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 January 31, 2022
or

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

For the transition period from _____ to _____

Commission File Number 001-09974

ENZO BIOCHEM, INC.
(Exact name of registrant as specified in its charter)

New York	13-2866202
(State or Other Jurisdiction of Incorporation or Organization)	(IRS. Employer Identification No.)
527 Madison Ave, New York, New York	10022
(Address of Principal Executive office)	(Zip Code)

212-583-0100
(Registrant's telephone number, including area code)

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 has 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 and posted pursuant to Rule 45 of Regulation S-T (§232.405 of that chapter) during the preceding 12 months (or such shorter period that the registrant was required to submit and post such files).

Yes ☒ No □

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common stock $0.01 par	ENZ	New York Stock Exchange

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 (as defined in Rule 12b-2 of the Exchange Act).

Large accelerated filer □
Non-accelerated filer □
Emerging growth company □
Accelerated filer ☒
Smaller reporting 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.

Yes □ No □

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 March 11, 2022, the Registrant had 48,709,154 shares of common stock outstanding

ENZO BIOCHEM, INC.
FORM 10-Q
January 31, 2022

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Part 1 Financial Information
Item 1 Financial Statements

ENZO BIOCHEM, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	January 31, 2022 (unaudited)	July 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,159	$ 13,524
Marketable securities	29,480	29,978
Accounts receivable, net	15,316	10,198
Inventories	13,851	12,652
Prepaid expenses	3,904	4,230
Total current assets	66,710	70,582
Property, plant, and equipment, net	17,527	16,585
Right-of-use assets	15,407	17,020
Goodwill	7,452	7,452
Intangible assets, net	100	244
Other, including restricted cash of $1,000 at January 31, 2022 and $750 at July 31, 2021	1,626	1,808
Total assets	$ 108,822	$ 113,691
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable – trade	6,860	8,123
Accrued liabilities	15,865	14,301
Current portion of operating lease liabilities	3,187	3,419
Other current liabilities and finance leases short term	236	233
Total current liabilities	26,148	26,076
Finance leases long term and other liabilities	79	115
Operating lease liabilities, non-current	13,199	14,558
Long term debt – net	4,270	4,356
Total liabilities	$ 43,696	$ 45,105
Commitments and contingencies – see Note 12		
Stockholders' equity:		
Preferred Stock, $.01 par value; authorized 25,000,000 shares; no shares issued or outstanding	—	—
Common Stock, $.01 par value; authorized 75,000,000 shares; shares issued and outstanding: 48,471,771 at January 31, 2022 and July 31, 2021	485	485
Additional paid-in capital	338,021	337,126
Accumulated deficit	(275,351)	(270,377)
Accumulated other comprehensive income	1,971	1,352
Total stockholders' equity	65,126	68,586
Total liabilities and stockholders' equity	$ 108,822	$ 113,691

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

ENZO BIOCHEM, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(UNAUDITED)
(in thousands, except per share data)

	Three Months Ended January 31,		Six Months Ended January 31,	
	2022	2021	2022	2021
Revenues	$ 34,046	$ 31,466	$ 60,565	$ 60,121
Operating costs and expenses:				
Cost of revenues	17,838	15,645	33,111	32,403
Research and development	820	806	1,564	1,552
Selling, general and administrative	14,466	11,013	25,518	21,027
Legal and related expense, net	2,845	2,292	4,127	2,932
Total operating costs and expenses	35,969	29,756	64,320	57,914
Operating (loss) income	(1,923)	1,710	(3,755)	2,207
Other income (expense):				
Interest, net	68	(49)	107	(100)
Other	(350)	16	(495)	33
Foreign exchange (loss) gain	(450)	625	(831)	461
Total other (expense) income	(732)	592	(1,219)	394
(Loss) income before income taxes	(2,655)	2,302	(4,974)	2,601
Income taxes	—	—	—	—
Net (loss) income	$ (2,655)	$ 2,302	$ (4,974)	$ 2,601
Net (loss) income per common share:				
Basic	$ (0.05)	$ 0.05	$ (0.10)	$ 0.05
Diluted	$ (0.05)	$ 0.05	$ (0.10)	$ 0.05
Weighted average common shares outstanding:				
Basic	48,472	48,006	48,472	47,951
Diluted	48,472	48,053	48,472	47,973

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

ENZO BIOCHEM, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(UNAUDITED)
(in thousands)

	Three Months Ended January 31,		Six Months Ended January 31,	
	2022	**2021**	**2022**	**2021**
Net (loss) income	$ (2,655)	$ 2,302	$ (4,974)	$ 2,601
Other comprehensive (loss) income:				
Foreign currency translation adjustments	342	(582)	619	(411)
Comprehensive (loss) income	$ (2,313)	$ 1,720	$ (4,355)	$ 2,190

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

ENZO BIOCHEM, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
Three Months Ended January 31, 2022 and 2021
(unaudited)
(in thousands, except share data)

	Common Stock Shares Issued	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
Balance at October 31, 2021	*48,471,771*	$ 485	$ 337,342	$ (272,696)	$ 1,629	$ 66,760
Net loss for the period ended January 31, 2022	—	—	—	(2,655)	—	(2,655)
Share-based compensation charges	—	—	679	—	—	679
Foreign currency translation adjustments	—	—	—	—	342	342
Balance at January 31, 2022	*48,471,771*	$ 485	$ 338,021	$ (275,351)	$ 1,971	$ 65,126

	Common Stock Shares Issued	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
Balance at October 31, 2020	*47,895,050*	$ 479	$ 334,640	$ (277,953)	$ 1,852	$ 59,018
Net income for the period ended January 31, 2021	—	—	—	2,302	—	2,302
Share-based compensation charges	—	—	176	—	—	176
Issuance of common stock for bonus payments	*332,700*	3	872	—	—	875
Foreign currency translation adjustments	—	—	—	—	(582)	(582)
Balance at January 31, 2021	*48,227,750*	$ 482	$ 335,688	$ (275,651)	$ 1,270	$ 61,789

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

ENZO BIOCHEM, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
Six Months Ended January 31, 2022 and 2021
(unaudited)
(in thousands, except share data)

	Common Stock Shares Issued	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
Balance at July 31, 2021	*48,471,771*	$ 485	$ 337,126	$ (270,377)	$ 1,352	$ 68,586
Net loss for the period ended January 31, 2022	—	—	—	(4,974)	—	(4,974)
Share-based compensation charges	—	—	895	—	—	895
Foreign currency translation adjustments	—	—	—	—	619	619
Balance at January 31, 2022	*48,471,771*	$ 485	$ 338,021	$ (275,351)	$ 1,971	$ 65,126

	Common Stock Shares Issued	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Income	Total Stockholders' Equity
Balance at July 31, 2020	*47,895,050*	$ 479	$ 334,473	$ (278,252)	$ 1,681	$ 58,381
Net income for the period ended January 31, 2021	—	—	—	2,601	—	2,601
Share-based compensation charges	—	—	343	—	—	343
Issuance of common stock for bonus payments	*332,700*	3	872	—	—	875
Foreign currency translation adjustments	—	—	—	—	(411)	(411)
Balance at January 31, 2021	*48,227,750*	$ 482	$ 335,688	$ (275,651)	$ 1,270	$ 61,789

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

ENZO BIOCHEM, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(UNAUDITED)
(in thousands)

	Six Months Ended January 31,	
	2022	**2021**
Cash flows from operating activities:		
Net (loss) income	$ (4,974)	$ 2,601
Adjustments to reconcile net (loss) income to net cash used in operating activities:		
Depreciation and amortization of property, plant and equipment	1,253	1,144
Amortization of intangible assets	153	151
Share-based compensation charges	895	343
Share-based 401(k) employer match expense	358	423
Foreign exchange loss (gain)	773	(504)
Unrealized loss on marketable securities	553	—
Changes in operating assets and liabilities:		
Accounts receivable	(5,127)	(2,892)
Inventories	(1,211)	(1,392)
Prepaid expenses and other assets	743	(62)
Accounts payable – trade	(1,272)	(4,062)
Accrued liabilities, other current liabilities and other liabilities	1,183	2,222
Total adjustments	(1,699)	(4,629)
Net cash used in operating activities	(6,673)	(2,028)
Cash flows from investing activities:		
Purchases of marketable securities	(55)	—
Capital expenditures	(2,247)	(1,123)
Net cash used in investing activities	(2,302)	(1,123)
Cash flows from financing activities:		
Repayments under mortgage agreement and finance leases	(114)	(207)
Net cash used in financing activities	(114)	(207)
Effect of exchange rate changes on cash and cash equivalents	(26)	29
Decrease in cash and cash equivalents and restricted cash	(9,115)	(3,329)
Cash and cash equivalents and restricted cash - beginning of period	14,274	48,615
Total cash and cash equivalents and restricted cash - end of period	$ 5,159	$ 45,286
The composition of total cash and cash equivalents and restricted cash is as follows:		
Cash and cash equivalents	4,159	44,536
Restricted cash included in other assets	1,000	750
Total cash and cash equivalents and restricted cash	$ 5,159	$ 45,286

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

ENZO BIOCHEM, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
As of January 31, 2022
(Unaudited)
(Dollars in thousands, except share data)

Note 1 – Basis of Presentation

The accompanying consolidated financial statements include the accounts of Enzo Biochem, Inc. and its wholly-owned subsidiaries, Enzo Life Sciences, Enzo Clinical Labs, Enzo Therapeutics, Enzo Realty LLC and Enzo Realty II LLC, collectively or with one or more of its subsidiaries referred to as the "Company" or "Companies". The Company has three reportable segments: Clinical Services, Products, and Therapeutics. The consolidated balance sheet as of January 31, 2022, the consolidated statements of operations, comprehensive (loss) income and stockholders' equity for the three and six months ended January 31, 2022 and 2021, and the consolidated statements of cash flows for the six months ended January 31, 2022 and 2021 (the "interim statements") are unaudited. In the opinion of management, all adjustments (which include normal recurring adjustments) necessary to present fairly the financial position and operating results for the interim periods have been made. Certain information and footnote disclosure, normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States, have been condensed or omitted. The interim statements should be read in conjunction with the consolidated financial statements for the year ended July 31, 2021 and notes thereto contained in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission. The consolidated balance sheet at July 31, 2021 has been derived from the audited financial statements at that date. The results of operations for the three and six months ended January 31, 2022 are not necessarily indicative of the results that may be expected for the fiscal year ending July 31, 2022.

While the rate of transmission of COVID-19 and its variants is on the decline in the US and the economy has begun to open, it continues to spread in other parts of the world and negatively impacts the world economy. Federal, state and local governmental policies and initiatives designed to reduce the transmission of COVID-19 have resulted in, among other things, a significant reduction in physician office visits, the cancellation of elective medical procedures, customers of our products remaining closed or continuing to severely curtail their operations (voluntarily or in response to government orders), and the continuation of work-from-home or shelter-in-place policies. The COVID-19 impact on the Company's operations is consistent with the overall industry and publicly issued statements from competitors, partners, and vendors.

While the Company anticipates that COVID-19 will continue to impact its business in the second half of fiscal 2022 and potentially beyond, the Company expects that increases in vaccination rates and booster shots, the development of new therapeutics and greater availability of rapid COVID-19 tests should result in a continued, significant decline in demand for COVID-19 Testing, in the Company's region. As a result, COVID-19 Testing demand in fiscal year 2022 is not anticipated to match 2021 levels. Global supply chain issues due to the pandemic continue to hamper both the manufacturing of products within the life science segment as well as testing capabilities in the clinical laboratory.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results could differ from those estimates.

