within amortization expense) resulting from the businesses acquired, and (iii) transition services income and non-cash deferred lease income associated with the terms of the divestiture of the Medical Isotopes business in 2018.

(f) Represents professional fees, exit costs, severance and other payroll costs, and other costs associated with business optimization and cost savings projects relating to the integration of acquisitions, operating structure realignment and other process enhancement projects.

(g) Represents professional fees, severance and other payroll costs, and other costs including ongoing lease and utility expenses associated with the closure of the Willowbrook, Illinois facility. The nine months ended September 30, 2023 also includes a $1.0 million cancellation fee received from a tenant in connection with the termination of an office space lease at the Nordion facility.
(h) Represents an impairment charge on our equity method investment in a joint venture. Refer to Note 1, “Basis of Presentation”.
(i) Represents litigation and other professional fees associated with our EO sterilization facilities. This includes $10.2 million and $18.0 million of interest expense, net for the three and nine months ended September 30, 2023, respectively, associated with Term Loan B that was issued to finance the $408.0 million cost of the Willowbrook Settlement under the Willowbrook Settlement Agreements. See Note 15, “Commitments and Contingencies”.
(j) Represents the cost of the Gwinnett and Cobb Counties Settlement as outlined in the October 2023 Term Sheet, subject to all of the plaintiffs consenting to their respective settlement payment allocations. See Note 15, “Commitments and Contingencies”.
(k) Represents non-cash accretion of asset retirement obligations related to Co-60 and gamma processing facilities, which are based on estimated site remediation costs for any future decommissioning of these facilities (without regard for whether the decommissioning services would be performed by employees of Nordion, instead of by a third party) and are accreted over the life of the asset.
(l) Represents non-recurring costs associated with the COVID-19 pandemic, including incremental costs to implement workplace health and safety measures.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion and analysis in conjunction with our consolidated financial statements and related notes included in Part I, Item 1 of this Quarterly Report on Form 10-Q, as well as the audited consolidated financial statements and notes and Management's Discussion and Analysis of Financial Condition and Results of Operations contained in our 2022 10-K. This discussion and analysis contains forward-looking statements that are based on management's current expectations, estimates and projections about our business and operations. Our actual results may differ materially from those currently anticipated and expressed in such forward-looking statements as a result of various factors, including the factors we describe in the section entitled Part II, Item 1A, "Risk Factors" in this Quarterly Report on Form 10-Q, as well as Part I, Item 1A, "Risk Factors" in our 2022 10-K.

OVERVIEW

We are a leading global provider of mission-critical end-to-end sterilization solutions, lab testing and advisory services for the healthcare industry. We are driven by our mission: Safeguarding Global Health®. We provide end-to-end sterilization as well as microbiological and analytical lab testing and advisory services to help ensure that medical, pharmaceutical and food products are safe for healthcare practitioners, patients and consumers in the United States and around the world. Our services are an essential aspect of our customers' manufacturing process and supply chains, helping to ensure sterilized medical products reach healthcare practitioners and patients. Most of these services are necessary for our customers to satisfy applicable government requirements.

We serve our customers throughout their product lifecycles, from product design to manufacturing and delivery, helping to ensure the sterility, effectiveness and safety of their products for the end user. We operate across two core businesses: sterilization services and lab services. The combination of Sterigenics, our terminal sterilization business, and Nordion, our Co-60 supply business, makes us the only vertically integrated global gamma sterilization provider in the sterilization industry. For financial reporting purposes, our sterilization services business consists of two reportable segments, Sterigenics and Nordion, and our lab services business consists of one reportable segment, Nelson Labs.

For the three and nine months ended September 30, 2023, respectively, we recorded net revenues of $263.2 million and $739.0 million, net loss of $13.7 million and net income of $12.7 million, Adjusted Net Income of $58.6 million and $156.0 million, and Adjusted EBITDA of $134.3 million and $361.3 million. For the definition of Adjusted Net Income and Adjusted EBITDA and the reconciliation of these non-GAAP measures from net income (loss), please see "Non-GAAP Financial Measures."

STRATEGIC DEVELOPMENTS AND KEY FACTORS AFFECTING OUR RESULTS OF OPERATIONS

The following summarizes strategic developments and key factors that have impacted our operating results for the three and nine months ended September 30, 2023 and may continue to affect our performance and financial condition in future periods.

- **Business and market conditions**. Consolidated revenue and total segment income for the three months ended September 30, 2023 increased compared to the three months ended September 30, 2022, which was primarily a result of favorable pricing across all three business units and timing of Nordion's Co-60 harvest volume and shipments, in alignment with management's expectations. However, year-to-date volume contraction and an unfavorable business mix at Nelson Labs and Sterigenics resulted in a decline in consolidated net revenues and total segment income for the nine months ended September 30, 2023 compared to the same period in the prior year.

  As discussed in more detail in our 2022 10-K, a portion of our supply of Co-60 is generated by Russian nuclear reactors. We continue to monitor the potential for future disruption in the supply of Co-60 from Russian nuclear reactors.

- **Investment initiatives.** We continue to advance our growth-related investments including our three active capacity expansion projects within the Sterigenics segment and Co-60 development projects in the Nordion segment. In addition, Nelson Labs has progressed with expansion efforts to support pharma testing services alongside enhancements to the lab information management system. For the nine months ended September 30, 2023, capital expenditures increased by $39.5 million compared to the nine months ended September 30, 2022.

- **Disciplined and strategic M&A activity**. We remain committed to our highly disciplined acquisition strategy and continue to seek suitable acquisition targets.

- **Litigation costs**. We are currently the subject of tort lawsuits alleging personal injury by purported exposure to EO emitted by our current facilities in Atlanta, Georgia and Santa Teresa, New Mexico and our former facility in Willowbrook, Illinois. In addition, we are defendants in a lawsuit brought by the State of New Mexico Attorney General alleging that emissions of EO from our Santa Teresa facility constitute a public nuisance and materially contributed to increased health risks suffered by residents in the area. We maintain that these facilities did not pose and do not pose any safety risk to their surrounding communities. We deny the allegations in these lawsuits and are vigorously defending against these claims.

  In connection with ongoing litigation related to our Willowbrook, Illinois, Atlanta, Georgia and Santa Teresa, New Mexico facilities, as described in Note 15, “Commitments and Contingencies”, we recorded costs of $18.5 million and $51.9 million for the three and nine months ended September 30, 2023, respectively.

  With respect to the litigation related to our Atlanta, Georgia facility, on October 16, 2023, Sterigenics and Sotera Health LLC (the “Settling Defendants”) entered a binding term sheet to resolve 79 EO claims against the Settling Defendants in Georgia (the “October 2023 Term Sheet”), including a case that was scheduled to begin trial in the State Court of Gwinnett County on October 23, 2023. Pursuant to the October 2023 Term Sheet, Sterigenics will pay $35 million and the settling plaintiffs’ claims will be dismissed with prejudice.

  The settlement is subject to 100% of the plaintiffs consenting to their respective settlement payment allocations and to a stay of the trial that was scheduled to begin on October 23, 2023. Sterigenics has the right to waive the 100% participation requirement, in which case the settlement would be binding on only those plaintiffs who opted into the settlement. The Company denies any liability and the October 2023 Term Sheet explicitly provides that the settlement is not to be construed as an admission of any liability or that emissions from Sterigenics’ Atlanta facility have ever posed any safety hazard to the surrounding communities.

  With respect to the litigation related to our former Willowbrook, Illinois facility, on January 9, 2023, the Settling Defendants entered into binding term sheets and on March 28, 2023, the Settling Defendants entered into full agreements to settle 879 pending and threatened EO claims against the Settling Defendants in the Circuit Court of Cook County, Illinois, and U.S. District Court for the Northern District of Illinois (the “Willowbrook Settlement” and “Willowbrook Settlement Agreements”). On May 1, 2023, pursuant to the Willowbrook Settlement Agreements, the Company paid $408.0 million into a settlement escrow fund to settle the claims, subject to the satisfaction or waiver of certain conditions, including but not limited to substantially all of the plaintiffs providing opt-in consents to their individual settlement allocations and dismissing their claims with prejudice.

  On June 22, 2023, the opt-in process was completed for the January 2023 settlements of the EO claims against the Settling Defendants in the Circuit Court of Cook County, Illinois and the Settling Defendants elected to proceed with settlements with the 879 eligible claimants who opted in (the “Settling Claimants”). On June 30, 2023, all but an immaterial fraction of the settlement funds were released from escrow. The claims of the Settling Claimants against the Settling Defendants were dismissed with prejudice. An immaterial fraction of the settlement funds remains in escrow with respect to three claimants who did not opt in; these funds will revert to Sterigenics if these claimants do not opt in before December 31, 2023.

