

Via Facsimile and U.S. Mail
Mail Stop 6010

August 10, 2006

Mr. Edward T. Shonsey
Chief Executive Officer
Diversa Corporation
4955 Directors Place
San Diego, CA 92121

Re: Form 10-K for Fiscal Year Ended December 31, 2005
Filed March 16, 2006
File No. 0-29173

Dear Mr. Shonsey:

We have limited our review of your filing to those issues we have addressed in our comments. Where indicated, we think you should revise your document in response to these comments. If you disagree, we will consider your explanation as to why our comments are inapplicable or a revision is unnecessary. Please be as detailed as necessary in your explanations. In some of our comments, we ask you to provide us with information so we may better understand your disclosure.

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.

Form 10-K for the year ended December 31, 2005

Management's Discussion and Analysis
Results of Operations
Research and Development, page 42

1. Please provide disclosure regarding the status of each of your major research and development projects included in collaborations and internal development.
2. We acknowledge your disclosure that the company cannot quantify precisely the research and development costs incurred on a project-by-project basis. We note that you track your researchers' time by project. It appears that you could provide

a breakdown by project for your researchers' time with the unallocated portion shown as a reconciliation to the Statements of Operations. We also note your disclosure by "type" of cost. We believe these disclosures could be supplemented with additional information such as by area of focus (i.e. alternative fuels, specialty industrial process, and health/nutrition). Further breakdown could be made by type within the area of focus, such as Amylase-T, Biomass-to-Ethanol Programs, pulp and paper processing, etc. Please revise your disclosures or clarify why additional disclosure by type of cost cannot be made.

Note 1. Organization and Summary of Significant Accounting Policies
Recent Events, page 60

3. Specifically clarify which programs and lines of business you are scaling back. Clarify in Management's Discussion and Analysis the anticipated effect on your results of operations and liquidity.

Revenue Recognition
Collaborative Revenue, page 62

4. With regards to your accounting for collaborative revenue, provide us your accounting basis for recognizing revenue based on the percentage-of-completion method that recognizes as revenue as research hours are incurred. Refer to the accounting literature you are relying upon for your accounting treatment. Please note that we do not believe that SOP 81-1 is applicable.
5. Please explain why it is appropriate to recognize revenue from milestone payments upon the milestone achievement if the company has continuing performance obligations.

Segment Reporting, page 65

6. Please tell us why you believe segment reporting is not required. You state on page 3 that you have identified three areas of focus: Alternative fuels, Specialty industrial processes, and health and nutrition. If your historical financial statements do not reflect these areas of concentration, then it appears important to highlight your segments for fiscal 2005 so that an investor can understand the effect the reorganization announced in January 2006 will have on your results of operations. Additional disclosure throughout the filing may be necessary. In addition, if paragraphs 41-44 of SFAS 144 are not applicable in your 2006 financial statements due to continuing involvement, it appears that you may still have a segment reporting requirement.

Note 6. Commitments and Contingencies
Litigation, page 78

7. Please indicate how much the company has accrued related to this litigation or why an accrual is not applicable under FAS 5 at the end of the period. The liability and amount disclosed related to litigation matters should be without regard to insurance coverage.

* * * *

As appropriate, please amend your Form 10-K for the year ended December 31, 2005 and respond to these comments within 10 business days or tell us when you will provide us with a response. 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 information. Detailed cover letters greatly facilitate our review. Please file the 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 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 your letter, 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.

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.

Edward T. Shonsey
Diversa Corporation
August 10, 2006
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You may contact Sasha Parikh, Staff Accountant, at (202) 551-3627 or Mary Mast, Review Accountant, at (202) 551-3613 if you have questions regarding the comments. In this regard, do not hesitate to contact me, at (202) 551-3679.

Sincerely,

Jim B. Rosenberg
Senior Assistant Chief Accountant