



DIVISION OF
CORPORATION FINANCE

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

February 28, 2014

Via E-mail

Michael Rice
Chief Executive Officer
BioLife Solutions, Inc.
3303 Monte Villa Parkway
Bothell, WA 98021

**Re: BioLife Solutions, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Filed February 14, 2014
File No. 333-192880**

Dear Mr. Rice:

We have limited our review of your registration statement to those issues we have addressed in our 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 by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

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

Prospectus Cover Page

1. Based on your revised disclosures on pages 15 and 45, it appears that the offering is now a best efforts, minimum-maximum offering. Accordingly, please revise to provide the information required by Regulation S-K, Item 501(b)(8)(ii). In this regard, you must indicate specific numbers of units rather than using dollar amounts. Please also refer to Rule 430A.
2. Please disclose the escrow arrangements for this offering as required by Regulation S-K, Item 501(b)(8)(iii), including provisions for, fees related to, and timing of the return of funds to investors if the minimum number of securities is not sold. See also Rule 10b-9 and Rule 15c2-4. Note that a copy of the escrow agreement, if any, should be filed prior to effectiveness.

The Offering, page 3

3. Revise the summary to reflect the revisions to the cover page requested above and disclose the termination date of the offering in your summary of terms. Also, disclose whether affiliates of the issuer may purchase securities in order to meet the minimum purchase amounts. Please ensure that corresponding changes, as applicable, are made throughout the prospectus.

Dilution, page 18

4. Please present your dilution information at the same thresholds (minimum, 50%, 75%, 100%) used for your Use of Proceeds disclosure.

Warrants, page 43

5. We note your revised disclosure on page 43 in response to prior comment 1; however, section 2.d.v. of the Common Stock Purchase Warrant indicates that you may elect to pay a cash adjustment instead of rounding to the nearest whole warrant. Please advise or revise.

Plan of Distribution, page 45

6. We refer to your disclosure on page 45 and section 1(i) of the Placement Agency Agreement. Please revise to clarify whether you will pay placement agency fees in the event that the minimum number of units is not sold.

Exhibit 10.45

7. Please tell us why pages 5 and 22 of the Securities Purchase Agreement do not reflect that you are selling units.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

Notwithstanding our comments, in the event you request acceleration of the effective date of the pending registration statement please provide a written statement from the company acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;

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- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment prior to the requested effective date of the registration statement.

You may contact Joseph McCann at (202) 551-6262 or Daniel Morris, Special Counsel, at (202) 551-3314 with any questions.

Sincerely,

/s/ Daniel Morris for

Amanda Ravitz
Assistant Director

cc (via e-mail): Christopher L. Doerksen, Esq. – Dorsey & Whitney LLP