



DIVISION OF
CORPORATION FINANCE

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

June 7, 2011

Mr. Christopher A. Artzer
Vice President, General Counsel and Secretary
KiOR, Inc.
13001 Bay Park Road
Pasadena, TX 77507

**Re: KiOR, Inc.
Amendment No. 2 to Registration Statement on Form S-1
Filed June 1, 2011
File No. 333-173440**

Dear Mr. Artzer:

We have reviewed your registration statement 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 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.

Management's Discussion and Analysis . . . , page 41

Critical Accounting Policies and Estimates, page 45

Stock-Based Compensation, page 46

1. Please expand your discussion to disclose:
 - the valuation methodologies and related assumptions used in determining the fair values; and
 - the valuation alternative selected and the reason management elected not to obtain a valuation by an unrelated valuation specialist.
2. We note your response to prior comment five, from our letter dated May 27, 2011, and remind you to revise your registration statement to disclose the information provided in your response when you have determined your anticipated IPO price.

Exhibit 5.1

3. In sub-paragraph (c) on page two of its opinion, counsel assumes that the Board (as defined in the opinion) will have taken all necessary corporate action to authorize the issuance of the shares and to authorize the terms of the offering and sale of the shares. This assumption appears to be inappropriate, as it assumes one or more legal conclusions covered by or underlying the opinions that counsel is providing. Please have your counsel revise its opinion to remove the aforementioned assumption.
4. Please confirm to us that counsel's reference to the General Corporation Law of the State of Delaware includes the statutory provisions and reported judicial decisions interpreting that statute.

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;
- 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.

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You may contact Dale Welcome, Staff Accountant, at (202) 551-3865 or, in his absence, John Cash, Accounting Branch Chief, at (202) 551-3768 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Dickerson, Staff Attorney, at (202) 551-3749 or, in her absence, Dietrich King, Senior Staff Attorney, at (202) 551-3338 with any other questions.

Sincerely,

Pamela Long
Assistant Director

cc: Felix P. Phillips
Baker Botts L.L.P.
via facsimile at (713) 229-7828