COVID-19

The extent to which the COVID-19 pandemic impacts the Company's business and consolidated results of operations, financial position and cash flows will depend on numerous evolving factors including, but not limited to: the magnitude and duration of the COVID-19 pandemic, the extent to which it will impact worldwide macroeconomic conditions including, but not limited to, employment rates and health insurance coverage, the speed of the anticipated recovery, and governmental and business reactions to the pandemic. These factors are beyond the Company's knowledge and control, and as a result, at this time the Company cannot reasonably estimate the impact the COVID-19 pandemic will have on its businesses but the impact could be material. The Company assessed certain accounting matters that generally require consideration of forecasted financial information in context with the information reasonably available to the Company and the unknown future impacts of COVID-19 as of January 31, 2022 and through the date of this report. The accounting matters assessed included, but were not limited to, the Company's patient self-pay revenue concessions and credit losses in the Clinical Services segment, accounts receivable, inventories and the carrying value of goodwill and other long-lived assets. The Company's future assessment of the magnitude and duration of COVID-19, as well as other factors, could result in additional material impacts to the Company's consolidated financial statements in future reporting periods. We believe COVID-19 volume could decline in the quarters ahead as the percentage of Americans who are vaccinated increases. However, the emergence and spread of variants may cause our COVID-19 testing volume to increase again. Even after the COVID-19 pandemic has moderated and the business and social distancing restrictions have eased, we may continue to experience similar adverse effects to our businesses, consolidated results of operations, financial position and cash flows resulting from a recessionary economic environment that may persist.

Effect of New Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In December 2019, the FASB issued ASU No. 2019-12 *Income Taxes (Topic 740) Simplifying the Accounting for Income Taxes.* The amendments in the ASU simplify the accounting for income taxes by removing certain exceptions to the general principles of Topic 740. The amendments also improve consistent application of and simplify U.S. GAAP for other areas of Topic 740 by clarifying and amending existing guidance. We adopted the amendments in this ASU beginning August 1, 2021. The adoption of the amendments in this ASU did not have a material impact on our consolidated results of operations, financial position or cash flows

Pronouncements Issued but Not Yet Adopted

In June 2016, FASB issued ASU No. 2016-13 Financial Instruments – Credit Losses (Topic 326). This standard changes the impairment model for most financial instruments, including trade receivables, from an incurred loss method to a new forward-looking approach, based on expected losses.

The estimate of expected credit losses will require entities to incorporate considerations of historical information, current information and reasonable and supportable forecasts. Adoption of this standard is required for our annual and interim periods beginning August 1, 2023, provided we qualify as a smaller reporting company at the end of fiscal 2022 and must be adopted using a modified retrospective transition approach. We are currently assessing the impact of the adoption of this standard on our results of operations, financial position and cash flows.

We reviewed all other recently issued accounting pronouncements and have concluded they are not applicable or not expected to be significant to the accounting for our operations.

Concentration Risk

Other than the Medicare program, two providers whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMOs") categories represent approximately 36% and 35% of Clinical Services net revenue for the three months ended January 31, 2022 and 2021 respectively, and 35% and 34% of Clinical Services net revenue for the six months ended January 31, 2022 and 2021 respectively.

Other than the Medicare program, one provider whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMOs") categories represents 27% of the Clinical Services net accounts receivable as of January 31, 2022.

For the three and six months ended January 31, 2022, the Life Sciences segment's revenue includes $2,800 from one customer, representing 27% and 16% of its revenues for the three and six month periods, respectively. The net receivable from this customer represents approximately 32% of the segment's total accounts receivable as of January 31, 2022.

Income Taxes

The Company accounts for income taxes under the liability method of accounting for income taxes. Under the liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The liability method requires that any tax benefits recognized for net operating loss carry forwards and other items be reduced by a valuation allowance where it is not more likely than not the benefits will be realized in the foreseeable future. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Under the liability method, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. It is the Company's policy to provide for uncertain tax positions, if any, and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

We maintain a full valuation allowance on all tax assets and, as a consequence, do not provide any tax benefit for the fiscal 2022 period loss or any tax provision for the fiscal 2021 period pre-tax income.

Fair Value Measurements

The Company determines fair value measurements used in its consolidated financial statements based upon the exit price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants exclusive of any transaction costs, as determined by either the principal market or the most advantageous market.

Inputs used in the valuation techniques to derive fair values are classified based on a three-level hierarchy. The basis for fair value measurements for each level within the hierarchy is described below with Level 1 having the highest priority and Level 3 having the lowest.

Level 1: Quoted prices in active markets for identical assets or liabilities.

Level 2: Quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable in active markets.

Level 3: Valuations derived from valuation techniques in which one or more significant inputs are unobservable.

Marketable securities

The Company limits its credit risk associated with investments by investing in a mutual fund and an exchange traded fund (ETF) which hold highly rated corporate bonds, asset backed securities, municipal bonds, mortgage obligations and government obligations. These investments are classified as trading securities and are Level 1 fair value investments. As of January 31, 2022, the fair value of these investments was $29,480 and the cost basis was $30,116. We recognized unrealized losses of $357 and $553 for the three and six months ended January 31, 2022.

Note 2 – Net income (loss) per share

Basic net income (loss) per share represents net income (loss) divided by the weighted average number of common shares outstanding during the period. As a result of the net loss for the three and six months ended January 31, 2022, diluted weighted average shares outstanding are the same as basic weighted average shares outstanding, and do not include the potential common shares from stock options or unearned performance stock units because to do so would be antidilutive. For the three and six months ended January 31, 2022, approximately 499,000 and 527,000 respectively, of potential common shares ("in the money options") and unvested performance stock units were excluded from the calculation of diluted (loss) per share. For the three and six months ended January 31, 2021, approximately 47,000 and 23,000 weighted average stock options and unvested performance stock units were included in the calculation of diluted weighted average shares outstanding.

For the three and six months ended January 31, 2022, the effect of approximately 1,091,000 and 942,000 of outstanding "out of the money" options to purchase common shares were excluded from the calculation of diluted net loss per share because their effect would be anti-dilutive. For the three and six months ended January 31, 2021, the effect of approximately 2,264,000 and 2,122,000 of outstanding "out of the money" options to purchase common shares were excluded from the calculation of diluted net income per share because their effect would be anti-dilutive.

Note 3 – Revenue Recognition

Clinical Services Revenue

Service revenues in the Company's clinical services business accounted for 70% and 72% of the Company's total revenues for the three and six months ended January 31, 2022 respectively, and 76% and 75% of the Company's total revenues for the three and six months ended January 31, 2021, respectively and are primarily comprised of a high volume of relatively low-dollar transactions. The services business, which provides clinical testing services, satisfies its performance obligation and recognizes revenues upon completion of the testing process for a specific patient and reporting to the ordering physician. The Company may also perform clinical testing services for other laboratories and will recognize revenue from those services when reported to the ordering laboratory. The Company estimates the amount of consideration it expects to receive from customer groups using the portfolio approach. These estimates of the expected consideration include the impact of contractual allowances and price concessions on our customer group portfolios consisting of healthcare insurers, government payers, client payers and patients as described below. Contracts with customers in our laboratory services business do not contain a financing component, based on the typically limited period of time between performance of services and collection of consideration. The transaction price includes variable consideration in the form of the contractual allowance and price concessions as well as the collectability of the transaction based on patient intent and ability to pay. The Company uses the expected value method in estimating the amount of the variability included in the transaction price.

The following are descriptions of our laboratory services business portfolios:

Third party payers and Health Maintenance Organizations (HMOs)

Reimbursements from third party payers, primarily healthcare insurers and HMOs are based on negotiated fee-for-service schedules and on capitated payment rates. Revenues consist of amounts billed net of contractual allowances for differences between amounts billed and the estimated consideration the Company expects to receive from such payers, which considers historical collection and denial experience and the terms of the Company's contractual arrangements. Adjustments to the allowances, based on actual receipts from the third-party payers, are recorded upon settlement.

Collection of the consideration the Company expects to receive is normally a function of providing complete and correct billing information to these third-party payers within the various filing deadlines, and typically occurs within 30 to 90 days of billing. Provided the Company has billed healthcare insurers accurately with complete information prior to the established filing deadline, there has historically been little to no collection risk. If there has been a delay in billing, the Company determines if the amounts in question will likely go past the filing deadline, and if so, will reserve accordingly for the billing.

Third-party payers, including government programs, may decide to deny payment or recoup payments for testing that they contend was improperly billed or not medically necessary, against their coverage determinations, or for which they believe they have otherwise overpaid (including as a result of their own error), and we may be required to refund payments already received. Our revenues may be subject to adjustment as a result of these factors among others, including without limitation, differing interpretations of billing and coding guidance and changes by government agencies and payers in interpretations, requirements, and "conditions of participation" in various programs.

Government Payer - Medicare

Reimbursements from Medicare are based on fee-for-service schedules set by Medicare, which is funded by the government. Revenues consist of amounts billed net of contractual allowances for differences between amounts billed and the estimated consideration the Company expects to receive from Medicare, which considers historical collection and denial experience and other factors. Adjustments to the allowances, based on actual receipts from the government payers, are recorded upon settlement.

Collection of consideration the Company expects to receive is normally a function of providing the complete and correct billing information within the various filing deadlines and typically occurs within 60 days of billing. Provided the Company has billed the government payer accurately with complete information prior to the established filing deadline, there has historically been little to no collection risk. If there has been a delay in billing, the Company determines if the amounts in question will likely go past the filing deadline, and, if so, it will reserve accordingly for the billing.

Patient self-pay

Uninsured patients are billed based on established patient fee schedules or fees negotiated with physicians on behalf of their patients. Coinsurance and deductible responsibilities based on fees negotiated with healthcare insurers are also billed to insured patients and included in this portfolio. Collection of billings from patients is subject to credit risk and ability of the patients to pay. Revenues consist of amounts billed net of discounts provided to uninsured patients in accordance with the Company's policies and implicit price concessions. Implicit price concessions represent differences between amounts billed and the estimated consideration the Company expects to receive from patients, which considers historical collection experience and other factors including current market conditions. Adjustments to the estimated allowances, based on actual receipts from the patients, are recorded upon settlement. Patient responsibility is invoiced and if it reaches 91 days outstanding, the account is sent to a collection agency for further processing. After the account has been with the collection agency for at least 105 days, and is determined to be uncollectable it is written off.

The following table represents clinical services net revenues and percentages by type of customer:

	Three months ended January 31, 2022		Three months ended January 31, 2021	
Revenue category				
Third-party payer	$ 14,256	60%	$ 15,023	63%
Medicare	2,784	12	3,910	16
Patient self-pay	2,605	11	1,997	8
HMOs	4,029	17	3,058	13
Total	$ 23,674	100%	$ 23,988	100%

	Six months ended January 31, 2022		Six months ended January 31, 2021	
Revenue category				
Third-party payer	$ 26,145	60%	$ 27,503	61%
Medicare	5,514	13	7,313	16
Patient self-pay	4,550	10	4,556	10
HMOs	7,206	17	5,839	13
Total	$ 43,415	100%	$ 45,211	100%

For the three and six months ended January 31, 2022 and 2021, all of the Company's clinical services revenues were generated within the United States.

Products Revenue

Products revenues consist of the sale of single-use products used in the identification of genomic information and are recognized at a point in time following the transfer of control of such products to the customer, which generally occurs upon shipment. Payment terms for shipments to end-user and distributor customers may range from 30 to 90 days. Any claims for credit or return of goods may be made generally within 30 days of receipt. Revenues are reduced to reflect estimated credits and returns, although historically these adjustments have not been material. Taxes collected from customers relating to product sales and remitted to governmental authorities are excluded from revenue. Amounts billed to customers for shipping and handling are included in revenue, while the related shipping and handling costs are reflected in cost of products.

Products revenue by geography is as follows:

	Three Months Ended January 31		Six Months Ended January 31	
	2022	2021	2022	2021
United States	$ 6,754	$ 3,524	$ 10,617	$ 7,469
Europe	2,401	2,635	4,407	5,066
Asia Pacific	1,217	1,319	2,126	2,375
Products revenue	$ 10,372	$ 7,478	$ 17,150	$ 14,910

Note 4 - Supplemental disclosure for statement of cash flows

During the six months ended January 31, 2022 and 2021, interest paid by the Company was $112 and $123, respectively.

For the six months ended January 31, 2022 and 2021, the net reductions in the measurement of right of use assets and liabilities included in cash flows from operating activities was $20 and $48, respectively. The changes are included in changes in accrued liabilities, other current liabilities, and other liabilities in the statement of cash flows.

For the six months ended January 31, 2022 and 2021, tax on capital paid by the Company was $116 and $120, respectively.

