



DIVISION OF
CORPORATION FINANCE

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

December 23, 2010

Timothy C. Barabe
Executive Vice President and Chief Financial Officer
Affymetrix, Inc.
3420 Central Expressway
Santa Clara, CA 95051

Re: Affymetrix, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 1, 2010
File No. 000-28218

Dear Mr. Barabe:

We have reviewed your filing and have the following comments. We have limited our review to only your financial statements and related disclosures and do not intend to expand our review to other portions of your documents. 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 within ten business days by amending your filings, by providing the requested information, or by advising us when you will provide the requested response. 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 filing and the information you provide in response to these comments, we may have additional comments.

Form 10-K for the Fiscal Year Ended December 31, 2009

Item 9A. Controls and Procedures, page 80

1. We reference management's report on internal control over financial reporting on page 80. Please tell us where you have included management's conclusion on the effectiveness of your internal control over financial reporting as of December 31, 2009.

Item 15. Exhibits and Financial Statement Schedules, page 83

2. Please tell us where you have filed the Consent of Independent Registered Public Accounting Firm listed in the Exhibits to your Form 10-K.

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 Exchange Act of 1934 and all applicable Exchange 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.

In responding to our comments, please provide a written 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.

You may contact Praveen Kartholy at (202) 551-3778 or me at (202) 551-3676 if you have questions regarding comments on the financial statements and related matters. Please contact Martin James, Senior Assistant Chief Accountant, at (202) 551-3671 with any other questions.

Sincerely,

Brian Cascio
Accounting Branch Chief