

Via Facsimile and U.S. Mail
Mail Stop 6010

April 12, 2006

Mr. Raymond J. Land
Senior Vice President and Chief Financial Officer
Orchid Cellmark, Inc.
4390 US Route One
Princeton, NJ 08540

**Re: Orchid Cellmark, Inc
Item 4.02 Form 8-K
Filed April 7, 2006
File No. 000-30267**

Dear Mr. Land:

We have reviewed your filing and have the following comments. In our comments, we ask you to provide us with more information so we may better understand your disclosure. Please be as detailed as necessary in your explanation. After reviewing this information, we may 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 any other aspect of our review. Feel free to call us at the telephone number listed at the end of this letter.

Item 4.02

1. Please explain to us your purchase accounting for the escrowed shares in your acquisition of Lifecodes Corporation in 2001. In addition, please explain how you reflected the escrowed shares in your earnings per share computations since your acquisition. Please reference the authoritative literature you relied upon to support your initial accounting.
2. Please explain to us how you initially accounted for the settlement of escrow claims in the second quarter of 2005 and how you reflected this settlement in your June 30, 2005 and September 30, 2005 Forms 10-Q, as originally filed. In your response, please indicate how you treated the returned shares for your earnings per share computations.

3. Please explain to us the basis for your anticipated accounting for this escrow settlement as identified in this Form 8-K filing. Please reference the authoritative literature you rely upon to support your position.
4. Please explain to us how your intended restatement impacts your initial assessment of the effectiveness of disclosure controls and procedures in each of your June 30, 2005 and September 30, 2005 Forms 10-Q. In addition, please explain to us the anticipated impact of the intended restatements on your assessment as of December 31, 2005.

Please respond to these comments within five business days or tell us when you will provide us with a response. Please furnish a letter that keys your responses to our comments and provide the requested information. Detailed letters greatly facilitate our review. Please file your letter on EDGAR under the form type label CORRESP.

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 all information required under the Securities Exchange Act of 1934 and that they have provided all information investors require for an informed investment decision. 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 filing;
- staff comments or changes to disclosure in response to staff comments 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.

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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.

If you have any questions, please call me at (202) 551-3638.

Sincerely,

Mark K. Brunhofer
Staff Accountant