In January 2021, the Company issued 332,700 restricted shares of common stock to two senior executives in settlement of their accrued bonuses totaling $875.

Note 5 – Inventories

Inventories consist of the following:

	January 31, 2022	July 31, 2021
Raw materials	$ 1,349	$ 1,062
Work in process	2,802	2,534
Finished products	9,700	9,056
	$ 13,851	$ 12,652

Note 6 – Goodwill and intangible assets

Goodwill

The Company’s net carrying amount of goodwill is in the Clinical Laboratory Services segment and is $7,452 as of January 31, 2022 and July 31, 2021.

Intangible assets

The Company's change in the net carrying amount of intangible assets, all in the Life Sciences Products segment is as follows:

	Gross	Accumulated Amortization	Net
July 31, 2021	$ 27,775	$ (27,531)	$ 244
Amortization expense	—	(140)	(140)
Foreign currency translation	(216)	212	(4)
January 31, 2022	$ 27,559	$ (27,459)	$ 100

Intangible assets, all finite-lived, consist of the following:

	January 31, 2022			July 31, 2021		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Patents	$ 11,027	$ (11,027)	$ —	$ 11,027	(11,027)	$ —
Customer relationships	11,940	(11,840)	100	12,059	(11,815)	244
Website and acquired content	1,019	(1,019)	—	1,025	(1,025)	—
Licensed technology and other	488	(488)	—	494	(494)	—
Trademarks	3,085	(3,085)	—	3,170	(3,170)	—
Total	$ 27,559	$ (27,459)	$ 100	$ 27,775	(27,531)	$ 244

At January 31, 2022, information with respect to acquired intangibles is as follows:

	Useful life assigned	Weighted average remaining useful life
Customer relationships	8 -15 years	0.5 years

At January 31, 2022, the weighted average remaining useful life of all intangible assets was approximately six months.

Note 7 – Long term debt

In connection with the purchase of our new facility in November 2018, a wholly-owned subsidiary (the "mortgagor subsidiary") of the Company entered into a Fee Mortgage and Security Agreement (the "mortgage agreement") with Citibank, N.A. (the "mortgagee"). The mortgage agreement provides for a loan of $4,500 for a term of 10 years, bears a fixed interest rate of 5.09% per annum and requires monthly mortgage payments of principal and interest of $30. Debt issuance costs of $72 are being amortized over the life of the mortgage agreement. The balance of unamortized debt issuance cost was $49 at January 31, 2022. At January 31, 2022, the balance owed by the subsidiary under the mortgage agreement was $4.1 million. The Company's obligations under the mortgage agreement are secured by the new facility and by a $1,000 cash collateral deposit with the mortgagee as additional security. This restricted cash is included in other assets as of January 31, 2022.

The mortgage agreement includes affirmative and negative covenants and events of default, as defined. Events of default include non-payment of principal and interest on debt outstanding, non-performance of covenants, material changes in business, breach of representations, bankruptcy or insolvency, and changes in control. The mortgage includes certain financial covenants. Effective October 19, 2020, the Company and the mortgagee agreed to a covenant restructure whereby the mortgagee waived the Company's financial ratio covenant for the fiscal period ended July 31, 2020 and modified the mortgage to replace a financial ratio covenant with a liquidity covenant. The liquidity covenant required that we own and maintain at all times and throughout the remaining term of the loan at least $25,000 of liquid assets, defined as time deposits, money market accounts and obligations issued by the U.S. government or any of its agencies. The cash collateral agreement was also modified to require compliance with the liquidity covenant for two consecutive fiscal years before the collateral is released back to us. Effective September 29, 2021, the Company and the mortgagee agreed to further covenant restructuring whereby (a) the liquidity covenant was reduced to 150% (or approximately $6 million at January 31, 2022) of the loan principal from $25 million previously, and (b) the collateral requirement would be increased from $0.75 million to $1.0 million. The Company was in compliance as to the liquidity covenant as of January 31, 2022 and increased the collateral deposit to $1.0 million in November 2021.

In April 2020, our subsidiary in Switzerland received a loan of CHF 0.4 million ($0.4 million, based on the foreign exchange rate as of January 31, 2022) from the Swiss government under the "Corona Krise" emergency loan program in response to the pandemic. This loan is uncollateralized, bears 0% interest, is due in 5 years, and may be repaid at any time. This loan is included in long term debt – net as of January 31, 2022.

Minimum future annual principal payments under these agreements as of January 31, 2022 are as follows:

July 31,	**Total**
2022	$ 78
2023	160
2024	167
2025	594
2026	186
Thereafter	3,290
Total principal payments	4,475
Less: current portion, included in other current liabilities and finance leases short term	(156)
Unamortized mortgage cost	(49)
Long term debt - net	$ 4,270

Note 8 - Leases

The Company determines if an arrangement is or contains a lease at contract inception. The Company leases buildings, office space, patient service centers, and equipment primarily through operating leases, and equipment through a limited number of finance leases. Generally, a right-of-use asset, representing the right to use the underlying asset during the lease term, and a lease liability, representing the payment obligation arising from the lease, are recognized on the balance sheet at lease commencement based on the present value of the payment obligation. For operating leases, expense is recognized on a straight-line basis over the lease term. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the right-of-use asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. The Company primarily uses its incremental borrowing rate in determining the present value of lease payments as the Company's leases generally do not provide an implicit rate.

The Company has lease agreements with (i) right-of-use asset payments and (ii) non-lease components (i.e. payments related to maintenance fees, utilities, etc.), which have generally been combined and accounted for as a single lease component. The Company's leases have remaining terms of less than 1 year to 6 years, some of which include options to extend the leases for up to 5 years. The Company's lease terms may include renewal options that are reasonably certain to be exercised and termination options that are reasonably certain not to be exercised. Certain of the Company's lease agreements include rental payments adjusted periodically for inflation or a market rate which are included in the lease liabilities.

Leases	Balance Sheet Classification	January 31, 2022	July 31, 2021
Assets			
Operating	Right-of-use assets	$ 15,407	$ 17,020
Finance	Property, plant and equipment, net (a)	210	248
Total lease assets		$ 15,617	$ 17,268
Liabilities			
Current:			
Operating	Current portion of operating lease liabilities	$ 3,187	$ 3,419
Finance	Finance leases short term	80	88
Non-current:			
Operating	Operating lease liabilities, non-current	13,199	14,558
Finance	Finance leases long term and other liabilities	79	110
Total lease liabilities		$ 16,545	$ 18,175

(a) Accumulated amortization of finance lease assets was approximately $171 and $1,100 as of January 31, 2022 and July 31, 2021, respectively.

Components of lease cost were as follows:

	Three months ended January 31,		Six months ended January 31,	
	2022	2021	2022	2021
Operating lease cost	$ 1,129	$ 1,515	$ 2,287	$ 2,994
Finance lease cost:				
Amortization of leased assets	19	33	38	99
Interest on lease liabilities	2	4	5	9
Total lease cost	$ 1,150	$ 1,552	$ 2,330	$ 3,102

The maturity of the Company's lease liabilities as of January 31, 2022 is as follows:

Maturity of lease liabilities, years ending July 31,	Operating leases	Finance leases	Total
2022	$ 2,091	$ 44	$ 2,135
2023	3,589	88	3,677
2024	3,414	37	3,451
2025	3,161	—	3,161
2026	3,150	—	3,150
Thereafter	3,224	—	3,224
Total lease payments	18,629	169	18,798
Less: Interest (a)	(2,243)	(10)	(2,253)
Present value of lease liabilities	$ 16,386	$ 159	$ 16,545

(a) Primarily calculated using the Company's incremental borrowing rate.

Lease term and discount rate for the six months ended January 31 were as follows:

Lease term and discount rate	2022	2021
Weighted-average remaining lease term (years):		
Operating leases	5.2 years	5.9 years
Finance leases	2.0 years	2.9 years
Weighted-average discount rate:		
Operating leases	4.98%	4.95%
Finance leases	5.96%	9.02%

See Note 4 for cash flow information on cash paid for amounts included in the measurement of lease liabilities for the three months ended January 31, 2022 and 2021.

Note 9 – Accrued Liabilities

Accrued liabilities consist of:

	January 31, 2021	July 31, 2021
Payroll, benefits, and commissions	$ 7,744	$ 5,856
Professional fees	767	628
Legal	4,563	2,554
Deferred revenue	681	2,675
Other	2,110	2,588
	$ 15,865	$ 14,301

Deferred revenue

In order to increase cash flow to providers of services and suppliers impacted by the pandemic, the Centers for Medicare and Medicaid Services (CMS) expanded its Accelerated and Advance Payment Program to a broader group of Medicare providers. We applied for and received a $2,526 payment advance from this program in April 2020. The recoupment by CMS of our advance payment had been scheduled to begin 120 days after the date of receipt, at which time every claim we submit from that point would be automatically offset to repay the advance payment. Any unrecouped advance balance remaining after 90 days of the recoupment process was to be repaid such that 210 days after receiving the advance it would be entirely repaid. In October 2020, the Continuing Appropriations Act, 2021 and Other Extensions Act amended the repayment terms of the Advance Payment Program. The recoupment period was extended and the automatic recoupment began one year after the date the advance payment was received, which in our case meant recoupment started April 2021. Additionally, during the first 11 months after recoupment begins, the rate will be 25% and repayment will occur through an automatic recoupment of our Medicare payments. At the end of the 11 month period, the recoupment rate will increase. If the total amount of the advance payment is not recovered within 29 months from the date the advance was received, a demand letter for the outstanding balance will be issued. Since the Company has the right to repay the advance at any time, the entire balance is considered current. As of January 31, 2022 and July 31, 2021, the deferred revenue related to the CMS payment advance was $681 and $1,847, respectively.

Self-Insured Medical Plan

The Company self-funds medical insurance coverage for certain of its U.S. based employees. The risk to the Company is believed to be limited through the use of individual and aggregate stop loss insurance. As of January 31, 2022 and July 31, 2021, the Company has established a reserve of $317 and $300, which is included in accrued liabilities for payroll, benefits and commissions, for claims that have been reported but not paid and for claims that have been incurred but not reported. The reserve is based upon the Company’s historical payment trends, claim history and current estimates.

Note 10 – Stockholders' Equity

Controlled Equity Offering

The Company has a Controlled Equity Offering[SM] Sales Agreement (the "Sales Agreement") with Cantor Fitzgerald & Co., as sales agent ("Cantor"). Under the Sales Agreement, the Company may offer and sell, from time to time, through Cantor, shares of the Company's common stock, par value $0.01 per share (the "Common Stock"). The Company pays Cantor a commission of 3% of the aggregate gross proceeds received under the Sale Agreement. The Company is not obligated to make any sales of the Shares under the Sales Agreement. The offering of Shares pursuant to the Sales Agreement will terminate upon the earlier of (a) the sale of all of the Shares subject to the Sales Agreement or (b) the termination of the Sales Agreement by Cantor or the Company, as permitted therein. The initial agreement contemplated the sale of shares of the Company's common stock having an aggregate offering price of up to $20.0 million.

In December 2014, the Sales Agreement was amended in order for the Company to offer and sell additional shares of Common Stock having an aggregate offering price of $20.0 million.

In September 2017, the Company filed with the SEC a Form S-3 "shelf" registration and sales agreement prospectus covering the offering, issuance and sale of our Common Stock that may be issued and sold under the existing Sales Agreement in an aggregate amount of up to $19.2 million. A total of $150 million of securities could have been sold under this shelf registration, which was declared effective September 15, 2017. The Form S-3 expired in October 2020 but may be refiled at any time at the discretion of the Company. During the six months ended January 31, 2021, the Company did not sell any shares of Common Stock under the Sales Agreement.

