

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

**FORM S-3
REGISTRATION STATEMENT**
*UNDER
THE SECURITIES ACT OF 1933*

MINERALYS THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

**150 N. Radnor Chester Road, Suite F200
Radnor, Pennsylvania 19087
(888) 378-6240**
(Address, including zip code, and telephone number, including
area code, of registrant's principal executive offices)

84-1966887
(I.R.S. Employer
Identification Number)

**Jon Congleton
Chief Executive Officer
Mineralys Therapeutics, Inc.
150 N. Radnor Chester Road, Suite F200
Radnor, Pennsylvania 19087
(888) 378-6240**
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:
**Cheston J. Larson
Matthew T. Bush
Anthony A. Gostanian
Latham & Watkins LLP
12670 High Bluff Drive
San Diego, California 92130
(858) 523-5400**

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of the registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. ☐

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ☒

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☒ (File no. 333-278122)

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box. ☐

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☐

Accelerated filer ☐

Non-accelerated filer ☒

Smaller reporting company ☒

Emerging growth company ☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

This Registration Statement shall become effective upon filing with the Securities and Exchange Commission in accordance with Rule 462(b) of the Securities Act.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

Pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and General Instruction IV(A) of Form S-3, the registrant is filing this Registration Statement on Form S-3 to register the offer and sale of an additional \$54,268,911, or the equivalent thereof, of its (a) shares of the Company's common stock, \$0.0001 par value per share (the "Common Stock"); (b) shares of the Company's preferred stock, \$0.0001 par value per share (the "Preferred Stock"); (c) the Company's debt securities (the "Debt Securities"); (d) warrants to purchase Common Stock, Preferred Stock or Debt Securities (the "Warrants"); and (e) units consisting of two or more securities described above in any combination (the "Units") (the Common Stock, the Preferred Stock, the Debt Securities, the Warrants and the Units are collectively referred to herein as the "Securities"). This Registration Statement relates to the registrant's Registration Statement on Form S-3, as amended (File No. 333-278122) (the "Prior Registration Statement"), initially filed on March 21, 2024 and declared effective by the Securities and Exchange Commission on April 11, 2024. The required opinion and consents are filed herewith. The additional amount of Securities that is being registered for offer and sale represents no more than 20% of the maximum aggregate offering price of the remaining securities available to be sold under the Prior Registration Statement. Pursuant to Rule 462(b), the contents of the Prior Registration Statement, including the exhibits thereto, are incorporated by reference into this Registration Statement.

EXHIBIT INDEX

Exhibit Number	Exhibit Description
5.1	<u>Opinion of Latham & Watkins LLP</u>
23.1	<u>Consent of Independent Registered Public Accounting Firm</u>
23.2	<u>Consent of Latham & Watkins LLP (included in Exhibit 5.1)</u>
107.1	<u>Filing Fee Table</u>

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Radnor, Commonwealth of Pennsylvania, on September 2, 2025.

Mineralys Therapeutics, Inc.

By: /s/ Jon Congleton
Jon Congleton
Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated:

Signature	Title	Date
<u>/s/ Jon Congleton</u> Jon Congleton	Chief Executive Officer and Director (Principal Executive Officer)	September 2, 2025
<u>/s/ Adam Levy</u> Adam Levy	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	September 2, 2025
<u>*</u> BT Slingsby, MD, PhD, MPH	Director	September 2, 2025
<u>*</u> Srinivas Akkaraju, MD, PhD	Director	September 2, 2025
<u>*</u> Derek DiRocco, PhD	Director	September 2, 2025
<u>/s/ Alex Gold</u> Alex Gold	Director	September 2, 2025
<u>*</u> Daphne Karydas	Director	September 2, 2025
<u>*</u> Glenn P. Sblendorio	Director	September 2, 2025

*By: /s/ Adam Levy
Adam Levy
Attorney-in-Fact

Calculation of Filing Fee Tables

S-3

Mineralys Therapeutics, Inc.

Table 1: Newly Registered and Carry Forward Securities

☐ Not Applicable

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
	Equity	Common Stock, \$0.0001 par value per share	457(o)									
	Equity	Preferred Stock, \$0.0001 par value per share	457(o)									
	Debt	Debt Securities	457(o)									
	Other	Warrants	457(o)									
	Other	Units	457(o)									
Fees to be Paid	1	Unallocated (Universal) Shelf	457(o)			54,268,911.00	\$ 0.0001531	\$ 8,308.57				
Fees Previously Paid												
Carry Forward Securities												
Carry Forward Securities												
Total Offering Amounts:						\$ 54,268,911.00		\$ 8,308.57				
Total Fees Previously Paid:								\$ 0.00				
Total Fee Offsets:								\$ 0.00				
Net Fee Due:								\$ 8,308.57				

Offering Note

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Note 1a: The registrant previously registered the offer and sale of certain securities having a proposed maximum aggregate offering price of \$500,000,000 pursuant to a Registration Statement on Form S-3 (File No. 333-278122) (the "Prior Registration Statement"), which was initially filed on March 21, 2024 and declared effective by the Securities and Exchange Commission on April 11, 2024. As of the date hereof, a balance of \$271,344,555.08 of such securities remains unsold under the Prior Registration Statement. In accordance with Rule 462(b) under the Securities Act of 1933, as amended, and General Instruction IV(A) of Form S-3, the registrant is hereby registering the offer and sale of an additional \$54,268,911 of its Securities. The additional amount of Securities that is being registered for offer and sale represents no more than 20% of the maximum aggregate offering price of the remaining securities available to be sold under the Prior Registration Statement.