  The Willowbrook Settlement Agreements provided a pathway to comprehensively resolve the claims pending and threatened against the Company in Illinois and thereby enable the Company to focus its attention on operating the business. The Company denies any liability and maintains that its Willowbrook, Illinois operations did not pose a safety risk to the community in which it operated and believes the evidence ultimately would have compelled the rejection of the plaintiffs’ claims. See Note 15, “Commitments and Contingencies” to our consolidated financial statements.

- **Borrowings, financing costs and financial leverage**. On February 23, 2023 the Company successfully closed on a new senior secured Term Loan B facility in an aggregate principal amount of $500.0 million. The Company used the proceeds of this debt to pay down existing borrowings under the Company’s Revolving Credit Facility and fund the $408.0 million EO litigation settlement in Cook County, Illinois. In addition, the Company plans to use the remaining proceeds to further enhance liquidity and for other general corporate purposes.

  On March 21, 2023, the Company also entered into an Incremental Facility Amendment to the First Lien Credit Agreement (“Revolving Credit Facility Amendment”), which provides for an increase in the commitments under the existing revolving credit facility in an aggregate principal amount of $76.3 million. The Revolving Credit Facility Amendment also provides additional commitments for the issuance of letters of credit under the Revolving Credit Facility in an aggregate principal amount of $165.1 million. After giving effect to the Revolving Credit Facility Amendment, the aggregate amount of the revolving commitments under the Revolving Credit Facility is $423.8 million.

CONSOLIDATED RESULTS OF OPERATIONS

Three Months Ended September 30, 2023 as compared to Three Months Ended September 30, 2022

The following table sets forth the components of our results of operations for the three months ended September 30, 2023 and 2022.

(thousands of U.S. dollars)	2023	2022	$ Change	% Change
Total net revenues	**$ 263,177**	$ 248,704	$ 14,473	5.8 %
Total cost of revenues	**117,193**	112,691	4,502	4.0 %
Total operating expenses	**69,886**	72,818	(2,932)	(4.0)%
Operating income	**76,098**	63,195	12,903	20.4 %
Net income (loss)	**(13,660)**	25,090	(38,750)	(154.4)%
Adjusted Net Income[(a)]	**58,640**	64,508	(5,868)	(9.1)%
Adjusted EBITDA[(a)]	**134,328**	125,152	9,176	7.3 %

(a) Adjusted Net Income and Adjusted EBITDA are non-GAAP financial measures. For more information regarding our calculation of Adjusted Net Income and Adjusted EBITDA, including information about their limitations as tools for analysis and a reconciliation of net income (loss), the most directly comparable financial measure calculated and presented in accordance with GAAP, to Adjusted Net Income and Adjusted EBITDA, please see the reconciliation included below in "Non-GAAP Financial Measures".

Total Net Revenues

The following table compares our revenues by type for the three months ended September 30, 2023 to the three months ended September 30, 2022.

(thousands of U.S. dollars)

Net revenues for the three months ended September 30,	2023	2022	$ Change	% Change
Service	**$ 227,120**	$ 216,704	$ 10,416	4.8 %
Product	**36,057**	32,000	4,057	12.7 %
Total net revenues	**$ 263,177**	$ 248,704	$ 14,473	5.8 %

Net revenues were $263.2 million in the three months ended September 30, 2023, an increase of $14.5 million, or 5.8%, as compared with the three months ended September 30, 2022. Excluding the impact of foreign currency exchange rates, net revenues in the three months ended September 30, 2023 increased approximately 4.3% compared with the three months ended September 30, 2022.

Service revenues

Service revenues increased $10.4 million, or 4.8%, to $227.1 million in the three months ended September 30, 2023 as compared to $216.7 million in the three months ended September 30, 2022. The increase in net service revenue was driven by favorable pricing of $9.9 million and $2.3 million in the Sterigenics and Nelson Labs segments, respectively, coupled with a $4.4 million favorable impact from changes in foreign currency exchange rates across all segments. These growth factors were partially offset by unfavorable service revenue volume and mix of $6.3 million primarily in the Nelson Labs and Sterigenics segments.

Product revenues

Product revenues increased $4.1 million, or 12.7%, to $36.1 million in the three months ended September 30, 2023 as compared to $32.0 million in the three months ended September 30, 2022. The increase in product revenues was attributable to favorable pricing of $3.2 million and volume and mix of $1.5 million, partially offset by a $0.6 million unfavorable impact from changes in foreign currency exchange rates.

Total Cost of Revenues

The following table compares our cost of revenues by type for the three months ended September 30, 2023 to the three months ended September 30, 2022.

(thousands of U.S. dollars)

Cost of revenues for the three months ended September 30,	2023	2022	$ Change	% Change
Service	**$ 103,580**	$ 99,772	$ 3,808	3.8 %
Product	**13,613**	12,919	694	5.4 %
Total cost of revenues	**$ 117,193**	$ 112,691	$ 4,502	4.0 %

Total cost of revenues accounted for approximately 44.5% and 45.3% of our consolidated net revenues for the three months ended September 30, 2023 and 2022, respectively.

Cost of service revenues

Cost of service revenues increased $3.8 million, or 3.8%, for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022. The key drivers of the increase in cost of service revenues were $2.2 million of higher employee compensation costs and $1.8 million of incremental depreciation related to capital assets recently placed in service, coupled with a $2.0 million unfavorable impact from changes in foreign currency exchange rates. Partially offsetting these factors was a $2.4 million decline in plant closure costs associated with the closure of the Willowbrook, Illinois facility.

Cost of product revenues

Cost of product revenues increased $0.7 million, or 5.4%, for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022. The increase principally reflects higher Co-60 direct material costs compared to the same period in the prior year consistent with the increase in sales volume, partially offset by favorable impacts from changes in foreign currency exchange rates.

Operating Expenses

The following table compares our operating expenses for the three months ended September 30, 2023 to the three months ended September 30, 2022:

(thousands of U.S. dollars)

Operating expenses for the three months ended September 30,	2023	2022	$ Change	% Change
Selling, general and administrative expenses	**$ 54,112**	$ 57,091	$ (2,979)	(5.2)%
Amortization of intangible assets	**15,774**	15,727	47	0.3 %
Total operating expenses	**$ 69,886**	$ 72,818	$ (2,932)	(4.0)%

Operating expenses accounted for approximately 26.6% and 29.3% of our consolidated net revenues for the three months ended September 30, 2023 and 2022, respectively.

Selling, general and administrative expenses (“SG&A”)

SG&A decreased $3.0 million, or 5.2%, for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022. The decrease was driven primarily by a $6.1 million decline in litigation and other professional services expense associated with our EO sterilization facilities and $0.5 million decrease in professional services and fees incurred in connection with various business enhancement and compliance efforts. Partially offsetting this decrease was a $3.8 million increase in share-based compensation expense attributable to awards granted under the 2020 Omnibus Incentive Plan.

Amortization of intangible assets

Amortization of intangible assets increased $0.1 million or 0.3% to $15.8 million for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022 due mainly to changes in foreign currency exchange rates.

Interest Expense, Net

Interest expense, net increased $17.2 million, or 73.4%, for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022. The increase was driven by a higher variable interest rate on borrowings previously outstanding in the same period of the prior year, resulting in $14.9 million of incremental interest expense coupled with interest expense of $11.3 million on incremental borrowings. In addition, amortization of debt issuance costs and debt discounts increased by $1.0 million. Partially offsetting the increase was a $3.4 million reduction to interest expense for interest capitalized on fixed assets, a $1.4 million increase in interest income on cash and cash equivalents on deposit at financial institutions and a $5.2 million net favorable change from interest rate derivative activity. The weighted average interest rate on our outstanding debt was 8.38% and 5.87% at September 30, 2023 and 2022, respectively.

Georgia EO Litigation Settlement

On October 16, 2023, the Company reached an agreement to resolve 79 EO claims against the Settling Defendants in the State of Georgia. Under the terms of the agreement, the Company will pay $35.0 million and the settling plaintiffs' claims will be dismissed with prejudice. The settlement is subject to all of the plaintiffs consenting to their respective settlement payment allocations and to a stay of the trial that was scheduled to begin on October 23, 2023.

Foreign Exchange Gain

Foreign exchange gain was $0.4 million for the three months ended September 30, 2023 as compared to a gain of $0.5 million in the three months ended September 30, 2022. The change in foreign exchange (gain) loss in our Consolidated Statements of Operations and Comprehensive Income (Loss) mainly relates to short-term gains and losses on transactions denominated in currencies other than the functional currency of our operating entities. As described in Note 16, "Financial Instruments and Financial Risk", we enter into monthly U.S. dollar-denominated foreign currency forward contracts to manage foreign currency exchange rate risk related to our international subsidiaries.