Share-based compensation

In January 2011, the Company's stockholders approved the adoption of the 2011 Incentive Plan (the "2011 Plan") for the issuance of equity awards, including, among others, options, restricted stock, restricted stock units and performance stock units for up to 3,000,000 shares of common stock. In January 2018, the Company's stockholders approved the amendment and restatement of the 2011 Plan (the "Amended and Restated 2011 Plan") to increase the number of shares of common stock available for grant under the 2011 Plan by 2,000,000 shares of common stock bringing the total number of shares available for grant to 5,000,000 shares of common stock. On October 7, 2020, the Company's Board of Directors approved the amendment and restatement of the Amended and Restated 2011 Plan, with an effective date of October 7, 2020 and subject to approval by the Company's stockholders at the 2020 annual meeting of stockholders of the Company. The amendment and restatement of the Amended and Restated 2011 Plan was for purposes of, among other things, (i) increasing the shares of common stock available for grant under the Amended and Restated 2011 Plan by an additional 4,000,000 shares of common stock bringing the total number of shares available for grant to 9,000,000 shares of common stock and (ii) extending the term of the Amended and Restated 2011 Plan until October 7, 2030. In January 2021, the Company's stockholders approved the amendment and restatement of the Amended and Restated 2011 Plan.

The exercise price of options granted under the Amended and Restated 2011 Plan, as amended and restated, is equal to or greater than fair market value of the common stock on the date of grant. The Amended and Restated 2011 Plan, as amended and restated, will terminate at the earliest of (a) such time as no shares of common stock remain available for issuance under the plan, (b) termination of the plan by the Company's Board of Directors, or (c) October 7, 2030. Awards outstanding upon expiration of the Amended and Restated 2011 Plan, as amended and restated, will remain in effect until they have been exercised or terminated, or have expired. As of January 31, 2022, there were approximately 5,471,000 shares of common stock available for grant under the Amended and Restated 2011 Plan, as amended and restated.

The amounts of share-based compensation expense recognized in the periods presented are as follows:

	Three months ended January 31,		Six months ended January 31,	
	2022	2021	2022	2021
Stock options	$ 510	$ 175	$ 660	$ 341
Performance stock units	96	—	162	—
Restricted stock units	73	1	73	2
	$ 679	$ 176	$ 895	$ 343

The following table sets forth the amount of expense related to share-based payment arrangements included in specific line items in the accompanying statements of operations:

	Three months ended January 31,		Six months ended January 31,	
	2022	2021	2022	2021
Selling, general and administrative	$ 667	$ 162	$ 879	$ 316
Cost of revenues	12	14	16	27
	$ 679	$ 176	$ 895	$ 343

During the three and six months ended January 31, 2022, the Company recognized additional share-based compensation expense of $225 included in Selling, general and administrative expenses, for the modification of options awards affecting two members of the board of directors who resigned in January 2022.

No excess tax benefits were recognized during the three month periods ended January 31, 2022 and 2021.

Stock Option Plans

The following table summarizes stock option activity during the six month period ended January 31, 2022:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term	Aggregate Intrinsic Value (000s)
Outstanding at July 31, 2021	2,504,563	$ 3.74		
Awarded	702,000	$ 3.39		
Exercised	—			$
Cancelled or expired	(406,396)	$ 7.05		
Outstanding at end of period	2,800,167	$ 3.17	2.6 years	$ 1,149
Exercisable at end of period	1,481,966	$	1.2 years	$ 633

As of January 31, 2022, the total future compensation cost related to non-vested options, not yet recognized in the statements of operations, was $1,611 and the weighted average period over which the remaining expense of these awards is expected to be recognized is approximately twenty months.

The intrinsic value of in the money stock option awards at the end of the period represents the Company’s closing stock price on the last trading day of the period in excess of the exercise price multiplied by the number of outstanding options.

Performance Stock Units

To better align the long-term interest of executives with growing U.S. practices, beginning in fiscal 2018, the Company granted long-term incentive awards in the form of time-based stock options and performance-based stock units ("Performance Stock Units" or "PSUs"). The PSUs earned will be determined over a three-year performance period. The primary performance metrics will be revenue and Adjusted EBITDA growth. Payouts based on revenue and adjusted EBITDA goals will be modified based on Total Shareholder Return ("TSR") performance relative to Enzo's peer group.

During the fiscal years ended 2020 and 2019, the Company awarded PSUs to its executive officers. These awards provide for the grant of shares of our common stock at the end of a three–year period based on the achievement of average revenue growth and adjusted EBITDA growth over that period. For the three and six months ended January 31, 2022, the Company accrued PSU compensation expense of $96 and $162, respectively. For the three and six months ended January 31, 2021, the Company did not accrue any compensation expense for these PSUs as the achievement of the growth goals was deemed not probable at that time. As of January 31, 2022, two former officers forfeited a total of 14,500 PSUs awarded in fiscal 2019.

The following table summarizes PSU's granted and outstanding as of January 31, 2022:

Grant Date	Total Grant	Forfeitures	Outstanding	Fair Market Value At Grant Date (000s)
10/15/2019	80,500	(14,500)	66,000	$ 222
10/19/2020	98,600	—	98,600	$ 207

Restricted Stock Units

The Company awarded restricted stock units ("RSUs") to our CEO who was appointed in November 2021. The award was for 260,000 RSUs which vest over three years on the anniversary of his hiring. The fair market value of the RSUs at the date of grant was $881. During the three and six months ended January 31, 2022, the Company recognized shared based compensation expense of $73 for these RSUs.

See Note 13 for more information with respect to the appointment of the CEO.

Note 11 – Segment reporting

The Company has three reportable segments: Products, Clinical Services and Therapeutics. The Company's Products segment develops, manufactures, and markets products to research and pharmaceutical customers. The Clinical Services segment provides diagnostic services to the health care community. The Company's Therapeutics segment conducts research and development activities for therapeutic drug candidates. The Company evaluates segment performance based on segment income (loss) before taxes. Costs excluded from segment income (loss) before taxes and reported as "Other" consist of corporate general and administrative costs which are not allocable to the three reportable segments. All intersegment activities are eliminated.

Legal and related expenses incurred to defend the Company's intellectual property, which may result in settlements recognized in another segment and other general corporate matters are considered a component of the Other segment. Legal and related expenses specific to other segments' activities are allocated to those segments. Management of the Company assesses assets on a consolidated basis only and therefore, assets by reportable segment have not been included in the reportable segments below. The accounting policies of the reportable segments are the same as those described in the summary of significant accounting policies.

The following financial information represents the operating results of the reportable segments of the Company:

Three months ended January 31, 2022	Clinical Services	Products	Therapeutics	Other	Consolidated
Revenues	$ 23,674	$ 10,372	—	—	$ 34,046
Operating costs and expenses:					
Cost of revenues	12,586	5,252	—	—	17,838
Research and development	89	711	20	—	820
Selling, general and administrative	6,811	3,039	—	4,616	14,466
Legal fee expense	148	—	—	2,697	2,845
Total operating costs and expenses	19,634	9,002	20	7,313	35,969
Operating income (loss)	4,040	1,370	(20)	(7,313)	(1,923)
Other income (expense):					
Interest, net	(3)	9	—	62	68
Other	5	3	—	(358)	(350)
Foreign exchange loss	—	(450)	—	—	(450)
Net income (loss)	$ 4,042	$ 932	$ (20)	$ (7,609)	$ (2,655)
Depreciation and amortization included above	$ 438	190	—	77	705
Share-based compensation included in above:					
Selling, general and administrative	16	1	—	650	667
Cost of revenues	12	—	—	—	12
Total	$ 28	1	—	650	679
Capital expenditures	$ 283	730	—	201	1,214

Three months ended January 31, 2021	Clinical Services	Products	Therapeutics	Other	Consolidated
Revenues – Services and Products	$ 23,988	$ 7,478	—	—	$ 31,466
Operating costs and expenses:					
Cost of revenues	11,708	3,937	—	—	15,645
Research and development	160	633	$ 13	—	806
Selling, general and administrative	6,425	2,593	16	$ 1,979	11,013
Legal and related expenses	71	1	—	2,220	2,292
Total operating costs and expenses	18,364	7,164	29	4,199	29,756
Operating income (loss)	5,624	314	(29)	(4,199)	1,710
Other income (expense):					
Interest	(4)	8	—	(53)	(49)
Other	14	2	—	—	16
Foreign exchange gain	—	625	—	—	625
Net income (loss)	$ 5,634	$ 949	$ (29)	$ (4,252)	$ 2,302
Depreciation and amortization included above	$ 381	$ 188	$ —	$ 66	$ 635
Share-based compensation included in above:					
Selling, general and administrative	10	16	—	136	162
Cost of revenues	14	—	—	—	14
Total	$ 24	$ 16	$ —	$ 136	$ 176
Capital expenditures	$ 341	$ 154	$ —	$ 11	$ 506

Six months ended January 31, 2022	Clinical Services	Products	Therapeutics	Other	Consolidated
Revenues – Services and Products	$ 43,415	$ 17,150	—	—	$ 60,565
Operating costs and expenses:					
Cost of revenues	23,789	9,322	—	—	33,111
Research and development	96	1,443	$ 25	—	1,564
Selling, general and administrative	12,812	6,134	—	$ 6,572	25,518
Legal and related expenses	205	13	—	3,909	4,127
Total operating costs and expenses	36,902	16,912	25	10,481	64,320
Operating income (loss)	6,513	238	(25)	(10,481)	(3,755)
Other income (expense):					
Interest	(5)	18	—	94	107
Other	54	5	—	(554)	(495)
Foreign exchange (loss)		(831)	—	—	(831)
Net income (loss)	$ 6,562	$ (570)	$ (25)	$ (10,941)	$ (4,974)
Depreciation and amortization included above	$ 856	$ 402	$ —	$ 148	$ 1,406
Share-based compensation included in above:					
Selling, general and administrative	36	1	—	842	879
Cost of revenues	16	—	—	—	16
Total	$ 52	$ 1	$ —	$ 842	$ 895
Capital expenditures	$ 593	$ 1,216	$ —	$ 438	$ 2,247

Six months ended January 31, 2021	Clinical Services	Products	Therapeutics	Other	Consolidated
Revenues – Services and Products	$ 45,211	$ 14,910	—	—	$ 60,121
Operating costs and expenses:					
Cost of revenues	24,703	7,700	—	—	32,403
Research and development	281	1,225	$ 46	—	1,552
Selling, general and administrative	12,523	5,038	33	$ 3,433	21,027
Legal and related expenses	96	6	—	2,830	2,932
Total operating costs and expenses	37,603	13,969	79	6,263	57,914
Operating income (loss)	7,608	941	(79)	(6,263)	2,207
Other income (expense):					
Interest	(10)	18	—	(108)	(100)
Other	29	4	—	—	33
Foreign exchange gain		461	—	—	461
Net income (loss)	$ 7,627	$ 1,424	$ (79)	$ (6,371)	$ 2,601
Depreciation and amortization included above	$ 790	$ 373	$ —	$ 132	$ 1,295
Share-based compensation included in above:					
Selling, general and administrative	19	32	—	265	316
Cost of revenues	27	—	—	—	27
Total	$ 46	$ 32	$ —	$ 265	$ 343
Capital expenditures	$ 881	$ 198	$ —	$ 44	$ 1,123

Note 12 Contingencies

The Company has brought cases in the United States District Court for the District of Delaware ("the Court"), alleging patent infringement against various companies. In 2017, the Court ruled that the asserted claims of the '180 and '405 Patents are invalid for nonenablement in cases involving Abbott, Becton Dickinson, Gen-Probe, Hologic, and Roche. That ruling was affirmed by the United States Court of Appeals for the Federal Circuit ("Federal Circuit") in June 2019. Enzo subsequently filed a petition for certiorari regarding the invalidity ruling for the '180 and '405 Patents in February 2020; the Supreme Court denied Enzo's petition on March 30, 2020. There are currently two cases that were originally brought by the Company in the Court. In those two cases, Enzo alleges patent infringement against Becton Dickinson Defendants and Roche Defendants, respectively. The claims in those cases involve the '197 Patent. Both cases are stayed.

In separate inter partes review proceedings before the U.S. Patent and Trademark Office (PTO) involving, among others, Becton Dickinson, certain claims of the '197 Patent were found unpatentable as anticipated or obvious and cancelled by the Patent Trial and Appeals Board ("Board"). Enzo appealed that decision to the Federal Circuit. On August 16, 2019, the Federal Circuit affirmed the Board's decision, finding that each of the challenged claims is unpatentable. The Company filed a petition for rehearing and rehearing en banc on October 30, 2019, which the Federal Circuit denied on December 4, 2019. The Company filed a petition for certiorari with the Supreme Court on March 3, 2020, which was denied.

