

**VIA EDGAR**

Office of Manufacturing  
Division of Corporation Finance  
Securities and Exchange Commission  
100 F Street NE  
Washington, D.C. 20549-3561

Attention: Thomas Jones  
Erin Purnell

**Re: Mobix Labs, Inc.  
Registration Statement on Form S-1  
Filed April 2, 2024  
File No. 333-278451**

Ladies and Gentlemen:

This letter is submitted on behalf of our client, Mobix Labs, Inc., a Delaware corporation (the “Company”) in response to the comments from the staff of the Division of Corporation Finance (the “Staff”) of the Securities and Exchange Commission (the “Commission”) in a letter to the Company dated April 23, 2024 (the “Comment Letter”) with respect to the above referenced registration statement on Form S-1 filed with the Commission on April 2, 2024 (the “Registration Statement”). In connection with this letter responding to the Staff’s comments, the Company is filing Amendment No. 1 to the Registration Statement (the “Amendment No. 1”), which will include changes in response to the Staff’s comments.

The numbered paragraphs and headings below correspond to those set forth in the Comment Letter. Each of the Staff’s comments is set forth in bold, followed by the Company’s response to each comment. Capitalized terms used in this letter but not defined herein have the meaning given to such terms in Amendment No. 1. All references to page numbers in these responses are to pages of Amendment No. 1.

Registration Statement on Form S-1 filed April 2, 2024

General

1. **Please revise to update your disclosures throughout the filing, as applicable, consistent with the revised disclosure that you provide in response to our comment letter issued on April 23, 2024, with respect to your Form S-1 filed April 16, 2024.**

Response: The Company has revised its disclosures on pages 6, 7, 8, 15, 16, 33, 57, 63 and 66 to address the Staff’s comment..

2. **Please disclose how you determined the total amount and material terms of the Common Stock Purchase Agreement with B. Riley Principal Capital II, LLC, including a discussion of any material discussions or negotiations.**

Response: The Company has revised its disclosure on page 39 to address the Staff’s comment.

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3. We note the significant number of redemptions of your Class A Common Stock in connection with your business combination, the number of shares of being registered for resale here and in your registration statement on Form S-1 filed April 16, 2024, will constitute a number of shares that is larger than your current public float. Please highlight the significant negative impact that the collective sales of shares could have on the public trading price of the shares of Class A Common Stock. Please highlight the potential significant negative impact sales of shares on this registration statement, and separately, combined with the sales of shares in your Form S-1 filed April 16, 2024, could have on the public trading price of the Class A Common Stock.

Response: The Company has revised its disclosure on the cover page to address the Staff's comment.

Summary of the Prospectus, page 1

4. Please expand your discussion here to reflect the fact that this offering involves the potential sale of a substantial portion of shares for resale and discuss how such sales could impact the market price of your Class A Common Stock. Your discussion should highlight the fact that over time B. Riley Principal Capital II, LLC may purchase approximately 40% of your current outstanding shares, while consistently selling its shares, as needed, to maintain 4.99% ownership. Please describe the impact that such continuous sales may have on the market price of your Class A Common Stock and please disclose that B. Riley Principal Capital II, LLC will generally be able to sell all of their shares for so long as the registration statement of which this prospectus forms a part is available for use, or earlier termination by the parties. Please also revise to highlight the fact that in your Form S-1 filed April 16, 2024, your shareholders will generally be able to sell all of their shares (as indicated in the Selling Securityholders table) at the same time that this registration statement is available for use. Please describe the impact that such continuous sales may have on the market price of your Class A Common Stock. Please include risk factor disclosure that discusses the same.

Response: The Company has revised its disclosure on the pages 6, 33 and 48 to address the Staff's comment.

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If you have any questions or comments concerning this submission or require any additional information, please do not hesitate to contact Laurie L. Green, Esq. at (954) 765-0500.

Very truly yours,

Greenberg Traurig, P.A.

By: /s/ Laurie L. Green  
Laurie L. Green, Esq.

cc: Keyvan Samini, President and Chief Financial Officer