

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

DIVISION OF CORPORATION FINANCE

June 15, 2021

Josh Lehrer, M.D. President and Chief Executive Officer Graphite Bio, Inc. 279 East Grand Avenue, Suite 430 South San Francisco, CA 94080

> Re: Graphite Bio, Inc. Amendment No. 1 to Registration Statement on Form S-1 Exhibit Nos. 10.12, 10.13, 10.14, 10.15, 10.16 and 10.20 Filed June 11, 2021 File No. 333-256838

Dear Dr. Lehrer:

You have redacted information from the exhibits identified above asserting that the redacted information is not material and is the type of information that you treat as private or confidential. For us to assess your compliance with the form requirements, please supplementally provide us, within five business days, with an unredacted paper copy (marked to show where you have redacted information in your public filing) of the exhibits identified above.

Please contact the staff member associated with the review of this filing to discuss how to submit the unredacted copy of your exhibits. Given your conclusion that this information is private or confidential, do not respond by submitting correspondence on EDGAR or sending a response by email. Unless you tell us otherwise, we will assume that you want us to treat the requested supplemental materials, including unredacted documents and any related correspondence, as confidential while in our possession. We will destroy the supplemental materials at the end of our assessment unless doing so would be inconsistent with Rules 418 or 12b-4.

We will notify you of any comments we may have or that we have concluded our assessment of your compliance with the form.

Sincerely,

Division of Corporation Finance