



DIVISION OF
CORPORATION FINANCE
Mail Stop 3030

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

August 31, 2009

Kevin M. King
Director, President and Chief Executive Officer
Affymetrix, Inc.
3420 Central Expressway
Santa Clara, California 95051

Re: Affymetrix, Inc.
Form 10-K for the Fiscal Year Ended December 31, 2008
Filed March 2, 2009
Form 10-K/A for the Fiscal Year Ended December 31, 2008
Filed April 30, 2009
File No. 000-28218

Dear Mr. King:

We have reviewed your filing and have the following comments. Where indicated, we think you should revise your documents in response to these comments in all future filings with the Commission. 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 December 31, 2008

Item 7. Management's Discussion and Analysis, page 34

Royalty and Other Revenue, page 41

1. Please tell us and disclose in future filings the nature of the non-recurring \$90 million intellectual property payment received in January 2008 and the related accounting treatment. Clarify the basis for recording the entire amount to revenue

upon receipt and how this is consistent with your accounting policies discussed on page 35 and in Note 2 on page 63.

Restructuring, page 50

2. Please tell us and disclose in future filings the specific reasons for the \$37.2 million impairment of certain long-lived manufacturing assets. Clarify the methodology and assumptions you used to determine the amount of the impairment. In addition, the notes to your financial statements should disclose the specific assets that were impaired.

Financial Statements, page 51

Note 2 – Goodwill and Acquired Technology Rights, page 61

Note 10 – Goodwill and Acquired Technology Rights, page 81

3. We reference your discussion on pages 45 and 61 that the continued decline in your stock price, the resulting book value per share being in excess of market value per share, other conditions in the business such as decreases in actual revenues as compared to forecasted revenues and additional restructuring activities were all indicators of impairment of goodwill and other intangibles. We also note that you performed an interim impairment assessment at December 31, 2008 using a market based approach and determined that the carrying amount of goodwill was not recoverable and recorded an impairment charge of \$239.1 million for the entire balance of goodwill. Please respond to the following:
 - Please provide us a summary of your goodwill impairment evaluation for the interim period ended December 31, 2008. The response should: (1) identify the significant assumptions underlying your determination of the fair value of the reporting unit, (2) explain the basis for those assumptions, and (3) explain why you believe those assumptions are appropriate in GAAP.
 - Please explain to us any significant changes in methods, models or assumptions used in evaluating goodwill for impairment as of December 31, 2008 from those applied in the third quarter 2008 or during the annual impairment test in June 2008.
 - Tell us how you determined that the entire amount of goodwill was not recoverable and the reason that the significant goodwill recorded in the fiscal 2008 acquisitions, particularly the December 31, 2008 acquisition, was not recoverable. Please clarify the specific events or circumstances that resulted in an impairment of the entire amount of goodwill.

- Considering the significant impairment in goodwill please tell us how you determined that the acquired technology rights were recoverable at December 31, 2008.

Note 6 – Fair Value of Financial Instruments, page 76

4. Please tell us the reason for the significant decrease in estimated fair value of your convertible notes at December 31, 2008 and the reason that the estimated fair value is significantly below the carrying value of the notes.

Exhibits 31.1 and 31.2

5. We note that your certifications filed pursuant to Exchange Act Rule 13a-14(a) are not in the exact form prescribed by Item 601(b)(31) of Regulation S-K. Specifically, your Chief Executive Officer and Chief Financial Officer have included their titles in the first line of the certification, and in paragraph 4(d), you have removed the language “(the registrant’s fourth fiscal quarter in the case of an annual report).” Further, paragraph 4(d) in each of the certifications accompanying your Forms 10-Q for March 31, 2009 and June 30, 2009 refers to the fourth quarter. Please ensure that in future filings the certifications conform to the exact wording required by Item 601(b)(31) of Regulation S-K.

Form 10-K/A for fiscal year ended December 31, 2008

Item 11. Executive Compensation, page 3

Cash Performance Bonus Program, page 5

6. We note that you have not provided a quantitative discussion of the financial and strategic targets the Compensation Committee used in determining whether any awards would be made pursuant to the cash performance bonus program. In future filings, please discuss the specific performance objectives established for the year. Refer to Item 402(b)(2)(v) of Regulation S-K.

Grants During 2008, page 6

7. We note your disclosure that grants of equity awards are based on position, responsibilities, performance, and contribution of your named executive officers, as well as competitive equity award data from peer companies. Tell us, and in future filings provide specific disclosure and analysis of how individual performance contributes to actual compensation for named executive officers. For instance, we note that Mr. Fodor’s total equity awards increased 141% from the prior year and that Mr. Batty’s increased 159%; however, the reasons for the

increase are not clear from the disclosure. Please tell us, and in future filings discuss, the reasons for this change.

8. With respect to the data you have analyzed from peer companies in making equity award grants and other compensation decisions, please tell us, and in future filing discuss, how the grants made to your named executive officers relate to the data, and identify the companies used in your comparison. If any of your named executive officers received grants at materially different levels from the 50th percentile target, please provide discussion and analysis as to why. Refer to Item 402(b)(2)(xiv) of Regulation S-K.

Item 13. Certain Relationships and Related Transactions, page 16

9. It appears from your disclosure in Note 12 to the financial statements that notes receivable from employees were paid in full in 2008. Please tell us why the repayment of these notes was not required to be disclosed pursuant to Item 404 of Regulation S-K. Further, please explain why the fees and options in Perlegen Sciences, Inc. that were paid or granted in 2008 to Mr. Young and Dr. Berg were not required to be disclosed pursuant to Item 404.

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 response letter that keys your responses to our comments and provides any requested information. Confirm that you will comply with these comments in all future filings with the Commission. 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 filings to be certain that the filings 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

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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 filings or in response to our comments on your filings.

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 Joseph McCann at (202) 551-6262 or Mary Beth Breslin at (202) 551-3625 if you have questions on other comments.

Sincerely,

Brian Cascio
Accounting Branch Chief