

June 5, 2008

Mail Stop 6010

Robert P. Hebert  
Chief Financial Officer  
CPEX Pharmaceuticals, Inc.  
2 Holland Way  
Exeter, NH 03833

**Re: CPEX Pharmaceuticals, Inc.  
Registration Statement on Form 10-12B/A, filed May 30, 2008  
File No. 1-33895**

Dear Mr. Hebert:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your documents in response to these comments. If you disagree, we will consider your explanation as to why our comment is inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanation. In some of our comments, we may ask you to provide us with supplemental information so we may better understand your disclosure. After reviewing this information, we may or may not raise additional comments.

Please understand that the purpose of our review process is to assist you in your compliance with the applicable disclosure requirements and to enhance the overall disclosure in your filing. We look forward to working with you in these respects. We welcome any questions you may have about our comments or on any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Exhibit 99.1 INFORMATION STATEMENT

The Separation, page 31

Opinion of Duff & Phelps, LLC, page 36

1. Please revise your disclosure to disclose the remuneration you will pay Duff & Phelps in connection with its engagement and the delivery of its opinion, and explain any contingent or similar payment arrangements.

Form of Opinion of Duff & Phelps, LLC

2. We note the statement in the Duff & Phelps opinion that, “[Duff & Phelps’] liability in connection with this letter shall be limited in accordance with the terms set forth in the engagement letter between Duff & Phelps and Bentley dated September 18, 2007 (the “Engagement Letter”). This letter is intended to be relied on only by Bentley, CPEX, and each of their respective Boards of Directors.” Supplementally, please provide us with a copy of the Engagement Letter. In addition, please disclose in the information statement the basis for Duff & Phelps’ belief that shareholders cannot rely upon the opinion to support any claims against Duff & Phelps arising under applicable state law. Describe any applicable state-law authority regarding the availability of such a potential defense. In the absence of applicable state-law authority, disclose that the availability of such a defense will be resolved by a court of competent jurisdiction. Also disclose that resolution of the question of the availability of such a defense will have no effect on the rights and responsibilities of the board of directors under applicable state law. Further disclose that the availability of such a state-law defense to Duff & Phelps would have no effect on the rights and responsibilities of either Duff & Phelps or the board of directors under the federal securities laws. Alternatively, if these disclosures can not be made, please delete the statement from the opinion.

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As appropriate, please amend your filings in response to these comments. You may wish to provide us with marked copies of the amendment to expedite our review. Please furnish a cover letter with your amendment that keys your responses to our comments and provides any requested supplemental information. Detailed cover letters greatly facilitate our review. Please file your cover letter on EDGAR under the form type label CORRESP. Please understand that we may have additional comments after reviewing your amendment and responses to our comments.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filings reviewed by the staff to be certain that they have provided all information investors 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.

In connection with responding to our comments, please provide, in writing, a statement from the company acknowledging that,

- the company is responsible for the adequacy and accuracy of the disclosure in the filings;
- staff comments or changes to disclosure in response to staff comments in the filings reviewed by the staff do not foreclose the Commission from taking any action with respect to the filing; and

- the company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

In addition, please be advised that the Division of Enforcement has access to all information you provide to the staff of the Division of Corporation Finance in our review of your filing or in response to our comments on your filing.

You may contact Sasha Parikh at (202) 551-3627 if you have questions regarding comments on the financial statements and related matters. Please contact Jennifer Riegel at (202) 551-3575 or me at (202) 551-3715 with any other questions.

Sincerely,

Jeffrey P. Riedler  
Assistant Director

cc: Eileen T. Nugent  
Paul Donnelly  
Skadden, Arps, Slate Meagher & Flom LLP  
Four Times Square  
New York, NY 10036