



DIVISION OF  
CORPORATION FINANCE

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

September 21, 2010

David R. Koos  
Chief Executive Officer  
Bio-Matrix Scientific Group, Inc.  
1010 University Avenue  
#40  
San Diego, CA 92103

**Re: Bio-Matrix Scientific Group, Inc.  
Form 10-K/A for Fiscal Year Ended September 30, 2009  
Filed August 17, 2010  
File No. 0-32201**

Dear Mr. Koos:

We have reviewed your filing and response letter dated September 10, 2010 and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter within ten business days by amending your filing, by providing the requested information, or by advising us when you will provide the requested response. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment or revisions to future disclosures are appropriate, please tell us why in your response.

After reviewing any amendment to your filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K/A for Fiscal Year Ended September 30, 2009

Item 9A. Controls and Procedures, page 33

1. We reviewed your response to comment one in our letter dated August 9, 2010 and the revisions to your disclosure, and re-issue our previous comment. Please revise to include the disclosure required by Item 307 of Regulation S-K regarding the effectiveness of disclosure controls and procedures. In doing so, please consider comment three in our letter dated July 9, 2010 with respect to your previous disclosure regarding the effectiveness of disclosure controls and procedures and the definition of disclosure controls and procedures in Exchange Act Rule 13a-15(e).
2. We reviewed the revisions to your disclosure, and note you still disclose that your chief executive officer and acting chief financial officer conducted an assessment, including

testing of the effectiveness of your internal control over financial reporting as of April 30, 2010. Exchange Act Rule 13a-15(c) requires management to evaluate, with the participation of the principal executive officer and principal financial officer, the effectiveness of internal control over financial reporting as of the end of each fiscal year. As such, please revise your disclosure to state that the assessment was performed as of September 30, 2009 as previously requested in comment two in our letter dated August 9, 2010. Refer to Item 308(T) of Regulation S-K and Exchange Act Rule 13a-15(c).

Signatures, page 42

3. We reviewed your response to comments three and five in our letter dated August 9, 2010. Please confirm that you will comply with the signature requirements specified in the general instructions to Form 10-K and Form 10-Q in future filings.

You may contact Yolanda Guobadia at (202) 551-3562 if you have questions regarding comments on the financial statements and related matters. Please contact me at (202) 551-3344 with any other questions.

Sincerely,

William H. Thompson  
Accounting Branch Chief