Other Expense (Income), Net

Other expense, net was $0.4 million for the three months ended September 30, 2023 compared to other income, net of $1.7 million for the three months ended September 30, 2022. The fluctuation was mainly driven by changes in the fair value of the embedded derivatives in Nordion's contracts, resulting in a $1.5 million increase in other expense. In addition, pension income related to Nordion's defined benefit pension plans decreased $0.6 million for the three months ended September 30, 2023 as compared to the three months ended September 30, 2022.

Provision for Income Taxes

Provision for income tax decreased $2.8 million to a net provision of $14.1 million for the three months ended September 30, 2023 as compared to $16.9 million in the three months ended September 30, 2022. The change was partially attributable to lower pre-tax income in the three months ended September 30, 2023 compared to the three months ended September 30, 2022 (driven mainly by the $35.0 million Georgia EO litigation settlement accrual), partially offset by an increase in the valuation allowance, which was a direct result of the $35.0 million Georgia EO litigation settlement, as described in Note 15, "Commitments and Contingencies". This expense will eliminate a current deduction of 2023 U.S. interest and increase the valuation allowance against our excess interest expense carryforward balance.

Provision for income taxes for the three months ended September 30, 2023 differed from the statutory rate primarily due to an increase in the valuation allowance attributable to the limitation on the deductibility of interest expense, and global intangible low-tax income ("GILTI"). Provision for income taxes for the three months ended September 30, 2022 differed from the statutory rate primarily due to an increase in the valuation allowance, the impact of the foreign rate differential, and GILTI.

Net Income (Loss), Adjusted Net Income and Adjusted EBITDA

Net loss for the three months ended September 30, 2023 was $13.7 million, as compared to net income of $25.1 million for the three months ended September 30, 2022 due to the factors described above. Adjusted Net Income was $58.6 million for the three months ended September 30, 2023, as compared to $64.5 million for the three months ended September 30, 2022. Adjusted EBITDA was $134.3 million for the three months ended September 30, 2023, as compared to $125.2 million for the three months ended September 30, 2022. Please see "Non-GAAP Financial Measures" below for a reconciliation of Adjusted Net Income and Adjusted EBITDA to their most directly comparable financial measure calculated and presented in accordance with GAAP.

Nine Months Ended September 30, 2023 as compared to Nine Months Ended September 30, 2022

The following table sets forth the components of our results of operations for the nine months ended September 30, 2023 and 2022.

(thousands of U.S. dollars)	2023	2022	$ Change	% Change
Total net revenues	**$ 739,049**	$ 752,097	$ (13,048)	(1.7)%
Total cost of revenues	**341,974**	336,813	5,161	1.5 %
Total operating expenses	**224,407**	227,102	(2,695)	(1.2)%
Operating income	**172,668**	188,182	(15,514)	(8.2)%
Net income	**12,695**	86,149	(73,454)	(85.3)%
Adjusted Net Income[(a)]	**155,980**	200,587	(44,607)	(22.2)%
Adjusted EBITDA[(a)]	**361,281**	376,636	(15,355)	(4.1)%

(a) Adjusted Net Income and Adjusted EBITDA are non-GAAP financial measures. For more information regarding our calculation of Adjusted Net Income and Adjusted EBITDA, including information about their limitations as tools for analysis and a reconciliation of net income, the most directly comparable financial measure calculated and presented in accordance with GAAP, to Adjusted Net Income and Adjusted EBITDA, please see the reconciliation included below in "Non-GAAP Financial Measures".

Total Net Revenues

The following table compares our revenues by type for the nine months ended September 30, 2023 to the nine months ended September 30, 2022.

(thousands of U.S. dollars)

Net revenues for the nine months ended September 30,	2023	2022	$ Change	% Change
Service	**$ 667,680**	$ 644,451	$ 23,229	3.6 %
Product	**71,369**	107,646	(36,277)	(33.7)%
Total net revenues	**$ 739,049**	$ 752,097	$ (13,048)	(1.7)%

Net revenues were $739.0 million in the nine months ended September 30, 2023, a decrease of $13.0 million, or 1.7%, as compared with the nine months ended September 30, 2022. Changes in foreign currency exchange rates had no material impact on consolidated net revenues in the nine months ended September 30, 2023 compared with the nine months ended September 30, 2022, although there were impacts when viewed at the segment reporting level.

Service revenues

Service revenues increased $23.2 million, or 3.6%, to $667.7 million in the nine months ended September 30, 2023 as compared to $644.5 million in the nine months ended September 30, 2022. The growth in net service revenues was driven by favorable pricing of $29.7 million and $6.5 million in the Sterigenics and Nelson Labs segments, respectively, coupled with a $3.2 million favorable impact from changes in foreign currency exchange rates. The increase in service revenue was partially offset by unfavorable volume and mix of $16.2 million across all segments.

Product revenues

Product revenues decreased $36.3 million, or 33.7%, to $71.4 million in the nine months ended September 30, 2023 as compared to $107.6 million in the nine months ended September 30, 2022. The decrease in product revenues was mainly driven by lower volumes of $38.9 million in the Nordion segment and unfavorable changes in foreign currency exchange rates of $3.4 million. Partially offsetting this decline was a favorable pricing impact of $6.0 million.

Total Cost of Revenues

The following table compares our cost of revenues by type for the nine months ended September 30, 2023 to the nine months ended September 30, 2022.

(thousands of U.S. dollars)

Cost of revenues for the nine months ended September 30,	2023	2022	$ Change	% Change
Service	**$ 311,690**	$ 292,755	$ 18,935	6.5 %
Product	**30,284**	44,058	(13,774)	(31.3)%
Total cost of revenues	**$ 341,974**	$ 336,813	$ 5,161	1.5 %

Total cost of revenues accounted for approximately 46.3% and 44.8% of our consolidated net revenues for the nine months ended September 30, 2023 and 2022, respectively.

Cost of service revenues

Cost of service revenues increased $18.9 million, or 6.5%, for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022. The key drivers of the increase in cost of service revenues were $8.4 million of higher employee compensation costs, $8.2 million of incremental depreciation related to capital assets recently placed in service, and $2.5 million of higher energy costs.

Cost of product revenues

Cost of product revenues decreased $13.8 million, or 31.3%, for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022. The decrease principally reflects lower shipment volumes compared to the same period in the prior year coupled with a $1.9 million unfavorable impact from changes in foreign currency exchange rates.

Operating Expenses

The following table compares our operating expenses for the nine months ended September 30, 2023 to the nine months ended September 30, 2022:

(thousands of U.S. dollars)

Operating expenses for the nine months ended September 30,	2023	2022	$ Change	% Change
Selling, general and administrative expenses	**$ 176,309**	$ 179,765	$ (3,456)	(1.9)%
Amortization of intangible assets	**48,098**	47,337	761	1.6 %
Total operating expenses	**$ 224,407**	$ 227,102	$ (2,695)	(1.2)%

Operating expenses accounted for approximately 30.4% and 30.2% of our consolidated net revenues for the nine months ended September 30, 2023 and 2022, respectively.

SG&A

SG&A decreased $3.5 million, or 1.9%, for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022. The decrease was driven primarily by a $16.1 million decrease in litigation and other professional services expense associated with EO sterilization facilities. This decrease was partially offset by a $9.2 million increase in share-based compensation expense attributable to awards granted under the 2020 Omnibus Incentive Plan and a $2.0 million increase in selling and administrative personnel costs in support of various business enhancement and compliance efforts.

Amortization of intangible assets

Amortization of intangible assets increased $0.8 million or 1.6% to $48.1 million for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022 due mainly to changes in foreign currency exchange rates.

Interest Expense, Net

Interest expense, net increased $52.4 million, or 109.3%, for the nine months ended September 30, 2023 as compared to the nine months ended September 30, 2022. The increase was driven by a higher variable interest rate on borrowings previously outstanding in the same period of the prior year, resulting in $54.0 million of incremental interest expense coupled with interest expense of $28.9 million on incremental borrowings. In addition, amortization of debt issuance costs and debt discounts increased by $2.3 million. Partially offsetting the increase was a $13.0 million net favorable change from interest rate derivative activity, a $10.8 million increase in interest income on cash and cash equivalents on deposits at financial institutions and a $9.0 million reduction to interest expense for interest capitalized on fixed assets. The weighted average interest rate on our outstanding debt was 8.38% and 5.87% at September 30, 2023 and 2022, respectively.

Georgia EO Litigation Settlement

On October 16, 2023, the Company reached an agreement to resolve 79 EO claims against the Settling Defendants in the State of Georgia. Under the terms of the agreement, the Company will pay $35.0 million and the settling plaintiff's claims will be dismissed with prejudice. The settlement is subject to all of the plaintiffs consenting to their respective settlement payment allocations and to a stay of the trial that was scheduled to begin on October 23, 2023.

