

Mail Stop 6010

February 27, 2007

VIA U.S. MAIL and FACSIMILE

Adrian T. Dillon
Chief Financial Officer
5301 Stevens Creek Blvd.
Santa Clara, California 95051

RE: Agilent Technologies, Inc.
Form 10-K for the fiscal year ended October 31, 2006
Filed December 22, 2006
File No. 001-15405

Dear Mr. Dillon:

We have reviewed your filing and have the following 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 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 information so we may better understand your disclosure. 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 numbers listed at the end of this letter.

Form 10-K for the fiscal year ended October 31, 2006

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operation, page 33

Critical Accounting Policies and Estimates, page 34

Share-based compensation, page 36

1. We see that during fiscal year 2006 you used the implied volatility of your publicly traded stock options to estimate the stock price volatility, while in 2005 you used equally weighted historical volatility and market-based implied volatility. Please tell us why you determined that implied volatility is more reflective of market conditions and a better indicator of expected volatility. Your explanation should include (a) why you changed your method of determining estimated volatility and (b) why you now only use implied volatility and not a combination of historical volatility and implied volatility. Your response should also include your evaluation of the factors listed in Questions 2 and 3 of SAB Topic 14.D.1. In future filings, provide the disclosures in Question 5 of SAB Topic 14.D.1, SEC Release No. FR-60 and Section V, "Critical Accounting Estimates," in SEC Release No. FR-72.

As appropriate, please respond to these comments within 10 business days or tell us when you will provide us with a response. Please furnish a cover letter with your response that keys your responses to our comments and provides any requested information. Detailed cover letters greatly facilitate our review. Please understand that we may have additional comments after reviewing your 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 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

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- 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 Kristin Lochhead at (202) 551-3664 or me at (202) 551-3676 if you have questions. In this regard, please do not hesitate to contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any other questions.

Sincerely,

Brian Cascio
Accounting Branch Chief