

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

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FORM 12b-25

NOTIFICATION OF LATE FILING

(Check one):  Form 10-K  Form 20-F  Form 11-K  Form 10-Q  Form 10-D  Form N-CEN  Form N-CSR

For Period Ended: **July 31, 2023**

Transition Report on Form 10-K

Transition Report on Form 20-F

Transition Report on Form 11-K

Transition Report on Form 10-Q

For the Transition Period Ended:

*Read Instruction (on back page) Before Preparing Form. Please Print or Type.*  
**Nothing in this form shall be construed to imply that the Commission has verified any information contained herein.**

If the notification relates to a portion of the filing checked above, identify the Item(s) to which the notification relates:

**PART I — REGISTRANT INFORMATION**

Enzo Biochem, Inc

Full Name of Registrant

Former Name if Applicable

81 Executive Blvd. Suite 3

Address of Principal Executive Office (*Street and Number*)

Farmingdale, NY 11735

City, State and Zip Code

**PART II — RULES 12b-25(b) AND (c)**

If the subject report could not be filed without unreasonable effort or expense and the registrant seeks relief pursuant to Rule 12b-25(b), the following should be completed. (Check box if appropriate)

- (a) The reasons described in reasonable detail in Part III of this form could not be eliminated without unreasonable effort or expense;
- (b) The subject annual report, semi-annual report, transition report on Form 10-K, Form 20-F, Form 11-K, Form N-CEN, or Form N-CSR, or portion thereof, will be filed on or before the fifteenth calendar day following the prescribed due date; or the subject quarterly report of transition report on Form 10-Q, or subject distribution report on Form 10-D, or portion thereof, will be filed on or before the fifth calendar day following the prescribed date; and
- (c) The accountant's statement or other exhibit required by Rule 12b-25(c) has been attached if applicable.

**PART III — NARRATIVE**

State below in reasonable detail the reasons why Forms 10-K, 20-F, 11-K, 10-Q, 10-D, N-SAR, N-CSR, or the transition report portion thereof, could not be filed within the prescribed time period.

**Enzo Biochem, Inc.'s Form 10-K for the fiscal year period ended July 31, 2023 cannot be filed within the prescribed time period without unreasonable effort or expense. The Company expects to file the Form 10-K on or before November 9, 2023.**

SEC 1344 (03-05) **Persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.**

(Attach extra Sheets if Needed)

**PART IV — OTHER INFORMATION**

(1) Name and telephone number of person to contact in regard to this notification

Patricia Eckert  
(Name)

631  
(Area Code)

755-5500  
(Telephone Number)

(2) Have all other periodic reports required under Section 13 or 15(d) of the Securities Exchange Act of 1934 or Section 30 of the Investment Company Act of 1940 during the preceding 12 months or for such shorter period that the registrant was required to file such report(s) been filed? If answer is no, identify report(s). Yes  No

(3) Is it anticipated that any significant change in results of operations from the corresponding period for the last fiscal year will be reflected by the earnings statements to be included in the subject report or portion thereof? Yes  No

If so, attach an explanation of the anticipated change, both narratively and quantitatively, and, if appropriate, state the reasons why a reasonable estimate of the results cannot be made.

Enzo Biochem, Inc.  
Form 12b-25  
Part IV – Other Information (3)  
Form 10-K for period ended July 31, 2023

During the fourth quarter of the fiscal year ended July 31, 2023, the Company closed on its sale of certain assets of its clinical laboratory segment to Labcorp and discontinued that segment's operations. As a result of this transaction, the Company will report a significant gain on the sale of the discontinued operations and significant net income for the fiscal year ended July 31, 2023 as compared to the net loss for the fiscal year ended July 31, 2022.

#### Forward-Looking Statements

Our disclosure and analysis in this Form 12b-25 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.

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 our Form 10-K filing for the July 31, 2022 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.

Enzo Biochem, Inc.

(Name of Registrant as Specified in Charter)

has caused this notification to be signed on its behalf by the undersigned hereunto duly authorized.

Date: October 30, 2023

By: /s/ Patricia Eckert  
Patricia Eckert  
Interim Chief Financial Officer and  
Principal Accounting Officer

INSTRUCTION: The form may be signed by an executive officer of the registrant or by any other duly authorized representative. The name and title of the person signing the form shall be typed or printed beneath the signature. If the statement is signed on behalf of the registrant by an authorized representative (other than an executive officer), evidence of the representative's authority to sign on behalf of the registrant shall be filed with the form.

**ATTENTION**  
**Intentional misstatements or omissions of fact constitute Federal Criminal Violations (See 18 U.S.C. 1001)**

#### GENERAL INSTRUCTIONS

1. This form is required by Rule 12b-25 (17 CFR 240.12b-25) of the General Rules and Regulations under the Securities Exchange Act of 1934.
2. One signed original and four conformed copies of this form and amendments thereto must be completed and filed with the Securities and Exchange Commission, Washington, D.C. 20549, in accordance with Rule 0-3 of the General Rules and Regulations under the Act. The information contained in or filed with the form will be made a matter of public record in the Commission files.
3. A manually signed copy of the form and amendments thereto shall be filed with each national securities exchange on which any class of securities of the registrant is registered.

4. Amendments to the notifications must also be filed on Form 12b-25 but need not restate information that has been correctly furnished. The form shall be clearly identified as an amended notification.
  5. *Electronic filers.* This form shall not be used by electronic filers unable to timely file a report solely due to electronic difficulties. Filers unable to submit reports within the time period prescribed due to difficulties in electronic filing should comply with either Rule 201 or Rule 202 of Regulation S-T (§232.201 or §232.202 of this chapter) or apply for an adjustment in filing date pursuant to Rule 13(b) of Regulation S-T (§232.13(b) of this chapter).
  6. Interactive data submissions. This form shall not be used by electronic filers with respect to the submission or posting of an Interactive Data File (§232.11 of this chapter). Electronic filers unable to submit or post an Interactive Data File within the time period prescribed should comply with either Rule 201 or 202 of Regulation S-T (§232.201 and §232.202 of this chapter).
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