

Mail Stop 0306

October 18, 2006

Mr. Gabriel B. Vegh
Chairman, Chief Executive Officer, and
Acting Chief Financial Officer
Cardima, Inc.
47266 Benicia Street
Fremont, CA 94538-7330

**RE: Cardima, Inc.
Form 10-K for Fiscal Year Ended December 31, 2005
Filed May 5, 2006
Form 10-QSB for the Quarterly Period Ended June 30, 2006
File No. 000-22419**

Dear Mr. Vegh:

We have reviewed your response letter dated October 13, 2006 and filings and have the following comments. Where indicated, we think you should revise your documents 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 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 Fiscal Year Ended December 31, 2005

Item 9A. Controls and Procedures, page F-30

1. As previously requested in comment 1 of our September 1, 2006 letter, please revise to disclose in greater detail the underlying nature of the material weaknesses you are identifying.

Financial Statements, page F-1

Note 1. Nature of Business and Summary of Significant Accounting Policies, page F-8

- Reclassification of Previously Reported Financial Results, page F-8

2. As previously requested in comment 2 of our September 1, 2006 letter, please respond to the following:
 - Describe to us the circumstances which resulted in you initially recording the impairment losses and discuss your reasons for subsequently reversing them.
 - Tell us how your accounting complies with paragraph 15 of SFAS 144 which indicates that when you record an impairment loss, the adjusted carrying amount of the long-lived asset becomes its new cost basis and that restoration of a previously recognized impairment loss is prohibited.
3. As previously requested in comment 3 of our September 1, 2006 letter, please revise to provide all disclosures required by paragraphs 37 and 39 of APB 20. In addition, revise to clearly label the respective columns as “restated”.

Note 3. Short-Term Credit Obligations, page F-15

4. Please refer to your response 2 from your October 13, 2006 letter and prior comment 4 from our September 1, 2006 letter. Please tell us and revise this note to disclose the material terms of the notes payable to Apex International. Disclose the following:
- the interest rate and any conditions that could result in adjustments to that rate,
 - the term or maturity date of the note, and
 - the method used to amortize the loan fees over the life of the loan.

Your response indicates that you use the straight-line method to amortize the loan fees. Please revise so that the fees are amortized using the effective interest rate method consistent with paragraph 16 of APB 12, or advise us why the current accounting complies with U.S. GAAP.

5. Please refer to prior comment 5 of our September 1, 2006 letter. Please disclose how you allocated the proceeds of the hybrid instrument between the debt host and freestanding warrant. We note your response 2 in your letter dated October 13, 2006. Please tell us and disclose how you accounted for the excess of the fair value of the warrants of \$3 million over the proceeds of the debt of \$2,690,000 at the date of issuance.

Note 4. Stockholder's Equity, page F-21

6. As previously requested in comment 6 of our September 1, 2006 letter, please tell us and revise to disclose the method and significant assumptions used to value the warrants issued as part of your loan agreements with Apex International.

7. As previously requested in comment 7 of our September 1, 2006 letter, please tell us if you intended to say that because you have recorded the warrants as liabilities, then any benefits to the holder resulting from the increase in common stock prices above \$0.10 will be reflected in the value of the liabilities and will be recorded as an expense on the statement of operations. If so, please revise to clarify the disclosure. Otherwise, please advise us.
8. As previously requested in comment 8 of our September 1, 2006 letter, please confirm that you have analyzed the terms of the warrants to determine whether they meet the definition of a derivative under paragraphs 6 - 9 of SFAS 133, whether they met the scope exception in paragraph 11 of SFAS 133, and, if not, evaluate them further under paragraphs 12 -32 of EITF 00-19 to determine whether the instruments should be accounted for as a liability or an equity instrument. Please confirm that you have appropriately analyzed all warrants and registration rights agreements when considering the appropriate classification and accounting for your warrants, or advise us. Please see the December 1, 2005 "Current Accounting and Disclosure Issues in the Division of Corporation Finance."
9. Please refer to your response 1 in your letter dated October 13, 2006. Please respond to the following:
 - Tell us the method and significant assumptions used to determine the fair value of the warrants for purposes of calculating the impact of the restatement.
 - Tell us and disclose your accounting policy with respect to how you treat registration rights agreements. We note the EITF recently deliberated the impact of these liquidated damages clauses and the effect on the accounting and classification of instruments subject to the scope of EITF 00-19 in EITF 05-4 *The Effect of a Liquidated Damages Clause on a Freestanding Financial Instrument Subject to Issue No. 00-19*. The EITF has not reached a consensus on this issue and has deferred deliberation until the FASB addresses certain questions which could impact a conclusion on this issue. However, in the meantime, please tell us how considered the guidance in EITF 05-4 and the different views on this issue as outlined in Issue Summary No. 1 to EITF 05-4 in analyzing the registration rights agreement.

- Tell us whether you applied your accounting policy with respect to the registration rights consistently in all periods presented in your financial statements.
- If material, please revise your financial statements to account for the warrants as liabilities.

Form 10-Q for the Quarterly Period Ended June 30, 2006

Financial Statements, page 3

Note 3. Debt Financing Transactions, page 9

10. As previously requested in comment 9 of our September 1, 2006 letter, please revise the filing to clearly disclose all the material terms of the Apex convertible note and warrants, including but not limited to, the conditions under which you or the holder may convert into common shares, the conversion rate and any conditions that may result in adjustments to that rate, any conditions under which you or the holder may accelerate payment of the notes, the interest rate and the conditions that result in adjustments to that rate. Likewise, please clearly describe the material terms of the registration rights agreements, including the conditions under which you would be required to pay liquidated damages.
11. As previously requested in comment 10 of our September 1, 2006 letter, please revise the financial statements to describe clearly how you have accounted for the Apex convertible note and warrants, including any related discounts and any embedded derivatives requiring bifurcation pursuant to SFAS 133.
12. As previously requested in comment 11 of our September 1, 2006 letter, please tell us how you considered the guidance in EITF 96-19 in accounting for the debt modification and the conclusions you reached.
13. As previously requested in comment 12 of our September 1, 2006 letter, please tell us how you have applied the guidance in EITF Issue 00-19 in evaluating whether the various features of the Apex convertible note, including for example, the conversion feature, are embedded derivatives that you should separate from the debt host, record as liabilities and account for at fair value under SFAS 133.

In this regard, discuss your conclusion on whether the note meets the definition of conventional convertible debt in paragraph 4 of EITF Issue 00-19. Please provide us with your analysis of each of these features under paragraphs 12-32 of EITF 00-19.

14. As previously requested in comment 13 of our September 1, 2006 letter, please revise the Critical Accounting Estimates section of MD&A to disclose the methodology and significant estimates used to value any of instruments you carry at fair value.

As appropriate, please amend your filings 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 any 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 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 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.

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 Kate Tillan, Assistant Chief Accountant, at (202) 551-3604, if you have questions regarding these comments. In this regard, do not hesitate to contact Brian Cascio, Accounting Branch Chief, at (202) 551-3676, or me, at (202) 551-3671 with any other concerns.

Sincerely,

Martin James
Senior Assistant Chief Accountant