Foreign Exchange (Gain) Loss

Foreign exchange loss was $0.4 million for the nine months ended September 30, 2023 as compared to a gain of $0.5 million in the nine months ended September 30, 2022. The change in foreign exchange (gain) loss in our Consolidated Statements of Operations and Comprehensive Income (Loss) mainly relates to short-term losses and gains on transactions denominated in currencies other than the functional currency of our operating entities. As described in Note 16, "Financial Instruments and Financial Risk", we enter into monthly U.S. dollar-denominated foreign currency forward contracts to manage foreign currency exchange rate risk of our intercompany loans in certain of our international subsidiaries.

Other Income, Net

Other income, net decreased $0.9 million, or 21.3%, for the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022. The fluctuation was mainly driven by a decrease in defined benefit pension income at Nordion of $1.5 million, partially offset by a $0.7 million decrease in the unrealized loss on embedded derivatives at Nordion.

Provision for Income Taxes

Provision for income tax decreased $21.6 million to a net provision of $27.7 million for the nine months ended September 30, 2023 as compared to $49.2 million for the nine months ended September 30, 2022. The change was attributable to lower pre-tax income for the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022 (driven mainly by the $35.0 million Georgia EO litigation settlement accrual), partially offset by an increase in the valuation allowance against our excess interest expense carryforward balance and the foreign rate differential. The increase in the valuation allowance was a direct result of the $35.0 million Georgia EO litigation settlement, as described in Note 15, "Commitments and Contingencies". These expenses will eliminate a current deduction of 2023 U.S. interest and increases the valuation allowance against our excess interest expense carryforward balance.

Provision for income taxes for the nine months ended September 30, 2023 differed from the statutory rate primarily due to a net increase in the valuation allowance attributable to the limitation on the deductibility of interest expense and the foreign rate differential, partially offset by a benefit for state income taxes. Provision for income taxes for the nine months ended September 30, 2022 differed from the statutory rate primarily due to a net increase in the valuation allowance, the impact of the foreign rate differential, and GILTI.

Net Income, Adjusted Net Income and Adjusted EBITDA

Net income for the nine months ended September 30, 2023 was $12.7 million, as compared to net income of $86.1 million for the nine months ended September 30, 2022 due to the factors described above. Adjusted Net Income was $156.0 million for the nine months ended September 30, 2023, as compared to $200.6 million for the nine months ended September 30, 2022. Adjusted EBITDA was $361.3 million for the nine months ended September 30, 2023, as compared to $376.6 million for the nine months ended September 30, 2022. Please see "Non-GAAP Financial Measures" below for a reconciliation of Adjusted Net Income and Adjusted EBITDA to their most directly comparable financial measure calculated and presented in accordance with GAAP.

SEGMENT RESULTS OF OPERATIONS

We have three reportable segments: Sterigenics, Nordion and Nelson Labs. Our chief operating decision maker evaluates performance and allocates resources within our business based on Segment Income, which excludes certain items which are included in income before tax as determined in our Consolidated Statements of Operations and Comprehensive Income (Loss). The accounting policies for our reportable segments are the same as those for the consolidated Company.

Our Segments

Sterigenics

Our Sterigenics business provides outsourced terminal sterilization and irradiation services for the medical device, pharmaceutical, food safety and advanced applications markets using three major technologies: gamma irradiation, EO processing and E-beam irradiation.

Nordion

Nordion is a leading global provider of Co-60 used in the sterilization and irradiation processes for the medical device, pharmaceutical, food safety, and high-performance materials industries, as well as in the treatment of cancer. In addition, Nordion is a leading global provider of gamma irradiation systems.

As a result of the time required to meet regulatory and logistics requirements for delivery of radioactive products, combined with accommodations made to our customers to minimize disruptions to their operations during the installation of Co-60, Nordion sales patterns can often vary significantly from one quarter to the next. However, timing-related impacts on our sales performance tend to be resolved within several quarters, resulting in more consistent performance over longer periods of time. In addition, sales of gamma irradiation systems occur infrequently and tend to be for larger amounts.

Results for our Nordion segment are also impacted by Co-60 mix, harvest schedules, as well as customer, product and service mix.

Nelson Labs

Our Nelson Labs business provides outsourced microbiological and analytical chemistry testing and advisory services for the medical device and pharmaceutical industries.

For more information regarding our reportable segments please refer to Note 17, “Segment Information” to our consolidated financial statements.

Segment Results for the Three Months Ended September 30, 2023 and 2022

The following tables compare segment net revenue and segment income for the three months ended September 30, 2023 to the three months ended September 30, 2022:

	Three Months Ended September 30,			
(thousands of U.S. dollars)	**2023**	**2022**	**$ Change**	**% Change**
Net Revenues				
Sterigenics	**$ 168,347**	$ 157,723	$ 10,624	6.7 %
Nordion	**40,098**	35,071	5,027	14.3 %
Nelson Labs	**54,732**	55,910	(1,178)	(2.1)%
Segment Income				
Sterigenics	**$ 93,169**	$ 85,587	$ 7,582	8.9 %
Nordion	**24,052**	20,294	3,758	18.5 %
Nelson Labs	**17,107**	19,271	(2,164)	(11.2)%
Segment Income margin				
Sterigenics	**55.3 %**	54.3 %		
Nordion	**60.0 %**	57.9 %		
Nelson Labs	**31.3 %**	34.5 %		

Net Revenues by Segment

Sterigenics net revenues were $168.3 million for the three months ended September 30, 2023, an increase of $10.6 million, or 6.7%, as compared to the three months ended September 30, 2022. The increase was attributable to a 6.3% favorable impact from pricing as well as a 2.2% favorable impact from changes in foreign currency exchange rates. The increase in segment revenue was partially offset by an unfavorable impact from volume and mix of 1.8% compared to the same period in the prior year.

Nordion net revenues were $40.1 million for the three months ended September 30, 2023, an increase of $5.0 million, or 14.3%, as compared to the three months ended September 30, 2022. The increase was primarily attributable to favorable pricing of 9.4% and volume and mix of 6.9%, partially offset by a 2.0% unfavorable impact from changes in foreign currency exchange rates.

Nelson Labs net revenues were $54.7 million for the three months ended September 30, 2023, a decrease of $1.2 million, or 2.1%, as compared to the three months ended September 30, 2022. The decrease was attributable to unfavorable volume and mix of 8.0%. Partially offsetting this decline was a favorable impact from pricing and foreign currency exchange rates of 4.1% and 1.8%, respectively.

Segment Income

Sterigenics segment income was $93.2 million for the three months ended September 30, 2023, an increase of $7.6 million, or 8.9%, as compared to the three months ended September 30, 2022. The increase in segment income and segment income margin was primarily a result of favorable pricing, partially offset by unfavorable volume and mix, as well as inflation.

Nordion segment income was $24.1 million for the three months ended September 30, 2023, an increase of $3.8 million, or 18.5%, as compared to the three months ended September 30, 2022. The increase in segment income and segment income margin was mainly driven by pricing and favorable volume and mix, partially offset by inflation.

Nelson Labs segment income was $17.1 million for the three months ended September 30, 2023, a decrease of $2.2 million, or 11.2%, as compared to the three months ended September 30, 2022. The decrease in segment income and segment income margin was primarily a result of unfavorable volume and mix as well as inflation, partially offset by favorable pricing.

Segment Results for the Nine Months Ended September 30, 2023 and 2022

The following tables compare segment net revenue and segment income for the nine months ended September 30, 2023 to the nine months ended September 30, 2022:

(thousands of U.S. dollars)	Nine Months Ended September 30, 2023	2022	$ Change	% Change
Net Revenues				
Sterigenics	**$ 494,934**	$ 464,977	$ 29,957	6.4 %
Nordion	**80,624**	119,551	(38,927)	(32.6 %)
Nelson Labs	**163,491**	167,569	(4,078)	(2.4) %
Segment Income				
Sterigenics	**$ 267,459**	$ 250,088	$ 17,371	6.9 %
Nordion	**43,362**	69,179	(25,817)	(37.3) %
Nelson Labs	**50,460**	57,369	(6,909)	(12.0) %
Segment Income margin				
Sterigenics	**54.0 %**	53.8 %		
Nordion	**53.8 %**	57.9 %		
Nelson Labs	**30.9 %**	34.2 %		

Net Revenues by Segment

Sterigenics net revenues were $494.9 million for the nine months ended September 30, 2023, an increase of $30.0 million, or 6.4%, as compared to the nine months ended September 30, 2022. The increase was attributable to pricing of 6.4%. Partially offsetting this factor was unfavorable volume and mix, which was equally offset by favorable changes in foreign currency exchange rates.