Note 1b: The proposed maximum aggregate offering price per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities covered by this registration statement and is not specified as to each class of security pursuant to Instruction 2.A.ii.b to Item 16(b) of Form S-3 under the Securities Act.

Note 1c: Estimated solely for the purpose of calculating the registration fee. No separate consideration will be received for shares of common stock that are issued upon conversion of debt securities or preferred stock or upon exercise of warrants registered hereunder. The aggregate maximum offering price of all securities issued by the Company pursuant to this registration statement will not exceed \$54,268,911.

Table 2: Fee Offset Claims and Sources

☒ Not Applicable

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee	Fee Paid with Fee Offset Source
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											Offset Claimed	
Rules 457(b) and 0-11(a)(2)												
Fee Offset Claims	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fee Offset Sources	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Rule 457(p)												
Fee Offset Claims	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fee Offset Sources	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table 3: Combined Prospectuses

☒Not Applicable

	Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

12670 High Bluff Drive
 San Diego, California 92130
 Tel: +1.858.523.5400 Fax: +1.858.523.5450
 www.lw.com

LATHAM & WATKINS LLP

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September 2, 2025

Mineralys Therapeutics, Inc.
 150 N. Radnor Chester Road, Suite F200
 Radnor, Pennsylvania 19087

Re: Registration Statement on Form S-3

To the addressee set forth above:

We have acted as special counsel to Mineralys Therapeutics, Inc., a Delaware corporation (the “**Company**”), in connection with its filing on the date hereof with the Securities and Exchange Commission (the “**Commission**”) of a registration statement on Form S-3 (the “**Registration Statement**”) under Rule 462(b) of the Securities Act of 1933, as amended (the “**Act**”), relating to the registration for issue and sale by the Company of up to \$54,268,911 in aggregate offering amount of additional (i) shares of the Company’s common stock, \$0.0001 par value per share (“**Common Stock**”), (ii) shares of one or more series of the Company’s preferred stock, par value \$0.0001 per share (the “**Preferred Stock**”), (iii) one or more series of the Company’s debt securities (collectively, “**Debt Securities**”) to be issued under an indenture to be entered into between the Company, as issuer, and a trustee (a form of which is included as Exhibit 4.3 to the Prior Registration Statement (as defined below)) and one or more board resolutions, supplements thereto or officer’s certificates thereunder (such indenture, together with the applicable board resolution, supplement or officer’s certificate pertaining to the applicable series of Debt Securities, the “**Applicable Indenture**”), (iv) warrants to purchase Debt Securities, Common Stock or Preferred Stock (“**Warrants**”), and (v) units consisting of two or more of the Securities (as defined below) (“**Units**”). The Debt Securities, Common Stock, Preferred Stock, Warrants and Units, plus any additional Debt Securities, Common Stock, Preferred Stock, Warrants and Units are referred to herein collectively as the “**Securities**.” The Registration Statement incorporates by reference the Registration Statement on Form S-3, as amended (Registration No. 333-278122) (the “**Prior Registration Statement**”), which was declared effective on April 11, 2024, including the base prospectus which forms part of the Registration Statement (the “**Base Prospectus**”) and the supplements to the prospectus referred to therein (each a prospectus supplement, together with the Base Prospectus, a “**Prospectus**”).

This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or related applicable Prospectus, other than as expressly stated herein with respect to the issue of the Securities.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware, and with respect to the opinions set forth in numbered paragraphs 3 through 5 below, the internal laws of the State of New York, and we express no opinion with respect to the applicability thereto, or the effect thereon, of the laws of any other jurisdiction or, in the case of Delaware, any other laws, or as to any matters of municipal law or the laws of any local agencies within any state.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof:

1. When an issuance of Common Stock has been duly authorized by all necessary corporate action of the Company, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in the manner contemplated by the applicable Prospectus and by such corporate action, and in total amounts and numbers of shares that do not exceed the respective total amounts and numbers of shares (a) available under the Company's Amended and Restated Certificate of Incorporation (the "***Certificate of Incorporation***"), and (b) authorized by the board of directors in connection with the offering contemplated by the applicable Prospectus, such shares of Common Stock will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the General Corporation Law of the State of Delaware.