In April 2019, the Company entered into an agreement with Hologic and Grifols, resolving litigation resulting from four cases originally brought by the Company in the Court. As a result, Enzo dismissed (1) a stayed patent litigation regarding the '180 and '197 Patent against Hologic in the Court; (2) the Consolidated Appeals against Gen-Probe and Hologic resulting from two cases filed in the Court, and (3) the Company's appeal in the litigation involving the '581 Patent that involved both Hologic and Grifols. As a result of the agreement with Hologic, Hologic withdrew from Enzo's Federal Circuit appeal of the Board's adverse rulings in the *inter partes* review proceedings regarding the '197 Patent filed by Hologic and joined by Becton Dickinson mentioned above.

On September 2, 2021, the PTO issued a non-final office action in an ex parte reexamination concerning the '197 Patent. In the office action, the PTO rejected certain claims of the '197 Patent under 35 U.S.C. § 102 and for nonstatutory double-patenting. Enzo's response to the office action is forthcoming.

On February 5, 2020, Harbert Discovery Fund, LP and Harbert Discovery Co-Investment Fund I, LP ("HDF") brought an action in the United States District Court for the Southern District of New York against the Company and five of its present or former Directors, Dr. Elazar Rabbani, Barry W. Weiner, Dr. Bruce A. Hanna, Dov Perlysky and Rebecca Fischer. On March 26, 2020, HDF filed an amended complaint against the same defendants. Count I asserted the Company violated Section 14(a) of the Securities and Exchange Act of 1934 and Rule 14a-9 thereunder by disseminating proxy materials that made two purportedly false statements: (a) a "January 28, 2020 Enzo press release that [purportedly] falsely stated that the Annual Meeting would be 'delayed' by action of the Board to February 25, 2020 when, in fact, the Annual Meeting would convene as planned on January 31, 2020", and (b) a "January 31 Enzo Proxy that [purportedly] falsely stated that the Proposed By-Law Amendment [to Article II, Section 9] would be approved if it received…a majority of the votes….rather than the required Supermajority Vote as provided for in the Charter. "Count II asserted a claim against the individual defendants under Section 20(a) of the Exchange Act premised on Enzo's purported violation of Section 14(a) and Rule 14a-9. Count III asserted the individual defendants breached their fiduciary duty, based on the same conduct and by seeking to entrench themselves. Finally, Count IV purported to assert a derivative claim for a declaration that any amendment to Article II, Section 2 requires the approval of 80% of Enzo's shareholders. On July 16, 2020, the day before the defendants' motion to dismiss was due, HDF asked the Court to dismiss their claims without prejudice. Defendants asked HDF to dismiss the claims with prejudice, but they refused. On July 17, 2020, the Court dismissed the claims without prejudice.

On November 27, 2020, the Company brought an action in the United States District Court for the Southern District of New York against Harbert Discovery Fund, LP, Harbert Discovery Co-Investment Fund I, LP, Harbert Fund Advisors, Inc., Harbert Management Corp. and Kenan Lucas (together, "Harbert"). The Company alleges Harbert made false and misleading representations, or omitted to state material facts necessary to make their statements not misleading, in proxy materials they disseminated seeking the election to the Company's Board of Directors at its 2019 Annual Meeting of two candidates they nominated, in violation of Section 14(a) of the 1934 Exchange Act and Rule 14a-9 thereunder. The Company seeks damages and injunctive relief. On February 15, 2021, Harbert filed a motion to dismiss. On March 8, 2021, the Company filed its opposition to that motion. On March 18, 2021 Harbert filed their reply in further support of the motion. On September 28, 2021, the Court denied the motion with respect to the Company's misrepresentation claims and granted it with respect to its omissions claim. On October 12, 2021, HDF filed six counterclaims against the Company and present and former directors Dr. Elazar Rabbani, Barry W. Weiner, Dr. Bruce A. Hanna, Dov Perlysky, Rebeca Fischer, Dr. Mary Tagliaferri and Dr. Ian B. Walters. HDF claims the Company made false and misleading representations in proxy materials it disseminated in connection with its 2019 Annual Meeting, in violation of Section 14(a) of the 1934 Exchange Act and Rule 14a-9 thereunder, and that the Company's directors at that time are liable under Section 20(a) of the Exchange Act for the Company's purported misstatements. HDF also claims that current and former Company directors breached their fiduciary duties by taking four corporate actions: (a) adjourning the 2019 meeting for 25 days; (b) purportedly causing the two Harbert candidates for director, who were elected at the 2019 Meeting, to resign in November 2020; (c) authorizing the November 27, 2020 Lawsuit; and (d) not accepting Dr. Rabbani's resignation as a director in March 2021. On November 10, 2021, the Company and the other counterclaim defendants moved to dismiss the counterclaims. On November 22, 2021, HDF filed its opposition to that motion. On November 26, 2021, the Company and the other counterclaim defendants filed their reply brief in further support of their motion to dismiss. On December 9, 2021, the Court granted the motion to dismiss except with respect to the counterclaim that Enzo violated the securities law by announcing on January 20, 2020 that it had decided to "delay" the 2019 annual meeting when it intended to convene and adjourn the meeting (the "Delay Statement") and the counterclaims that the Company's directors at that time violated Section 20(a) of the Exchange Act and breached their fiduciary duties in connection with the Delay Statement. The Court has allowed HDF to move for leave to replead with respect to its counterclaims that were dismissed.

There can be no assurance that the Company will be successful in any of these litigations. Even if the Company is not successful, management does not believe that there will be a significant adverse monetary impact on the Company. The Company is party to other claims, legal actions, complaints, and contractual disputes that arise in the ordinary course of business. The Company believes that any liability that may ultimately result from the resolution of these matters will not, individually or in the aggregate, have a material adverse effect on its financial position or results of operations.

As described in Note 3, third-party payers, including government programs, may decide to deny payment or recoup payments for testing that they contend was improperly billed or not medically necessary, against their coverage determinations, or for which they believe they have otherwise overpaid (including as a result of their own error), and we may be required to refund payments already received.

Note 13 – Appointment and Departure of Certain Officers

Effective November 8, 2021, Enzo appointed Hamid Erfanian as Chief Executive Officer and granted equity awards to him comprised of restricted stock units (RSUs) for 260,000 shares of the common stock of the Company and options to purchase 700,000 shares of common stock of the Company. The RSUs and options are scheduled to vest over three years, with one-third of the units vesting on each of the first three anniversaries of the grant date, subject to certain requirements, including Mr. Erfanian's continued service as an employee of the Company through the applicable vesting dates. The exercise price of the options is $3.39, the closing price of the Company's common stock on November 8, 2021, the grant date. The equity awards were granted outside of the Company's Amended and Restated 2011 Incentive Plan but generally have terms and conditions consistent with those set forth in that plan. The Company filed a Form S-8 covering these equity awards.

On January 21, 2022, Elazar Rabbani, Ph.D., the Company's co-founder and Chief Executive Officer, was provided a notice of termination of his employment by the Company. His termination will be effective April 21, 2022, which is 90 days from the date of notice. Dr. Rabbani remains a director of the Company. Dr. Rabbani is a party to an employment agreement with the Company, which entitles him to certain termination benefits, including severance pay, acceleration of vesting of share-based compensation, continuation of benefits and tax gross up certain of these termination benefits. Based on the terms of his employment agreement, the Company estimated and accrued a charge of $2,600, included in Selling, general and administrative expenses for the three and six months ended January 31, 2022. This charge is partially offset by the reversal of accrued annual bonuses made based on Dr. Rabbani's contract.

On February 25, 2022, Barry Weiner, the Company's co-founder and President, notified the Company that he was terminating his employment as President of the Company for "Good Reason" as defined in his employment agreement. The Company has accepted Mr. Weiner's termination effective April 19, 2022 but disagrees with Mr. Weiner's assertion regarding "Good Reason." As of January 31, 2022 and to date, the Company has not accrued any charges related to Mr. Weiner's termination.

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

The following discussion of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes and other information included elsewhere in this Quarterly Report on Form 10-Q.

Forward-Looking Statements

Our disclosure and analysis in this report, including but not limited to the information discussed in this Item 2, contain forward-looking information about our Company's financial results and estimates, business prospects and products in research and development that involve substantial risks and uncertainties. From time to time, we also may provide oral or written forward-looking statements in other materials we release to the public. Forward-looking statements give our current expectations or forecasts of future events. You can identify these statements by the fact that they do not relate strictly to historic or current facts. They use words such as "anticipate", "estimate", "expect", "project", "intend", "plan", "believe", "will", and other words and terms of similar meaning in connection with any discussion of future operations or financial performance.

In particular, these include statements relating to future actions, prospective products or product approvals, future performance or results of current and anticipated products, sales efforts, expenses, interest rates, foreign currency rates, intellectual property matters, the outcome of contingencies, such as legal proceedings, impacts of the COVID-19 pandemic and measures we have taken in response, and financial results. We cannot guarantee that any forward-looking statement will be realized, although we believe we have been prudent in our plans and assumptions. Achievement of future results is subject to risks, uncertainties and inaccurate assumptions. Should known or unknown risks or uncertainties materialize, or should underlying assumptions prove inaccurate, actual results could vary materially from past results and those anticipated, estimated or projected. As a result, investors are cautioned not to place undue reliance on any of our forward-looking statements. Investors should bear this in mind as they consider forward-looking statements. We do not assume any obligation to update or revise any forward-looking statement that we make, even if new information becomes available or other events occur in the future. We are also affected by other factors that may be identified from time to time in our filings with the Securities and Exchange Commission, some of which are set forth in Item 1A - Risk Factors in our Form 10-K filing for the July 31, 2021 fiscal year. You are advised to consult any further disclosures we make on related subjects in our Forms 10-Q, 8-K and 10-K reports to the Securities and Exchange Commission. Although we have attempted to provide a list of important factors which may affect our business, investors are cautioned that other factors may prove to be important in the future and could affect our operating results.

You should understand that it is not possible to predict or identify all such factors or to assess the impact of each factor or combination of factors on our business. Consequently, you should not consider any such list to be a complete set of all potential risks or uncertainties.

Impact of COVID-19 pandemic

COVID-19 has severely impacted the economy of the United States and other countries around the world. Federal, state and local governmental policies and initiatives designed to reduce the transmission of COVID-19 and its variants have resulted in, among other things, a significant reduction in physician office visits, the cancellation of elective medical procedures, customers of our products closing or severely curtailing their operations (voluntarily or in response to government orders), and the adoption of work-from-home or shelter-in-place policies. The COVID-19 impact on the Company's operations is consistent with the overall industry and publicly issued statements from competitors, partners, and vendors.

Enzo was granted FDA Emergency Use Authorizations (EUAs) and EUA extensions for our molecular diagnostic and serological testing for COVID-19 and related antibody testing options, for our sample collection kit, an innovative virus-inactivating specimen collection media that lessens transmission risks for healthcare providers and clinical laboratory personnel, for our use of pooled samples, and for our rapid extraction method. Other innovations include the development of more relevant positive controls for the tests, and improved sensitivity. During the fiscal year ended July 31, 2021, we experienced growing demand for COVID-19 testing and we made significant investments to expand our capacity throughout the period in order to satisfy the demand, which substantially increased our testing volumes.

While the Company anticipates that COVID-19 will continue to impact its business in the second half of fiscal 2022 and potentially beyond, the Company expects that increases in vaccination rates and booster shots, the development of new therapeutics and greater availability of rapid COVID-19 tests should result in a continued, significant decline in demand for COVID-19 Testing, in the Company's region. As a result, COVID-19 Testing demand in fiscal year 2022 is not anticipated to match 2021 levels. Global supply chain issues due to the pandemic continue to hamper both the manufacturing of products within the life science segment as well as testing capabilities in the clinical laboratory.