Nordion net revenues were $80.6 million for the nine months ended September 30, 2023, a decrease of $38.9 million, or 32.6%, as compared to the nine months ended September 30, 2022. The decrease was driven by unfavorable volume and mix of 34.4% and an impact of 3.3% from changes in foreign exchange rates. Partially offsetting this decrease was a favorable impact from pricing of 5.1%.

Nelson Labs net revenues were $163.5 million for the nine months ended September 30, 2023, a decrease of $4.1 million, or 2.4%, as compared to the nine months ended September 30, 2022. The decrease was attributable to unfavorable volume and mix of 6.8%, partially offset by favorable impact from pricing and changes in foreign currency exchange rates of 3.9% and 0.5%, respectively.

Segment Income

Sterigenics segment income was $267.5 million for the nine months ended September 30, 2023, an increase of $17.4 million, or 6.9%, as compared to the nine months ended September 30, 2022. The increase in segment income was fueled mainly by favorable pricing, as referenced above, partially offset by unfavorable volume and mix as well as ongoing pressure from inflation.

Nordion segment income was $43.4 million for the nine months ended September 30, 2023, a decrease of $25.8 million, or 37.3%, as compared to the nine months ended September 30, 2022. The decrease in segment income and segment income margin was driven mainly by an expected unfavorable volume and mix compared to the same period of the prior year.

Nelson Labs segment income was $50.5 million for the nine months ended September 30, 2023, a decrease of $6.9 million, or 12.0%, as compared to the nine months ended September 30, 2022. The decrease in segment income and segment income margin was primarily a result of unfavorable volume and mix coupled with the ongoing impact of inflation, partially offset by favorable pricing.

NON-GAAP FINANCIAL MEASURES

To supplement our consolidated financial statements presented in accordance with GAAP, we consider Adjusted Net Income and Adjusted EBITDA, financial measures that are not based on any standardized methodology prescribed by GAAP.

We define Adjusted Net Income as net income before amortization and certain other adjustments that we do not consider in our evaluation of our ongoing operating performance from period to period as discussed further below. We define Adjusted EBITDA as Adjusted Net Income before interest expense, depreciation (including depreciation of Co-60 used in our operations) and income tax provision applicable to Adjusted Net Income.

We use Adjusted Net Income and Adjusted EBITDA, non-GAAP financial measures, as the principal measures of our operating performance. Management believes Adjusted Net Income and Adjusted EBITDA are useful because they allow management to more effectively evaluate our operating performance and compare the results of our operations from period to period without the impact of certain non-cash items and non-routine items that we do not expect to continue at the same level in the future and other items that are not core to our operations. We believe that these measures are useful to our investors because they provide a more complete understanding of the factors and trends affecting our business than could be obtained absent this disclosure. In addition, we believe Adjusted Net Income and Adjusted EBITDA will assist investors in making comparisons to our historical operating results and analyzing the underlying performance of our operations for the periods presented. Our management also uses Adjusted Net Income and Adjusted EBITDA in their financial analysis and operational decision-making, and Adjusted EBITDA serves as the basis for the metric we utilize to determine attainment of our primary annual incentive program. Adjusted Net Income and Adjusted EBITDA may be calculated differently from, and therefore may not be comparable to, a similarly titled measure used by other companies.

Adjusted Net Income and Adjusted EBITDA should not be considered in isolation from, or as a substitute for, financial information prepared in accordance with GAAP. There are a number of limitations related to the use of Adjusted Net Income and Adjusted EBITDA rather than net income (loss), the nearest GAAP equivalent. For example, Adjusted Net Income and Adjusted EBITDA primarily exclude:

- certain recurring non-cash charges such as depreciation of fixed assets, although these assets may have to be replaced in the future, as well as amortization of acquired intangible assets and asset retirement obligations;

- costs of acquiring and integrating businesses, which will continue to be a part of our growth strategy;
- non-cash gains or losses from fluctuations in foreign currency exchange rates, and the mark-to-fair value of derivatives not designated as hedging instruments, which includes the embedded derivatives relating to certain customer and supply contracts at Nordion;
- impairment charges on long-lived assets, intangible assets and investments accounted for under the equity method;
- loss on extinguishment of debt incurred in connection with refinancing or early extinguishment of long-term debt;
- expenses and charges related to the litigation, settlement agreements, and other activities associated with our EO sterilization facilities, including those related to Willowbrook, Illinois, Atlanta, Georgia and Santa Teresa, New Mexico, even though that litigation remains ongoing;
- in the case of Adjusted EBITDA, interest expense or the cash requirements necessary to service interest or principal payments on our indebtedness; and
- share-based compensation expense, which has been, and will continue to be for the foreseeable future, a significant recurring expense and an important part of our compensation strategy.

In evaluating Adjusted Net Income and Adjusted EBITDA, you should be aware that in the future, we will incur expenses similar to the adjustments in the table below. Our presentations of Adjusted Net Income and Adjusted EBITDA should not be construed as suggesting that our future results will be unaffected by these expenses or any unusual or non-recurring items. When evaluating our performance, you should consider Adjusted Net Income and Adjusted EBITDA alongside other financial performance measures, including our net income (loss) and other GAAP measures.

The following table presents a reconciliation of net income (loss), the most directly comparable financial measure calculated and presented in accordance with GAAP to Adjusted Net Income and Adjusted EBITDA, for each of the periods indicated:

	Three Months Ended September 30,		Nine Months Ended September 30,	
(thousands of U.S. dollars)	**2023**	**2022**	**2023**	**2022**
Net income (loss)	**$ (13,660)**	$ 25,090	**$ 12,695**	$ 86,149
Amortization of intangibles	**20,181**	20,219	**61,290**	61,596
Share-based compensation[(a)]	**8,378**	4,616	**24,135**	14,955
Loss (gain) on foreign currency and derivatives not designated as hedging instruments, net[(b)]	**1,333**	3,194	**1,459**	(4,788)
Acquisition and divestiture related charges, net[(c)]	**72**	447	**817**	978
Business optimization project expenses[(d)]	**1,237**	1,035	**7,093**	1,609
Plant closure expenses[(e)]	**126**	2,627	**(640)**	3,776
Impairment of investment in unconsolidated affiliate[(f)]	**—**	—	**—**	9,613
Professional services and other expenses relating to EO sterilization facilities[(g)]	**18,518**	14,501	**51,900**	50,238
Georgia EO litigation settlement[(h)]	**35,000**	—	**35,000**	—
Accretion of asset retirement obligations[(i)]	**555**	526	**1,682**	1,644
COVID-19 expenses[(j)]	**—**	6	**—**	154
Income tax benefit associated with pre-tax adjustments[(k)]	**(13,100)**	(7,753)	**(39,451)**	(25,337)
Adjusted Net Income	**58,640**	64,508	**155,980**	200,587
Interest expense, net[(l)]	**30,464**	20,080	**82,275**	53,974
Depreciation[(m)]	**17,994**	15,885	**55,913**	47,496
Income tax provision applicable to Adjusted Net Income[(n)]	**27,230**	24,679	**67,113**	74,579
Adjusted EBITDA[(o)]	**$ 134,328**	$ 125,152	**$ 361,281**	$ 376,636

(a) Represents share-based compensation expense to employees and non-employee directors.

(b) Represents the effects of (i) fluctuations in foreign currency exchange rates, (ii) non-cash mark-to-fair value of embedded derivatives relating to certain customer and supply contracts at Nordion, and (iii) unrealized gains and losses on interest rate caps not designated as hedging instruments.

(c) Represents (i) certain direct and incremental costs related to the acquisitions of RCA and BioScience Labs and certain related integration efforts as a result of those acquisitions, (ii) the earnings impact of fair value adjustments (excluding those recognized within amortization expense) resulting from the businesses acquired, and (iii) transition services income and non-cash deferred lease income associated with the terms of the divestiture of the Medical Isotopes business in 2018.

(d) Represents professional fees, exit costs, severance and other payroll costs, and other costs associated with business optimization and cost savings projects relating to the integration of acquisitions, operating structure realignment and other process enhancement projects.

(e) Represents professional fees, severance and other payroll costs, and other costs including ongoing lease and utility expenses associated with the closure of the Willowbrook, Illinois facility. The nine months ended September 30, 2023 also includes a $1.0 million cancellation fee received from a tenant in connection with the termination of an office space lease at the Nordion facility.

(f) Represents an impairment charge on our equity method investment in a joint venture. Refer to Note 1, “Basis of Presentation”.

(g) Represents litigation and other professional fees associated with our EO sterilization facilities. This includes $10.2 million and $18.0 million of interest expense, net for the three and nine months ended September 30, 2023, respectively, associated with Term Loan B that was issued to finance the $408.0 million cost of the Willowbrook Settlement under the Willowbrook Settlement Agreements. See Note 15, “Commitments and Contingencies”.

