



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

Mail Stop 3030

June 11, 2009

Linda B. Grable
Chief Executive Officer
Imaging Diagnostic Systems, Inc.
5307 NW 35th Terrace
Fort Lauderdale, Florida 33309

**Re: Imaging Diagnostic Systems, Inc.
Registration Statement on Form S-1
Filed June 1, 2009
File No. 333-159641**

Dear Ms. Grable:

We have limited our review of your filings to those issues we have addressed in our comment. Where indicated, we think you should revise your document in response to this comment. 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 or may not 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 comment or any other aspect of our review. Feel free to call us at the telephone numbers listed at the end of this letter.

Fee Table

1. We note that you are seeking to register the resale of 120 million shares of common stock to be issued to Charlton Avenue LLC pursuant to your Sixth Private Equity Credit Agreement dated April 21, 2008. We also note that you have previously registered 115 million shares for resale by Charlton on a prior registration statement declared effective on March 10, 2009. Based on the aggregate number of shares registered under these registration statements relative to the number of outstanding shares held by non-affiliates, this transaction can only proceed as an at-the-market offering if you are eligible to conduct a primary

offering on Form S-3. Since you are not eligible to conduct such an offering on Form S-3, please withdraw your registration statement. You may refile a registration statement including these securities on the later of September 10, 2009 or 60 days from the date on which Charlton and its affiliates have resold substantially all of the shares registered under your prior registration statement.

As appropriate, please amend your registration statement in response to this comment. 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 response to our comment 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 response to our comment.

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 Act of 1933 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.

Notwithstanding our comments, in the event the company requests acceleration of the effective date of the pending registration statement, it should furnish a letter, at the time of such request, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness 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 connection with our review of your submission or in response to our comments on your submission.

Linda B. Grable
Imaging Diagnostic Systems, Inc.
June 11, 2009
Page 3

We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

We direct your attention to Rules 460 and 461 regarding requesting acceleration of a registration statement. Please allow adequate time after the filing of any amendment for further review before submitting a request for acceleration. Please provide this request at least two business days in advance of the requested effective date.

Please contact Mary Beth Breslin at (202) 551-3625 or me at (202) 551-3800 with any questions.

Sincerely,

Peggy Fisher
Assistant Director

cc (via facsimile): Robert B. Macaulay, Esq.