Overview

Enzo Biochem, Inc. (the "Company" "we", "our" or "Enzo") is an integrated diagnostics, clinical lab, and life sciences company focused on delivering and applying advanced technology capabilities to produce affordable reliable products and services that enable our customers to meet their clinical needs. Through a connection with the market, we provide advanced biotechnology solutions to the global community as affordable and flexible quality products and services. We develop, manufacture and sell our proprietary technology solutions and platforms to clinical laboratories, specialty clinics, researchers and physicians globally. Enzo's structure and business strategy represent the culmination of years of extensive planning and work. The Company has the unique ability to offer low cost, high performance products and services for diagnostic testing, which ideally positions us to capitalize on the reimbursement pressures facing diagnostic labs. Our pioneering work in genomic analysis coupled with our extensive patent estate and enabling platforms have positioned the Company to continue to play an important role in the rapidly growing molecular medicine marketplaces.

Enzo develops low cost diagnostic platform products and related services. Our platform development includes automation-compatible reagent systems and associated products for sample collection and processing through analysis. We develop affordable products and services to improve healthcare, one of the greatest challenges today. Enzo combines over 40 years of expertise in technology development with assay development capabilities and diagnostic testing services to create high performance, cost-effective, and open assay solutions. The ability to combine these assets in one company is unique. With our strong intellectual property portfolio integrated with assay development know-how, production, distribution, validation and services capabilities, we have enabled sustainable products and services for a market that is facing increasing pressure in costs and reimbursement

Enzo technology solutions and platforms and unique operational structure are designed to reduce overall healthcare costs for both government and private insurers. Our proprietary technology platforms reduces our customers' need for multiple, specialized instruments, and offer a variety of high throughput capabilities together with a demonstrated high level of accuracy and reproducibility. Our genetic test panels are focused on large and growing markets primarily in the areas of personalized medicine, women's health, infectious diseases and genetic disorders.

In the course of our research and development activities, we have built a substantial portfolio of intellectual property assets, comprised of approximately 472 issued patents worldwide and over 64 pending patent applications, along with extensive enabling technologies and platforms.

Below are brief descriptions of each of our operating segments (See Note 11 in the Notes to Consolidated Financial Statements):

Enzo Clinical Services is a clinical reference laboratory providing a wide range of clinical services to physicians, medical centers, other clinical labs and pharmaceutical companies. The Company believes having a Clinical Laboratory Improvement Amendments of 1988 ("CLIA") certified and College of American Pathologists ("CAP") accredited medical laboratory located in New York provides us the opportunity to more rapidly introduce cutting edge products and services to the clinical marketplace. Enzo Clinical Labs offers an extensive menu of molecular and other clinical laboratory tests and procedures used in patient care by physicians to establish or support a diagnosis, monitor treatment or medication, and search for an otherwise undiagnosed condition. Our laboratory is equipped with state-of-the-art communication and connectivity solutions enabling the rapid transmission, analysis and interpretation of generated data. We operate a full service clinical laboratory in Farmingdale, New York, a network of over 30 patient service centers throughout New York, New Jersey and Connecticut, two free standing "STAT" or rapid response laboratories in New York City and Connecticut, an in-house logistics department, and an information technology department. Under our license in New York State, we are able to offer testing services to clinical laboratories and physicians nationwide.

The Clinical Laboratory Services reporting unit is impacted by various risk factors, including among others, reduced reimbursements from third party payers for testing performed and from recent health care legislation. Despite the growth we have experienced in previous years, there can be no assurance future growth can be achieved. The introduction of new molecular and esoteric tests is expected to increase our revenue per test and could offset impacts from the above factors. The Company anticipates improved profitability with increased service volume.

Enzo Products manufactures, develops and markets products and tools for clinical research, drug development and bioscience research customers worldwide. Underpinned by broad technological capabilities, Enzo Life Sciences has developed proprietary products used in the identification of genomic information by laboratories around the world. Information regarding our technologies can be found in the "Core Technologies" section of our most recently filed Form 10-K. We are internationally recognized and acknowledged as a leader in the development, manufacturing validation and commercialization of numerous products serving not only the clinical research market, but also the life sciences markets in the fields of cellular analysis and drug discovery, among others. Our operations are supported by global operations allowing for the efficient marketing and delivery of our products around the world.

Enzo Therapeutics is a biopharmaceutical venture that has developed multiple novel approaches in the areas of gastrointestinal, infectious, ophthalmic and metabolic diseases, many of which are derived from the pioneering work of Enzo Life Sciences. Enzo Therapeutics has focused its efforts on developing treatment regimens for diseases and conditions for which current treatment options are ineffective, costly, and/or cause unwanted side effects. This focus has generated a clinical and preclinical pipeline, as well as numerous patents and patent applications.

Results of Operations
Three months ended January 31, 2022 compared to January 31, 2021
(in 000s)

Comparative Financial Data for the Three Months Ended January 31,

	2022	2021	Favorable (Unfavorable)	% Change
Revenues	$ 34,046	$ 31,466	$ 2,580	8
Operating costs and expenses:				
Cost of revenues	17,838	15,645	(2,193)	(14)
Research and development	820	806	(14)	**
Selling, general and administrative	14,466	11,013	(3,453)	(31)
Legal and related expenses	2,845	2,292	(553)	(24)
Total operating costs and expenses	35,969	29,756	(6,213)	(21)
Operating (loss) income	(1,923)	1,710	(3,633)	**
Other income (expense):				
Interest	68	(49)	117	**
Other	(350)	16	(366)	**
Foreign exchange (loss) gain	(450)	625	(1,075)	**
(Loss) income before taxes	$ (2,655)	2,302	(4,957)	

**** not meaningful**

Consolidated Results:

The “2022 period” and the “2021 period” refer to the three months ended January 31, 2022 and January 31, 2021, respectively.

Impacts of COVID-19

In July 2020, Enzo was granted FDA Emergency Use Authorization (EUA) for its molecular diagnostic and serological testing for COVID-19 and related antibody testing options. In January 2021, Enzo received an expansion of its Emergency Use Authorization (EUA) from the U.S. Food and Drug Administration (FDA) authorizing the use of pooled samples containing up to five individual swab specimens with the Company’s AMPIPROBE® SARS-Cov-2 Test System utilizing tests on three different platforms including Enzo’s proprietary GENFLEX® automated high-throughput platform. In July 2021, Enzo received an expansion of its FDA Emergency Use Authorization (EUA) for the Company’s rapid extraction method on its proprietary test system.

At this time, the long-term significance of the positive impact from COVID-19 testing and the Company’s proprietary product offerings on revenue, profitability and cash flow is still uncertain. We experienced a sequential quarter increase in Clinical laboratory services revenues of $3.9 million in the 2022 period compared to the first quarter ended October 31, 2021 based on increased COVID-19 testing for academic institution testing due to the rise of the COVID-19 Omicron variant which occurred during the three months ended January 31, 2022.

While the Company anticipates that COVID-19 will continue to impact its business in the second half of fiscal 2022 and potentially beyond, the Company expects that increases in vaccination rates and booster shots, the development of new therapeutics and greater availability of rapid COVID-19 tests should result in a continued, significant decline in demand for COVID-19 Testing, in the Company’s region. As a result, COVID-19 Testing demand in fiscal year 2022 is not anticipated to match 2021 levels, It is difficult to forecast the continued effects, duration, and severity of the ongoing COVID-19 pandemic, including the impact on our personnel, supplies, liquidity, collections, and the impact of past or future actions or omissions by the Company or governments in response to the COVID-19 pandemic including, but not limited to, emerging government vaccine and testing mandates, and the availability, accuracy and timeliness of delivery of any tests that the Company develops, collaborates on or provides for the detection of COVID-19.

Clinical services revenues for the 2022 period were $23.7 million compared to $24.0 million in the 2021 period, a decrease of $0.3 million or 1%. Revenues from COVID-19 testing represented 56% and 57% of Clinical revenues in the 2022 and 2021 periods, respectively. Diagnostic testing volume measured by the total number of accessions for all our testing services decreased approximately 8% period over period, resulting in the 2022 period's revenue decrease.

Estimated collection amounts are subject to the complexities and ambiguities of third-party payer billing, reimbursement regulations and claims processing, as well as issues unique to Medicare and Medicaid programs, and require us to consider the potential for adjustments when estimating variable consideration in the recognition of revenue in the period that the related services are rendered. In 2014, Congress passed the U.S. Protecting Access to Medicare Act of 2014 (PAMA), which included substantial changes to the way in which clinical laboratory services are paid under Medicare. Beginning in 2018, Medicare payments for clinical laboratory services are paid based upon the volume-weighted median of private payer rates as reported by certain clinical laboratories across the US, replacing the previous system which was based upon fee schedules derived from historical charges for clinical laboratory tests. We estimate that the effect of PAMA directly negatively impacted reimbursements from Medicare and Medicaid in the 2022 and 2021 periods by $0.3 million and $0.4 million, respectively.

Product revenues were $10.4 million in the 2022 period and $7.5 million in the 2021 period, an increase of $2.9 million or 39%. During the 2022 period, we completed a bulk sale of a GMP reagent to a large industrial customer in the US in the amount of $2.8 million. It is not known at this time if there will be repeat sales to this customer. Excluding this sale, a slight increase in sales in the US market offset smaller declines in each of the European and Asia Pacific markets.

The cost of Clinical Services was $12.6 million in the 2022 period and $11.7 million in the 2021 period, an increase of $0.9 million or 7%. During the 2022 period, we incurred greater costs for reagents used in testing other than COVID-19 and for personnel costs related to COVID-19 testing, together amounting to $1.8 million, which was partially offset by reduced outside reference testing costs for COVID-19 and other testing of $0.9 million by utilizing our internal manufacturing capabilities compared to the 2021 period. The gross profit margin on Clinical Services revenues in the 2022 period was approximately 47% versus 51% in the 2021 period, due to the impact of the higher reagent and personnel costs.

The cost of Product revenues was $5.3 million in the 2022 period and $3.9 million in the 2021 period, an increase of $1.3 million or 33% and in line with the increase in revenues. The gross profit margin on Products was 49% in the 2022 period and 47% in the 2021 period.

Research and development expenses were $0.8 million in both the 2022 and 2021 periods, incurred primarily in the Life Sciences Products segment. Research activities include lab developed tests (LDTs) for sexually transmitted infection (STI) panels and the detection of COVID-19.

Selling, general and administrative expenses were $14.5 million during the 2022 period versus $11.0 million during the 2021 period, an increase of $3.5 million or 32%. The Clinical Services expense increased $0.4 million due to increased compensation cost for information technology and increased facility costs. The Life Sciences Products expense increased $0.4 million during the 2022 period for marketing expenses such as website ads and product promotions and campaigns. The Other segment expense increased $2.6 million, net during the 2022 period and includes compensation expense (on a net basis) of $1.7 million due to severance and other discrete employment matters.

Legal and related expenses were $2.8 million during the 2022 period compared to $2.3 million in the 2021 period, an increase of $0.5 million or 24%. During the 2022 period, we incurred higher legal activities associated with strategic initiatives and other corporate matters.

Interest income, net was less than $0.1 million in the 2022 period versus interest expense, net of less than $0.1 million in the 2021 period, a favorable variance of $0.1 million. During the 2022 period, we earned interest on marketable securities in bond funds, net of interest expense primarily on a mortgage. During the 2021 period, we were not invested in interest earning marketable securities, earned insignificant interest on cash and cash equivalents, and incurred interest expense on the mortgage.

Other expense in the 2022 period was $0.3 million compared to slight income in the 2021 period, resulting in an unfavorable variance of approximately $0.4 million. During the 2022 period, the primary component of the expense was unrealized losses of $0.3 million on our marketable securities in bond funds.

The foreign currency revaluation loss recognized by the Life Sciences Products segment during the 2022 period was $0.5 million compared to gain of $0.6 million in the 2021 period, resulting in an unfavorable variance of $1.1 million. The 2022 period revaluation loss was due to depreciation of the Euro, British pound and Swiss franc versus the U.S. dollar as of the end of the period compared to its start, ranging from 1.5% to 3.2%. The revaluation gain in the 2021 period was due to appreciation of the Euro, British pound and Swiss franc versus the U.S. dollar as of the end of that period compared to its start, ranging from 2.9% to 5.8%.