(h) Represents the cost of the Gwinnett and Cobb Counties Settlement as outlined in the October 2023 Term Sheet, subject to all of the plaintiffs consenting to their respective settlement payment allocations. See Note 15, “Commitments and Contingencies”.

(i) Represents non-cash accretion of asset retirement obligations related to Co-60 and gamma processing facilities, which are based on estimated site remediation costs for any future decommissioning of these facilities (without regard for whether the decommissioning services would be performed by employees of Nordion, instead of by a third party) and are accreted over the life of the asset.

(j) Represents non-recurring costs associated with the COVID-19 pandemic, including incremental costs to implement workplace health and safety measures.

(k) Represents the income tax impact of adjustments calculated based on the tax rate applicable to each item. We eliminate the effect of tax rate changes as applied to tax assets and liabilities and unusual items from our presentation of adjusted net income.

(l) The three and nine months ended September 30, 2023 exclude $10.2 million and $18.0 million, respectively, of interest expense, net, on Term Loan B attributable to the loan proceeds that were used to fund the $408.0 million cost of the Willowbrook Settlement. The three and nine months ended September 30, 2022 exclude $3.3 million of unrealized loss and $6.1 million of unrealized gain, respectively, on interest rate derivatives not designated as hedging instruments.

(m) Includes depreciation of Co-60 held at gamma irradiation sites.

(n) Represents the difference between the income tax provision as determined under U.S. GAAP and the income tax benefit associated with pre-tax adjustments described in footnote (k).

(o) $22.4 million and $22.1 million of the adjustments for the three months ended September 30, 2023 and 2022, respectively, and $69.7 million and $62.8 million of the adjustments for the nine months ended September 30, 2023 and 2022, respectively, are included in cost of revenues, primarily consisting of amortization of intangible assets, depreciation, and accretion of asset retirement obligations.

LIQUIDITY AND CAPITAL RESOURCES

Sources of Cash

The primary sources of liquidity for our business are cash flows from operations and borrowings under our credit facilities. As of September 30, 2023, we had $252.5 million of cash and cash equivalents. This is a decrease of $143.8 million from the balance at December 31, 2022. The decrease in cash and cash equivalents was mainly attributable to the release of approximately $408.0 million to settle the EO claims against the Settling Defendants in Cook County, Illinois and a $200.0 million paydown of the outstanding balance on the Revolving Credit Facility. Partially offsetting this decrease was $500.0 million in proceeds from the issuance of Term Loan B on February 23, 2023. Our foreign subsidiaries held cash of approximately $167.5 million at September 30, 2023 and $158.3 million at December 31, 2022, to meet their liquidity needs. No material restrictions exist to accessing cash held by our foreign subsidiaries notwithstanding any potential tax consequences.

On February 23, 2023, we entered into the First Lien Credit Agreement (the "2023 Credit Agreement"), which provides for, among other things, a new Term Loan B facility (the "2023 Term Loan") in an aggregate principal amount of $500.0 million and bears interest, at the Company's option, at a variable rate per annum equal to either (x) the Term SOFR Rate (as defined in the 2023 Credit Agreement) plus an applicable margin of 3.75% or (y) an alternative base rate ("ABR") plus an applicable margin of 2.75%. The 2023 Credit Agreement is secured on a first priority basis on substantially all of our assets and is guaranteed by certain of our subsidiaries. It is prepayable without premium or penalty at any time six months after the closing date. The principal balance shall be paid at 1% of the aggregate principal amount ($5.0 million) per year, with the balance due at the end of 2026. The Company used the proceeds of this debt to fund a previously announced $408.0 million EO litigation settlement in Cook County, Illinois on May 1, 2023 and pay down existing borrowings under the Company's revolving credit facility. In addition, the Company plans to use the remaining proceeds to further enhance liquidity and for general corporate purposes.

Uses of Cash

We expect that cash on hand, operating cash flows and amounts available under our credit facilities will provide sufficient working capital to operate our business, meet foreseeable liquidity requirements, including debt service on our long-term debt, make expected capital expenditures including investments in fixed assets to build and/or expand existing facilities, and meet litigation costs that we expect to continue to incur for at least the next twelve months. Our primary long-term liquidity requirements beyond the next 12 months will be to service our debt, make capital expenditures, and fund suitable business acquisitions. As of September 30, 2023, there were no outstanding borrowings on the Revolving Credit Facility. We expect any excess cash provided by operations will be allocated to fund capital expenditures, potential acquisitions, or for other general corporate purposes. Our ability to meet future working capital, capital expenditure and debt service requirements will depend on our future financial performance, which will be affected by a range of macroeconomic, competitive and business factors, including interest rate changes and changes in our industry, many of which are outside of our control. As of September 30, 2023, our interest rate caps and swap limit our cash flow exposure of our variable rate borrowings under the Term Loans. Refer to Note 16, "Financial Instruments and Financial Risk", "*Derivative Instruments*" for additional information regarding the interest rate caps used to manage economic risks associated with our variable rate borrowings.

Capital Expenditures

Our capital expenditure program is a component of our long-term strategy. This program includes, among other things, investments in new and existing facilities, business expansion projects, Co-60 used by Sterigenics at its gamma irradiation facilities, cobalt development projects and information technology enhancements. During the nine months ended September 30, 2023, our capital expenditures amounted to $150.1 million, compared to $110.6 million for the nine months ended September 30, 2022.

Cash Flow Information

(thousands of U.S. dollars)	Nine Months Ended September 30, 2023	Nine Months Ended September 30, 2022
Net Cash Provided by (Used in):		
Operating activities	**$ (260,855)**	$ 176,035
Investing activities	**(150,080)**	(110,158)
Financing activities	**269,752**	(1,483)
Effect of foreign currency exchange rate changes on cash and cash equivalents	**(2,577)**	(6,357)
Net increase (decrease) in cash and cash equivalents, including restricted cash	**$ (143,760)**	$ 58,037

Operating activities

Cash flows from operating activities decreased $436.9 million to net cash used of $260.9 million in the nine months ended September 30, 2023 compared to net cash provided of $176.0 million for the nine months ended September 30, 2022. The decrease in cash flows from operating activities in the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022 was primarily due to the release of the settlement funds of approximately $408.0 million on June 30, 2023 in connection with the settlements of the EO claims in Cook County, Illinois.

Investing activities

Cash used by investing activities increased $39.9 million to net cash used of $150.1 million in the nine months ended September 30, 2023 compared to $110.2 million for the nine months ended September 30, 2022. The variance was primarily driven by an increase in capital expenditures of $39.5 million in the nine months ended September 30, 2023 compared to the nine months ended September 30, 2022.

Financing activities

Cash provided by financing activities increased $271.2 million to net cash provided of $269.8 million for the nine months ended September 30, 2023 compared to $1.5 million of cash used for financing activities for the nine months ended September 30, 2022. The difference was mainly attributable to $500.0 million in proceeds from the issuance of Term Loan B on February 23, 2023 partially offset by the $200.0 million paydown of the outstanding balance on the revolving credit facility and the payment of $25.6 million of debt issuance costs incurred in connection with the issuance of Term Loan B and the revolving credit facility amendment during the nine months ended September 30, 2023, as described in “Debt Facilities” below. Financing activities for the nine months ended September 30, 2023 were insignificant.

Debt Facilities

Senior Secured Credit Facilities

On December 13, 2019, Sotera Health Holdings, LLC (“SHH”), our wholly owned subsidiary, entered into senior secured first lien credit facilities (the “Senior Secured Credit Facilities”), consisting of both a prepayable senior secured first lien term loan (the “Term Loan”) and a senior secured first lien revolving credit facility (the “Revolving Credit Facility”) pursuant to a first lien credit agreement (the “Credit Agreement”). The Revolving Credit Facility and Term Loan mature on June 13, 2026 and December 13, 2026, respectively. After giving effect to the Revolving Credit Facility Amendment (defined below), the total borrowing capacity under the Revolving Credit Facility is $423.8 million. The Senior Secured Credit Facilities also provide SHH the right at any time and under certain conditions to request incremental term loans or incremental revolving credit commitments based on a formula defined in the Senior Secured Credit Facilities. As of September 30, 2023 and December 31, 2022, total borrowings under the Term Loan were $1,763.1 million. The weighted average interest rate on borrowings under the Term Loan for the three months ended September 30, 2023 and September 30, 2022 was 8.14% and 4.96%, respectively, and 7.82% and 3.92% for the nine months ended September 30, 2023 and September 30, 2022, respectively.