2. When a series of Preferred Stock has been duly established in accordance with the terms of the Certificate of Incorporation and authorized by all necessary corporate action of the Company, upon issuance, delivery and payment therefor in an amount not less than the par value thereof in the manner contemplated by the applicable Prospectus and by such corporate action, and in total amounts and numbers of shares that do not exceed the respective total amounts and numbers of shares (a) available under the Certificate of Incorporation, and (b) authorized by the board of directors in connection with the offering contemplated by the applicable Prospectus, such shares of such series of Preferred Stock will be validly issued, fully paid and nonassessable. In rendering the foregoing opinion, we have assumed that the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the General Corporation Law of the State of Delaware.

3. When the Applicable Indenture has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular series of Debt Securities have been duly established in accordance with the terms of the Applicable Indenture and authorized by all necessary corporate action of the Company and

such Debt Securities have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the Applicable Indenture and in the manner contemplated by the applicable Prospectus and by such corporate action, such Debt Securities will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms

4. When the applicable warrant agreement has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular issuance of Warrants have been duly established in accordance with the terms of the applicable warrant agreement and authorized by all necessary corporate action of the Company, and such Warrants have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable warrant agreement and in the manner contemplated by the applicable Prospectus and by such corporate action (assuming the securities issuable upon exercise of such Warrants have been duly authorized and reserved for issuance by all necessary corporate action), such Warrants will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

5. When the applicable unit agreement has been duly authorized, executed and delivered by all necessary corporate action of the Company, and when the specific terms of a particular issuance of Units have been duly authorized in accordance with the terms of the applicable unit agreement and authorized by all necessary corporate action of the Company, and such Units have been duly executed, authenticated, issued and delivered against payment therefor in accordance with the terms of the applicable unit agreement and in the manner contemplated by the applicable Prospectus and by such corporate action (assuming the securities issuable upon exercise of such Units have been duly authorized and reserved for issuance by all necessary corporate action), such Units will be the legally valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.

Our opinions are subject to: (i) the effects of bankruptcy, insolvency, reorganization, preference, fraudulent transfer, moratorium or other similar laws relating to or affecting the rights and remedies of creditors; (ii) the effects of general principles of equity, whether considered in a proceeding in equity or at law (including the possible unavailability of specific performance or injunctive relief), concepts of materiality, reasonableness, good faith and fair dealing, and the discretion of the court before which a proceeding is brought; (iii) the invalidity under certain circumstances under law or court decisions of provisions providing for the indemnification of or contribution to a party with respect to a liability where such indemnification or contribution is contrary to public policy; and (iv) we express no opinion as to (a) any provision for liquidated damages, default interest, late charges, monetary penalties, make-whole premiums or other economic remedies to the extent such provisions are deemed to constitute a penalty, (b) consents to, or restrictions upon, governing law, jurisdiction, venue, arbitration, remedies or judicial relief, (c) waivers of rights or defenses, (d) any provision requiring the payment of attorneys' fees, where such payment is contrary to law or public policy, (e) any provision permitting, upon acceleration of any Debt Securities, collection of that portion of the stated principal amount thereof which might be determined to constitute unearned interest

thereon, (f) the creation, validity, attachment, perfection, or priority of any lien or security interest, (g) advance waivers of claims, defenses, rights granted by law, or notice, opportunity for hearing, evidentiary requirements, statutes of limitation, trial by jury or at law, or other procedural rights, (h) waivers of broadly or vaguely stated rights, (i) provisions for exclusivity, election or cumulation of rights or remedies, (j) provisions authorizing or validating conclusive or discretionary determinations, (k) grants of setoff rights, (l) proxies, powers and trusts, (m) provisions prohibiting, restricting, or requiring consent to assignment or transfer of any right or property, (n) any provision to the extent it requires that a claim with respect to a security denominated in other than U.S. dollars (or a judgment in respect of such a claim) be converted into U.S. dollars at a rate of exchange at a particular date, to the extent applicable law otherwise provides, and (o) the severability, if invalid, of provisions to the foregoing effect.

With your consent, we have assumed (i) that each of the Debt Securities, Warrants and Units and the Applicable Indenture, warrant agreements and unit agreements governing such Securities (collectively, the “**Documents**”) will be governed by the internal laws of the State of New York, (ii) that each of the Documents has been or will be duly authorized, executed and delivered by the parties thereto, (iii) that each of the Documents constitutes or will constitute legally valid and binding obligations of the parties thereto other than the Company, enforceable against each of them in accordance with their respective terms, and (iv) that the status of each of the Documents as legally valid and binding obligations of the parties will not be affected by any (a) breaches of, or defaults under, agreements or instruments, (b) violations of statutes, rules, regulations or court or governmental orders, or (c) failures to obtain required consents, approvals or authorizations from, or to make required registrations, declarations or filings with, governmental authorities.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm contained in the Prospectus under the heading “Legal Matters.” In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ Latham & Watkins LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-3 filed pursuant to Rule 462(b) of the Securities Act of 1933 of the reference to our firm under the caption “Experts” and to the incorporation by reference of our report dated February 12, 2025, with respect to the financial statements of Mineralys Therapeutics, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2024, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Denver, Colorado
September 2, 2025