Results of Operations
Six months ended January 31, 2022 compared to January 31, 2021
(in 000s)

Comparative Financial Data for the Six Months Ended January 31,

	2022	2021	Favorable (Unfavorable)	% Change
Revenues	$ 60,565	$ 60,121	$ 444	1
Operating costs and expenses:				
Cost of revenues	33,111	32,403	(708)	(2)
Research and development	1,564	1,552	(12)	(1)
Selling, general and administrative	25,518	21,027	(4,491)	(21)
Legal and related expenses	4,127	2,932	(1,195)	(41)
Total operating costs and expenses	64,320	57,914	(6,406)	(11)
Operating (loss) income	(3,755)	2,207	(5,962)	**
Other income (expense):				
Interest	107	(100)	207	**
Other	(495)	33	(528)	**
Foreign exchange (loss) gain	(831)	461	(1,292)	**
Net (loss) income	$ (4,974)	$ 2,601	$ (7,575)	**

**** not meaningful**

Consolidated Results:

The “2022 period” and the “2021 period” refer to the six months ended January 31, 2022 and January 31, 2021, respectively, which represent the first two quarters of the Company’s fiscal year ending July 31.

Clinical services revenues for the 2022 period were $43.4 million compared to $45.2 million in the 2021 period, a decrease of $1.8 million or 4%. Revenues from COVID-19 testing represented 52% and 48% of Clinical revenues in the 2022 and 2021 periods, respectively. Diagnostic testing volume measured by the total number of accessions for all our testing services decreased approximately 7% period over period, which resulted in the 2022 period’s revenue decrease. While COVID 19 testing volume increased, patient visits to doctor offices continue to decline due to patient hesitancy as a result of the pandemic and the variants.

Estimated collection amounts are subject to the complexities and ambiguities of third-party payer billing, reimbursement regulations and claims processing, as well as issues unique to Medicare and Medicaid programs, and require us to consider the potential for adjustments when estimating variable consideration in the recognition of revenue in the period that the related services are rendered. In 2014, Congress passed the U.S. Protecting Access to Medicare Act of 2014 (PAMA), which included substantial changes to the way in which clinical laboratory services are paid under Medicare. Beginning in 2018, Medicare payments for clinical laboratory services are paid based upon the volume-weighted median of private payer rates as reported by certain clinical laboratories across the US, replacing the previous system which was based upon fee schedules derived from historical charges for clinical laboratory tests. We estimate that the effect of PAMA directly negatively impacted reimbursements from Medicare and Medicaid in the 2022 and 2021 periods by $0.6 million and $0.8 million, respectively.

Product revenues were $17.2 million in the 2022 period and $14.9 million in the 2021 period, an increase of $2.2 million or 15%. During the 2022 period, we completed a bulk sale of a GMP reagent to a large industrial customer in the US in the amount of $2.8 million. It is not known at this time if there will be repeat sales to this customer. Excluding this sale, a slight increase in sales in the US market was not enough to offset larger declines in each of the European and Asia Pacific markets. During the beginning of the 2022 period, we completed the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and moved the operations to our Farmingdale, NY campus. As a result of the winding down, we experienced some disruption in the manufacture and distribution of our products during the beginning of the period, and experienced delays in product availability and fulfillment, which particularly impacted our customers in Europe. These disruptions were resolved by the end of the period.

The cost of Clinical Services was $23.8 million in the 2022 period and $24.7 million in the 2021 period, a decrease of $0.9 million or 4%, in line with the decline in revenues. During the 2022 period, we reduced our outside reference testing costs for COVID-19 by approximately $2.8 million by utilizing our internal manufacturing capabilities, thereby reducing some of our reliance on testing and reagents sourced from third parties, as compared to the 2021 period. The reduction in outside reference testing costs and reagents was partially offset by greater costs for reagents used in testing other than COVID-19 and by higher personnel costs related to COVID-19 testing, totaling $1.9 million. The gross profit margin on Clinical Services revenues in both the 2022 and 2021 periods was approximately 45%.

The cost of Product revenues was $9.3 million in the 2022 period and $7.7 million in the 2021 period, an increase of $1.6 million or 21%. The gross profit margin on Products was 46% in the 2022 period and 48% in the 2021 period. During the 2022 period, we completed the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and moved the operations to our Farmingdale, NY campus. As a result of the operational transition, there was a temporary increase and overlap in manufacturing headcount and overhead costs during the beginning of the period.

Research and development expenses were $1.6 million in both the 2022 and 2021 periods, incurred primarily in the Life Sciences Products segment. Research activities include lab developed tests (LDTs) for sexually transmitted infection (STI) panels and the detection of COVID-19.

Selling, general and administrative expenses were $25.5 million during the 2022 period versus $21.0 million during the 2021 period, an increase of $4.5 million or 21%. The Clinical Services expense increased $0.3 million primarily due to increased facility costs. The Life Sciences Products expense increased $1.1 million during the 2022 period, of which $0.4 million was due to employee severance expenses associated with the completion of the winding down and closure of our manufacturing and distribution center in Ann Arbor, MI and the cost of moving its operations to our Farmingdale, NY campus at the beginning of the period. The segment also experienced an increase in marketing expenses such as website ads, promotions and campaigns, trade shows, and an increase in sales and marketing headcount. The Other segment expense increased $3.1 million during the 2022 period and includes compensation expense (on a net basis) of $1.7 million due to severance and other discrete employment matters.

Legal and related expenses were $4.1 million on a net basis during the 2022 period compared to $2.9 million in the 2021 period, an increase of $1.2 million or 41%. During the 2022 period, we incurred higher legal expense for activities associated with strategic initiatives and other corporate matters, which were partially offset by the recognition of a credit of $1.0 million associated with a fee settlement and release agreement with a former legal services provider.

Interest income, net was $0.1 million in the 2022 period versus interest expense, net of $0.1 million in the 2021 period, a favorable variance of $0.2 million. During the 2022 period, we earned interest on marketable securities in bond funds, net of interest expense primarily on a mortgage. During the 2021 period, we were not invested in interest earning marketable securities, earned insignificant interest on cash and cash equivalents, and incurred interest expense on the mortgage.

Other (expense) income in the 2022 period was ($0.5) million and nil in the 2021 period, an unfavorable variance of $0.5 million. During the 2022 period, the primary component of the expense was unrealized losses of $0.5 million on our marketable securities in bond funds.

The foreign currency revaluation (loss) recognized by the Life Sciences Products segment during the 2022 period was $(0.8) million compared to a gain of $0.5 million in the 2021 period, an unfavorable variance of $1.3 million. The 2022 period revaluation loss was due to depreciation of the Euro, British pound and Swiss franc versus the U.S. dollar as of the end of the period compared to its start, ranging from 2.7% to 5.7%. The revaluation gain in the 2021 period was due to appreciation of the Euro, British pound and Swiss franc versus the U.S. dollar as of the end of that period compared to its start, ranging from 2.1% to 4.4%.

Liquidity and Capital Resources

At January 31, 2022, the Company had cash and cash equivalents and marketable securities totaling $33.6 million of which $0.7 million was in foreign accounts, as compared to cash and cash equivalents of $43.5 million, of which $0.9 million was in foreign accounts at July 31, 2021. It is the Company's current intent to permanently reinvest these foreign funds outside of the United States, and its current plans do not demonstrate a need to repatriate them to fund its United States operations.

The Company had working capital of $40.6 million at January 31, 2022, compared to $44.5 million at July 31, 2021, a decrease of $3.9 million. The decrease in working capital was due to the use of cash and cash equivalents to fund operations and capital expenditures.

Net cash used in operating activities during the 2022 period was approximately $6.7 million, compared to $2.1 million during the 2021 period, an unfavorable variance of $4.6 million. The net cash used in the 2022 period was due to the net loss of $5.0 million, a net increase of $5.6 million in operating assets, primarily accounts receivable and inventories, and a net decrease of $0.1 million in operating liabilities, primarily accounts payable. These uses were partially offset by non-cash expense adjustments of $4.0 million. The net cash used in the 2021 period was due to the net income of $2.6 million and net non-cash expenses of approximately $1.6 million which were more than offset by a net increase of $6.2 million in operating assets and liabilities including, but not limited to, accounts receivable and inventories

Net cash used in investing activities during the 2022 period was approximately $2.3 million as compared to $1.1 million in the 2021 period, an increase of $1.2 million and in both periods primarily represented capital expenditures to support and grow our existing operations, including investments in laboratory equipment, information technology, and the buildout of our Farmingdale campus.

Cash used in financing activities in the 2022 was $0.1 million and in the 2021 period was $0.2 million for payments related to a mortgage and finance leases.

As of January 31, 2022 we had a mortgage principal balance of $4.1 million entered into for the purchase of a building facility, which bears a fixed interest rate of 5.09% per annum. It requires monthly mortgage payments of $30. Our obligations under the mortgage agreement are secured by the facility and by a $1,000 cash collateral deposit with the mortgagee as additional security, which is included in other assets as of January 31, 2022. Effective October 19, 2020, the Company and the mortgagee agreed to a covenant restructure whereby the mortgagee waived the Company's financial ratio covenant for the fiscal period ended July 31, 2020 and modified the mortgage to replace a financial ratio covenant with a liquidity covenant. The liquidity covenant required that we own and maintain at all times, and throughout the remaining term of the loan, at least $25 million of liquid assets, defined as time deposits, money market accounts and commercial paper, and obligations issued by the U.S. government or any of its agencies. The cash collateral agreement was also modified to require compliance with the liquidity covenant for two consecutive fiscal years before the collateral is released back to us. As of July 31, 2021, the Company was in compliance with the financial and liquidity covenants in effect at that time related to this mortgage.

Effective September 29, 2021, the Company and the mortgagee agreed to further covenant restructuring whereby (a) the liquidity covenant was reduced to 150% of the loan principal (or approximately $6 million at January 31, 2022) from $25 million previously, and (b) the collateral requirement would be increased from $0.75 million to $1.0 million. The Company was in compliance as to the liquidity covenant as of January 31, 2022 and increased the collateral deposit to $1.0 million in November.

Contractual Obligations

There have been no material changes to our Contractual Obligations as reported in our Form 10-K for the fiscal year ended July 31, 2021. Management is not aware of any material claims, disputes or settled matters concerning third party reimbursement that would have a material effect on our financial statements, except as disclosed in Note 12 to the Consolidated Financial Statements.

Off-Balance Sheet Arrangements

The Company does not have any "off-balance sheet arrangements" as such term is defined in Item 303(a)(4) of Regulation S-K.

Critical Accounting Policies

General and estimates

The Company's discussion and analysis of its financial condition and results of operations are based upon Enzo Biochem, Inc.'s consolidated financial statements, certain information and footnote disclosure, normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States, have been condensed or omitted, as permitted under rules promulgated by the Security and Exchange Commission. The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses. These estimates and judgments also affect related disclosure of contingent assets and liabilities.

On an on-going basis, we evaluate our estimates, including those related to contractual expense, allowance for uncollectible accounts, inventory, operating lease liabilities, goodwill and income taxes. The Company bases its estimates on experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Revenues – Clinical Services

Contractual Adjustment

The Company's estimate of contractual adjustment is based on significant assumptions and judgments, such as its interpretation of payer reimbursement policies, and bears the risk of change. The estimation process is based on the experience of amounts approved as reimbursable and ultimately settled by payers, versus the corresponding gross amount billed to the respective payers. The contractual adjustment is an estimate that reduces gross revenue, based on gross billing rates, to amounts expected to be approved and reimbursed.

Gross billings are based on a standard fee schedule we set for all third-party payers, including Medicare, HMOs and managed care. The Company adjusts the contractual adjustment estimate quarterly, based on its evaluation of current and historical settlement experience with payers, industry reimbursement trends, and other relevant factors. The other relevant factors that affect our contractual adjustment include the monthly and quarterly review of: 1) current gross billings and receivables and reimbursement by payer, 2) current changes in third party arrangements and 3) the growth of in-network provider arrangements and managed care plans specific to our Company.