On February 23, 2023, we entered into the First Lien Credit Agreement (the “2023 Credit Agreement”), which provides for, among other things, a new Term Loan B facility in an aggregate principal amount of $500.0 million and bears interest, at the Company’s option, at a variable rate per annum equal to either (x) the Term Secured Overnight Financing Rate (“Term SOFR”) (as defined in the 2023 Credit Agreement) plus an applicable margin of 3.75% or (y) an alternative base rate (“ABR”) plus an applicable margin of 2.75%. The 2023 Credit Agreement is secured on a first priority basis on substantially all of our assets and is guaranteed by certain of our subsidiaries. It is prepayable without premium or penalty at any time six months after the closing date. The principal balance shall be paid at 1% of the aggregate principal amount ($5.0 million) per year, with the balance due at the end of 2026. The Company used the proceeds of the 2023 Term Loan to fund a previously announced $408.0 million EO litigation settlement in Cook County, Illinois and pay down the $200.0 million of existing borrowings under the Revolving Credit Facility concurrent with the funding of the 2023 Term Loan on February 23, 2023. In addition, the Company plans to use the remaining proceeds to further enhance liquidity and for general corporate purposes. The weighted average interest rate on borrowings under the 2023 Term Loan for the three and six months ended September 30, 2023 was 8.84%.

On March 21, 2023, the Company entered into an Incremental Facility Amendment to the Credit Agreement (“Revolving Credit Facility Amendment”), which provides for an increase in the commitments under the existing Revolving Credit Facility in an aggregate principal amount of $76.3 million. In addition, certain of the lenders providing revolving credit commitments provided additional commitments for the issuance of the letters of credit under the Revolving Credit Facility in an aggregate principal amount of $165.1 million. The Revolving Credit Facility Amendment also provides for the replacement of the reference interest rate option for Revolving Loans from London Interbank Offered Rate (“LIBOR”) to SOFR plus an applicable credit spread adjustment of 0.10% (subject to a minimum floor of 0.00%). After giving effect to the Revolving Credit Facility Amendment, the aggregate amount of the lenders’ revolving commitments is $423.8 million. The maturity date of the Revolving Credit Facility remains June 13, 2026. The Company borrowed $200.0 million under the Revolving Credit Facility during the fourth quarter of 2022, which was repaid in the first quarter of 2023, as noted above. As of September 30, 2023, there were no borrowings outstanding under the Revolving Credit Facility.

The Senior Secured Credit Facilities and 2023 Credit Agreement contain additional covenants that, among other things, restrict, subject to certain exceptions, our ability and the ability of our restricted subsidiaries to engage in certain activities, such as incur indebtedness or permit to exist any lien on any property or asset now owned or hereafter acquired, as specified in the Senior Secured Credit Facilities and 2023 Credit Agreement. The Senior Secured Credit Facilities and 2023 Credit Agreement also contain certain customary affirmative covenants and events of default, including upon a change of control. An event of default under the Senior Secured Credit Facilities and 2023 Credit Agreement would occur if the Company or certain of its subsidiaries received one or more enforceable judgments for payment in an aggregate amount in excess of $100.0 million, which judgment or judgments are not stayed or remain undischarged for a period of sixty consecutive days or if, in order to enforce such a judgment, a judgment creditor attached or levied upon assets that are material to the business and operations, taken as a whole, of the Company and certain of its subsidiaries. As of September 30, 2023, we were in compliance with all of the Senior Secured Credit Facilities and 2023 Credit Agreement covenants.

All of SHH’s obligations under the Senior Secured Credit Facilities and 2023 Credit Agreement are unconditionally guaranteed by the Company and each existing and subsequently acquired or organized direct or indirect wholly-owned domestic restricted subsidiary of the Company, with customary exceptions including, among other things, where providing such guarantees is not permitted by law, regulation or contract or would result in material adverse tax consequences. All obligations under the Senior Secured Credit Facilities and 2023 Credit Agreement, and the guarantees of such obligations, are secured by substantially all assets of the borrower and guarantors, subject to permitted liens and other exceptions and exclusions, as outlined in the Senior Secured Credit Facilities and 2023 Credit Agreement.

Outstanding letters of credit are collateralized by encumbrances against the Revolving Credit Facility and the collateral pledged thereunder, or by cash placed on deposit with the issuing bank. As of September 30, 2023, the Company had $24.0 million of letters of credit issued against the Revolving Credit Facility, resulting in total availability under the Revolving Credit Facility of $399.8 million.

Term Loan Interest Rate Risk Management

The Company utilizes interest rate derivatives to reduce the variability of cash flows in the interest payments associated with our variable rate debt due to changes in LIBOR (up to June 22, 2023) and Term SOFR. For additional information on the derivative instruments described above, refer to Note 16, “Financial Instruments and Financial Risk”, *“Derivative Instruments.”*

LIBOR Transition

Publication of all U.S. LIBOR tenors ceased after June 30, 2023. To align with the market phaseout of LIBOR, SHH entered into an amendment to the Senior Secured Credit Facilities to replace the LIBOR-based reference interest rate option under the Term Loan with a reference interest rate option based on Term SOFR plus an applicable credit spread adjustment of 0.11448% (for one-month interest periods), 0.26161% (for three-month interest periods) and 0.42826% (for six-month interest periods) (in all cases, subject to a minimum floor of 0.50%).

In accordance with ASC 848 *Reference Rate Reform*, we have elected to apply certain optional expedients for contract modifications and hedging relationships for derivative instruments impacted by the benchmark interest rate transition. The optional expedients remove the requirement to remeasure contract modifications or dedesignate hedging relationships impacted by reference rate reform.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of consolidated financial statements and related disclosures in conformity with GAAP requires management to make judgments, estimates and assumptions at a specific point in time and in certain circumstances that affect amounts reported in the accompanying consolidated financial statements. In preparing these consolidated financial statements, management has made its best estimates and judgments of certain amounts, giving due consideration to materiality. The application of accounting policies involves the exercise of judgment and use of assumptions as to future uncertainties and, as a result, actual results could differ from these estimates.

A comprehensive discussion of the Company’s critical accounting policies and management estimates made in connection with the preparation of the financial statements is included in Item 7 of 2022 10-K. There have been no significant changes in critical accounting policies, management estimates or accounting policies since the year ended December 31, 2022.

NEW ACCOUNTING PRONOUNCEMENTS

For a description of recent accounting pronouncements applicable to our business, see Note 2, "Recent Accounting Standards" to our consolidated financial statements.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risks are described within "Quantitative and Qualitative Disclosures About Market Risk" in Part II, Item 7A of our Form 10-K. These market risks have not materially changed for the three and nine months ended September 30, 2023.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), has evaluated the effectiveness of the Company's "disclosure controls and procedures," (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act")). Based upon their evaluation, the CEO and CFO concluded that, as of the end of the period covered by this Quarterly Report on Form 10-Q, our disclosure controls and procedures are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission ("SEC"), and that such information is accumulated and communicated to our management, including our CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control

During the three and nine months ended September 30, 2023, there were no changes in our internal control over financial reporting that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Part II—OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, we may be subject to various legal proceedings arising in the ordinary course of our business, including claims relating to personal injury, property damage, workers' compensation and employee safety and our disclosures as a Nasdaq-listed, publicly-traded company. In addition, from time to time, we receive communications from government or regulatory agencies concerning investigations or allegations of noncompliance with laws or regulations in jurisdictions in which we operate. At this time, and except as is noted herein, we are unable to predict the outcome of, and cannot reasonably estimate the impact of, any pending litigation matters, matters concerning allegations of non-compliance with laws or regulations and matters concerning other allegations of other improprieties, or the incidence of any such matters in the future. Information regarding our legal proceedings is included below.

Legal Proceedings Described in Note 15, "Commitments and Contingencies", of Our Consolidated Financial Statements

Note 15, "Commitments and Contingencies" to our consolidated financial statements for the three and nine months ended September 30, 2023 contained in this Quarterly Report on Form 10-Q includes information on legal proceedings that constitute material contingencies for financial reporting purposes that could have a material effect on our financial condition or results of operations. This item should be read in conjunction with Note 15, "Commitments and Contingencies" for information regarding the following legal proceedings, which information is incorporated into this item by reference:

- Ethylene Oxide Tort Litigation – Illinois, Georgia and New Mexico;
- Insurance Coverage for Environmental Liabilities; and
- Sotera Health Company Securities Litigation and Related Matters.

Legal Proceedings That Are Not Described in Note 15, "Commitments and Contingencies" to Our Consolidated Financial Statements

In addition to the matters that are identified in Note 15, "Commitments and Contingencies" to our consolidated financial statements for the three and nine months ended September 30, 2023 contained in this Quarterly Report on Form 10-Q, and incorporated into this item by reference, the following matters also constitute material pending legal proceedings, other than ordinary course litigation incidental to our business, to which we are or any of our subsidiaries is a party.

