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

FORM 6-K

REPORT OF FOREIGN PRIVATE ISSUER PURSUANT TO RULE 13a-16 OR 15d-16 UNDER THE SECURITIES EXCHANGE ACT OF 1934

For the month of June 2024

Commission File Number: 001-41973

Critical Metals Corp. (Exact name of registrant as specified in its charter)

c/o Maples Corporate Services (BVI) Limited Kingston Chambers, PO Box 173, Road Town Tortola, British Virgin Islands (Address of principal executive office)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F:

Form 20-F ⊠ Form 40-F □

EXPLANATORY NOTE

On June 18, 2024, Critical Metals Corp. (the "Company") issued a press release announcing that it has completed its initial investment in the Tanbreez Green Rare Earth Mine ("Tanbreez"), in accordance with the previously disclosed Heads of Agreement, dated June 5, 2024 (the "Heads of Agreement"), between the Company and Rimbal Pty Ltd., a company controlled by geologist Gregory Barnes. Pursuant to the Heads of Agreement, the Company acquired an initial 5.55% interest in Tanbreez in exchange for the payment of \$5 million in cash.

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.

Critical Metals Corp.

 By:
 /s/ Tony Sage

 Name:
 Tony Sage

 Title:
 Chief Executive Officer and Executive Chairman

Date: June 25, 2024