Our clinical business is primarily dependent upon reimbursement from third-party payers, such as Medicare (which principally serves patients 65 and older) and insurers. We are subject to variances in reimbursement rates among different third-party payers, as well as constant changes of reimbursement rates. Changes that decrease reimbursement rates or coverage would negatively impact our revenues. The number of individuals covered under managed care contracts or other similar arrangements has grown over the past several years and may continue to grow in the future. In addition, Medicare and other government healthcare programs continue to shift to managed care. These trends will continue to reduce our revenues from these programs.

During the three months ended January 31, 2022 and 2021, the contractual adjustment percentages, determined using current and historical reimbursement statistics, was 80.5% and 81.7% respectively, of gross billings. During the six months ended January 31, 2022 and 2021, the contractual adjustment percentages, determined using current and historical reimbursement statistics, was 82.1% and 82.7% respectively, of gross billings. In general, the Company believes a decline in reimbursement rates or a shift to managed care or similar arrangements may be offset by the positive impact of an increase in the number of tests we perform. However, there can be no assurance that we can increase the number of tests we perform or that if we do increase the number of tests we perform, that we can maintain that higher number of tests performed, or that an increase in the number of tests we perform would result in increased revenue.

The Company estimates (by using a sensitivity analysis) that each 1% point change in the contractual adjustment percentage could result in a change in clinical services revenues of approximately $2.4 million and $2.6 million for the six months periods ended January 31, 2022 and 2021 respectively, and a change in the net accounts receivable of approximately $0.5 million as of January 31, 2022.

Our clinical services financial billing system records gross billings using a standard fee schedule for all payers and does not record contractual adjustment by payer at the time of billing. Therefore, we are unable to quantify the effect contractual adjustments recorded during the current period have on revenue recorded in a previous period. However, we can reasonably estimate our monthly contractual adjustment to revenue on a timely basis based on our quarterly review process, which includes:

- an analysis of industry reimbursement trends;
- an evaluation of third-party reimbursement rates changes and changes in reimbursement arrangements with third-party payers;
- a rolling monthly analysis of current and historical claim settlement and reimbursement experience statistics with payers; and
- an analysis of current gross billings and receivables by payer.

Accounts Receivable

Accounts receivable are reported at realizable value, net of allowances for doubtful accounts, which is estimated and recorded in the period of the related revenue.

The following is a table of the Company's net accounts receivable by services and by products. Net receivables for Clinical Services are detailed by billing category and as a percent to its total net receivables. At January 31, 2022 and July 31, 2021, approximately 60% of the Company's net accounts receivable relates to its Clinical Laboratory Services business, which operates in the New York, New Jersey and Connecticut medical communities.

The accounts receivable balance for Life Science products includes foreign receivables of $1.2 million or 19% and $1.4 million or 33% of its total receivables as of January 31, 2022 and July 31, 2021, respectively.

Net accounts receivable

Billing category	As of January 31, 2022		As of July 31, 2021	
Clinical Services				
Third party payers	$ 4,034	44%	$ 2,195	36%
Patient self-pay	2,798	31	2,007	33
Medicare	1,020	11	1,122	19
HMOs	1,316	14	692	12
Total Clinical Services	9,168	100%	6,016	100%
Total Life Sciences	6,148		4,182	
Total accounts receivable - net	$ 15,316		$ 10,198	

The Company's ability to collect outstanding receivables from third party payers is critical to its operating performance and cash flows. The primary collection risk lies with uninsured patients or patients for whom primary insurance has paid but a patient portion remains outstanding. The Company also assesses the current state of its billing functions in order to identify any known collection or reimbursement issues in order to assess the impact, if any, on the allowance estimates, which involves judgment. The collection of these receivables is not guaranteed from Third Party Payers.

The Company believes that the collectability of its receivables is directly linked to the quality of its billing processes, most notably, those related to obtaining the accurate patient information in order to bill effectively for the services provided. Should circumstances change (e.g. shift in payer mix, decline in economic conditions or deterioration in aging of receivables), our estimates of net realizable value of receivables could be reduced by a material amount. As of January 31, 2022, approximately 27% of Clinical Labs receivables are from one provider whose programs are included in the "Third-party payers" and "Health Maintenance Organizations" ("HMOs") categories.

Billing for clinical services is complicated because of many factors, especially: the differences between our standard gross fee schedule for all payers and the reimbursement rates of the various payers we deal with, disparity of coverage and information requirements among the various payers, and disputes with payers as to which party is responsible for reimbursement.

Income Taxes

The Company accounts for income taxes under the liability method of accounting for income taxes. Under the liability method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. The liability method requires that any tax benefits recognized for net operating loss carry forwards and other items be reduced by a valuation allowance where it is not more likely than not the benefits will be realized in the foreseeable future. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Under the liability method, the effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. It is the Company's policy to provide for uncertain tax positions, if any, and the related interest and penalties based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. To the extent the Company prevails in matters for which a liability for an unrecognized tax benefit is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

Inventory

The Company values inventory at the lower of cost (first-in, first-out) or net realizable value, which approximates market. Work-in-process and finished goods inventories consist of material, labor, and manufacturing overhead. Write downs of inventories to net realizable value are based on a review of inventory quantities on hand and estimated sales forecasts based on sales history and anticipated future demand. Unanticipated changes in demand could have a significant impact on the value of our inventory and require additional write downs of inventory which would impact our results of operations.

Leases - right of use assets and operating lease liabilities

The Company determines if an arrangement is or contains a lease at contract inception. The Company leases buildings, office space, patient service centers, and equipment primarily through operating leases, and equipment through a limited number of finance leases. Generally, a right-of-use asset, representing the right to use the underlying asset during the lease term, and a lease liability, representing the payment obligation arising from the lease, are recognized on the balance sheet at lease commencement based on the present value of the payment obligation. For operating leases, expense is recognized on a straight-line basis over the lease term. For finance leases, interest expense on the lease liability is recognized using the effective interest method and amortization of the right-of-use asset is recognized on a straight-line basis over the shorter of the estimated useful life of the asset or the lease term. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet; the Company recognizes lease expense for these leases on a straight-line basis over the lease term. The Company primarily uses its incremental borrowing rate in determining the present value of lease payments as the Company's leases generally do not provide an implicit rate. The Company has lease agreements with (i) right-of-use asset payments and (ii) non-lease components (i.e. payments related to maintenance fees, utilities, etc.,) which have generally been combined and accounted for as a single lease component.

On at least an annual basis, we perform a review of our business to determine if events or changes in circumstances have occurred that indicate that it is more likely than not that the carrying amount of an asset group, including long lived assets such as right of use assets, is not recoverable. If such events or changes in circumstances were deemed to have occurred, we would perform an impairment test of such long lived assets and record any noted impairment loss.

Goodwill, Intangible and long-lived assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the net assets acquired. Intangible assets (exclusive of patents), arose primarily from acquisitions, and primarily consist of customer relationships, trademarks, licenses, and website and database content. These finite-lived intangible assets are amortized according to their estimated useful lives, which range from 4 to 15 years.

The Company tests goodwill annually as of the first day of the fourth quarter, or more frequently if indicators of potential impairment exist. In assessing goodwill for impairment, the Company has the option to first perform a qualitative assessment to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If the Company determines that it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, the Company is not required to perform any additional tests in assessing goodwill for impairment. However, if the Company concludes otherwise or elects not to perform the qualitative assessment, then it identifies the reporting units and compares the fair value of each of these reporting units to their respective carrying amount. If the carrying amount of the reporting unit is less than its fair value, no impairment exists. If the carrying amount of the reporting unit is higher than its fair value, the impairment charge is the amount by which the carrying amount exceeds its fair value, not to exceed the total amount of goodwill allocated to the reporting unit.

The Company reviews the recoverability of the carrying value of long-lived assets (including finite lived intangible assets) of an asset or asset group for impairment annually as of the end of the fiscal year, or more frequently if indicators of potential impairment exist.

Should indicators of impairment exist, the carrying values of the assets are evaluated in relation to the operating performance and future undiscounted cash flows of an asset or asset group. The net book value of the long-lived asset is adjusted to fair value if its expected future undiscounted cash flow is less than its book value.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risk from changes in foreign currency exchange rates with respect to the operations of our foreign subsidiaries and which impact our results of operations and financial position. See Item 1A. Risk Factors section of the Form 10-K for the fiscal year ended July 31, 2021. We do not currently engage in any hedging or market risk management tools.

Foreign Currency Exchange Rate Risk

The financial reporting of our non-U.S. subsidiaries is denominated in currencies other than the U.S. dollar. Since the functional currency of our non-U.S. subsidiaries is the local currency, foreign currency translation adjustments are accumulated as a component of accumulated other comprehensive income in stockholders' equity. Assuming a hypothetical increase of 10% in the value of the U.S. dollar versus foreign currencies at January 31, 2022, our assets and liabilities would decrease by $0.4 million and $0.1 million, respectively, and our net revenues and net income (loss) would decrease by $0.9 million and $0.3 million, respectively, on an annual basis.

We also maintain intercompany balances and loans with subsidiaries in different local currencies. These amounts are at risk of foreign exchange losses if exchange rates fluctuate. Assuming a hypothetical increase of 10% in the value of the U.S. dollar versus foreign currencies, our pre-tax earnings (loss) would be unfavorably impacted by approximately $1.9 million on an annual basis.

Interest Rate Risk

As of January 31, 2022, we have fixed interest rate financing on a building mortgage and equipment finance leases.

Item 4. Controls and Procedures

(a) Evaluation of Disclosure Controls and Procedures

As of the end of the period covered by this report, the Company's management conducted an evaluation (as required under Rules 13a-15(b) and 15d-15(b) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) of the Company's "disclosure controls and procedures" (as such term is defined under the Exchange Act), under the supervision and with the participation of the principal executive officer and the principal financial officer. Based on this evaluation, the principal executive officer and the principal financial officer concluded that the Company's disclosure controls and procedures are effective as of the end of the period covered by this report. Notwithstanding the foregoing, a control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that it will detect or uncover failures within the Company to disclose material information otherwise required to be set forth in the Company's periodic reports.

(b) Changes in Internal Controls over Financial Reporting

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

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

There have been no other material developments with respect to previously reported legal proceedings discussed in the annual report on Form 10-K, as amended for the fiscal year ended July 31, 2021 filed with the Securities and Exchange Commission, other than as noted in Note 12 to the Consolidated Financial Statements as of January 31, 2022.

Item 1A. Risk Factors

There have been no material changes from the risk factors disclosed in Part 1, Item 1A of the Company's Annual Report on Form 10-K for the fiscal year ended July 31, 2021.

Item 6. Exhibits

Exhibit No.	Exhibit
31.1	Certification of Hamid Erfanian pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of David Bench pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of Hamid Erfanian pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of David Bench pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101. INS*	Inline XBRL Instance 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 Extension 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).

* XBRL (Extensible Business Reporting Language) information is being furnished and not filed for purposes of Sections 11 and 12 of the Securities Act of 1933 and Section 18 of the Securities Exchange Act of 1934.

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.

ENZO BIOCHEM, INC.
(Registrant)

Date: March 14, 2022

by: /s/ David Bench
Chief Financial Officer and
Principal Accounting Officer

EXHIBIT 31.1

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

I, Hamid Erfanian, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Enzo Biochem, Inc. (the "registrant").

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 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: March 14, 2022

By: /s/ Hamid Erfanian
Hamid Erfanian
Chief Executive Officer

EXHIBIT 31.2

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

I, David Bench, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Enzo Biochem, Inc. (the "registrant").

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 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: March 14, 2022

By: /s/ David Bench
David Bench
Chief Financial Officer and Principal Accounting Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
TITLE 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Enzo Biochem, Inc., and Subsidiaries ("the Company") on Form 10-Q for the period ended January 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Hamid Erfanian, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 14, 2022

By: /s/ Hamid Erfanian
Hamid Erfanian
Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
TITLE 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Enzo Biochem, Inc., and Subsidiaries ("the Company") on Form 10-Q for the period ended January 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David Bench, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 14, 2022

By: /s/ David Bench
David Bench
Chief Financial Officer and Principal Accounting Officer