Zoetermeer, Holland Criminal Proceedings and Criminal Financial Investigation

In 2010, the Dutch Public Prosecution Service started criminal proceedings against our subsidiary DEROSS Holding B.V. ("DEROSS"), in relation to alleged environmental permit violations for EO emissions in the period from 2004 to 2009 at its Zoetermeer processing facility. We agreed to defend and indemnify the two individuals overseeing environmental compliance during the time period of the alleged claims by the Public Prosecutor. In November 2010, the Public Prosecution Service also started a criminal financial investigation against DEROSS to determine whether it obtained illegal advantages by committing the alleged criminal offenses noted above.

In February 2018, DEROSS and the two individuals received favorable judgments from the trial court, which did not hold any of them responsible for the alleged criminal offenses. In March 2018, the Public Prosecutor filed an appeal against the favorable judgments. In May 2023, the Public Prosecutor agreed to a resolution of the proceedings against DEROSS and the two individuals. Pursuant to this agreed resolution, the Public Prosecutor has withdrawn the appeals against the 2018 judgments in the cases of the two individuals. In addition, the Public Prosecutor has agreed to terminate the proceedings against DEROSS on the condition that DEROSS fulfills its obligations under the agreed resolution, including a contribution of €990,000 to a charity. The resolution of proceedings against DEROSS is further conditioned on approval by the Dutch courts.

An escrow was established in 2011 to satisfy indemnity claims for losses related to this matter. The balance of the special escrow funds as of September 30, 2023 was approximately US$1.7 million and the cash collateral held by ABN Amro to provide security for the claims was approximately €2.4 million (US$2.5 million) as of September 30, 2023. At this time, there can be no assurance that the agreed resolution of this matter will be completed. If resolution is unsuccessful, we expect that the appeal of this matter could take several years to resolve; however, we believe the indemnification receivable continues to be recoverable and plan to ensure escrow funds remain in place to cover the agreed resolution described above or outcomes of an appeal.

While we have received letters in past years from a small number of individuals claiming to live or work in the vicinity of the Zoetermeer facility, no civil claims have been filed against DEROSS or us. It is possible that these or other individuals living in the vicinity of the Zoetermeer facility may file civil claims at some time in the future. We have not provided for a contingency reserve in connection with any civil claims as we are unable to determine the likelihood of an unfavorable outcome and no reasonable estimate of a loss or range of losses, if any, can be made.

Notice of Violation at Queensbury, New York Ethylene Oxide Sterilization Facility

In late May 2023, Sterigenics' Queensbury, New York facility experienced a power outage that resulted in a failure to restart the facility's scrubber system, which is part of the facility's emission control systems. The disruption of the facility's scrubber lasted for approximately 48 hours. Upon discovering the disruption, the facility restarted the scrubber to control emissions within the system and then ceased operations. Operating without the scrubber resulted in nine intermittent releases of ethylene oxide over a period of 48 hours from the 78-foot stack at the facility.

Sterigenics promptly notified the New York State Department of Environmental Conservation ("DEC") and the US Environmental Protection Agency ("US EPA") about the failure of the scrubber system and resulting releases of ethylene oxide. Sterigenics implemented remedial measures to prevent a recurrence in the event of future power outages and, with the DEC's approval, resumed operations at the Queensbury facility 12 days after ceasing operations. On May 30, 2023, Sterigenics received a Notice of Violation ("NOV") from the DEC and in September 2023, the DEC offered to settle the NOV for an immaterial amount as well as requirements to implement additional emissions monitoring and back-up power at the facility. Sterigenics is assessing the DEC settlement offer.

Notices of Violation at Vernon and Ontario, California Ethylene Oxide Sterilization Facilities

In 2022, the South Coast Air Quality Management District ("SCAQMD") in Southern California initiated an investigation into ethylene oxide sterilization facilities located in the SCAQMD region, including Sterigenics' facilities in Vernon and Ontario, California. In connection with this investigation, SCAQMD issued NOVs to the Vernon and Ontario facilities relating to alleged violations of SCAQMD operational, maintenance, permitting and reporting requirements and alleging that levels of ambient EO detected by SCAQMD during 2022 caused a public nuisance for off-site workers around the facilities in violation of general prohibitions on emissions. Sterigenics disputes the merits of the alleged violations. In October 2023, SCAQMD offered a settlement proposal, which Sterigenics is assessing. Sterigenics expects to negotiate final terms and settle these NOVs for an immaterial amount.

Item 1A. Risk Factors.

The risk factor titled "We are subject to extensive regulatory requirements and routine regulatory audits in our operations. …" included in Part I, Item 1A, "Risk Factors" of our 2022 Form 10-K for the year ended December 31, 2022, as amended by our Quarterly Reports on Form 10-Q for the quarter ended March 31, 2023 and June 30, 2023, is hereby updated by deleting the final paragraph thereof and substituting the paragraph immediately below in its place. Other than such substitution, the text of the risk factor is unchanged.

In April 2023, the US EPA proposed stricter EO regulations based on the 2016 IRIS Assessment, including (1) a proposed interim decision under FIFRA that sets forth measures designed to mitigate EO exposure, in particular for workers exposed to EO in occupational settings, and (2) proposed amendments to the NESHAP governing commercial EO sterilization facilities like ours that would require these facilities to implement additional air pollution control technologies, practices and procedures designed to further reduce EO emissions from EO facilities. These April 2023 proposals contain a number of proposed requirements that are inconsistent with existing industry practices and set forth proposed implementation timelines that would be difficult to meet at existing facilities for some of the proposed requirements. The public comment period on these proposals closed in late June 2023, with thousands of comments received by the US EPA, which may lead to clarifications and revisions in the final US EPA regulations. Although we have been implementing enhancements at our EO sterilization facilities in the United States that we expect will facilitate our ability to meet many of the proposed requirements, certain facets of the proposed requirements are untested or not widely adopted at existing EO sterilization facilities. Compliance with the proposals in the form proposed in April 2023 will require additional facility modifications as well as added capital and operational costs, and some requirements (if adopted as proposed) could be unachievable at our EO facilities and at existing EO facilities throughout the industry. The US EPA is expected to adopt final NESHAP requirements by March of 2024 and adopt an interim decision under FIFRA by later in 2024. The US EPA's April 2023 proposals contemplate that existing facilities will be required to comply with many of the requirements as soon as 18 months following adoption.

Item 5. Other Information.

Rule 10b5-1 Trading Plans

During the three and nine months ended September 30, 2023, none of the Company's directors or executive officers adopted or terminated any contract, instruction or written plan for the purchase or sale of Company securities that was intended to satisfy the affirmative defense conditions of Rule 10b5-1(c) or any "non-Rule 10b5-1 trading arrangement" (as that term is defined in Regulation S-K, Item 408).

Item 6. Exhibits.

The exhibits listed in the following Exhibit Index are filed, furnished, or incorporated by reference as part of this Quarterly Report on Form 10-Q.

		Incorporated by Reference				
Exhibit No	**Description of Exhibits**	**Form**	**File No.**	**Exhibit**	**Filing Date**	**Furnished/Filed Herewith**
31.1	Certification of Principal Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
31.2	Certification of Principal Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002					*
32.1	Certifications of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					**
101.INS	Inline XBRL Instance Document - The XBRL Instance Document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document					*
101.SCH	Inline XBRL Taxonomy Extension Schema Document					*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					*
101.LAB	Inline XBRL Taxonomy Label Linkbase Document					*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					*
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					*

* Filed Herewith

** Furnished Herewith

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

SOTERA HEALTH COMPANY

By:	/s/ Jonathan M. Lyons
Name:	Jonathan M. Lyons
Title:	Senior Vice President and Chief Financial Officer (Principal Financial Officer)

Date: November 1, 2023

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael B. Petras, Jr., certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sotera Health Company;

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 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 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.

Date: November 1, 2023

/s/ Michael B. Petras, Jr.
Michael B. Petras, Jr.
Chairman and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jonathan M. Lyons, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Sotera Health Company;

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 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 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.

Date: November 1, 2023

/s/ Jonathan M. Lyons

Jonathan M. Lyons

Senior Vice President and Chief Financial Officer

(Principal Financial Officer)

Exhibit 32.1

CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER

PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), each of the undersigned officers of Sotera Health Company (the "Company"), do hereby certify, to each such officer's knowledge, that the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2023 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and information contained in the Form 10-Q fairly presents, in all material respects, the financial condition and results of operations of the Company.

	/s/ Michael B. Petras, Jr.
Dated: November 1, 2023	Michael B. Petras, Jr. Title: Chairman and Chief Executive Officer *(Principal Executive Officer)*
	/s/ Jonathan M. Lyons
Dated: November 1, 2023	Jonathan M. Lyons Title: Senior Vice President and Chief Financial Officer *(Principal Financial Officer)*

The foregoing certifications are furnished and are not deemed filed with the Securities and Exchange Commission for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), and are not deemed to be incorporated by reference into any filing of Sotera Health Company under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent that Sotera Health Company specifically incorporates them by reference.