

September 26, 2012

John F. Della Grotta, Esq.
Paul Hastings LLP
695 Town Center Drive, 17th Floor
Costa Mesa, California 92626-1924

Re: Kayne Anderson MLP Investment Company
File Nos. 333-183599 and 811-21593

Dear Mr. Della Grotta:

On August 28, 2012, you filed a registration statement on Form N-2 for Kayne Anderson MLP Investment Company (the “Fund”) in connection with the shelf registration of its common stock and preferred stock. We have reviewed the registration statement, and have provided our comments below. For convenience, we generally organized our comments using headings, defined terms and page numbers found in the registration statement. Where a comment is made in one location, it is applicable to all similar disclosure appearing elsewhere in the registration statement.

PROSPECTUS

Prospectus Summary — The Offering (Page 4)

1. The first sentence of this section states that the Fund may offer, from time to time, shares of its common or preferred stock at prices and on terms to be set forth in prospectus supplements. Please confirm to us that, concurrent with the filing of each prospectus supplement, a legality opinion will be filed with a post-effective amendment regarding each such future offering of common or preferred shares. See Staff Legal Bulletin 19 (Oct. 11, 2011), text at note 26.

Prospectus Summary — Use of Financial Leverage (Page 4)

2. The first paragraph of this section states that the Fund plans to utilize financial leverage through the issuance of preferred stock. Please confirm that expenses associated with issuing preferred stock will be estimated in the Fund's fee table.

Prospectus Summary — Derivatives and Other Strategies (Page 5)

3. The third paragraph of this section states that the Fund may engage in short sales. Please confirm that the fee table will include, as an expense, an estimate of dividends paid on the Fund's short sale transactions. See AICPA Audit and Accounting Guide: Investment Companies ¶ 7.101(j) (May 1, 2011).

Kayne Anderson MLP Investment Company (Page 9)

4. The second paragraph of this section states that, as of July 31, 2012, the Fund had approximately 83.2 million shares outstanding. However, the table following this disclosure shows 88.2 million shares outstanding as of July 31, 2012. Please explain to us the reason for this difference.

GENERAL COMMENTS

5. Where a comment is made in one location, it is applicable to all similar disclosure appearing elsewhere in the registration statement.

6. We note that portions of the filing are incomplete. We may have additional comments on such portions when you complete them in pre-effective amendments, on disclosures made in response to this letter, on information you supply to us, or on exhibits added in any pre-effective amendments.

7. If you intend to omit certain information from the form of prospectus included with the registration statement that is declared effective, in reliance on Rule 430A under the Securities Act, please identify the omitted information to us, preferably before filing the final pre-effective amendment.

8. Please advise us if you have submitted or expect to submit an exemptive application or no-action request in connection with your registration statement.

9. Responses to this letter should be in the form of a pre-effective amendment filed pursuant to Rule 472 under the Securities Act. Where no change will be made in the filing in response to a comment, please indicate this fact in a letter to us and briefly state the basis for your position.

10. We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing reviewed by the staff to be certain that they have provided all information investors

require to make an informed decision. Since the Fund and its management are in possession of all facts relating to the Fund's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

* * * * *

Notwithstanding our comments, in the event the Fund 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 Fund from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the Fund may not assert this action 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 Investment Management in connection with our review of your filing or in response to our comments on your filing.

We will consider a written request for acceleration of the effective date of the registration statement as a confirmation of the fact that those requesting acceleration are aware of their respective responsibilities. We will act on the request and, pursuant to delegated authority, grant acceleration of the effective date.

Should you have any questions prior to filing an amendment, please feel free to contact me at (202) 551-6959.

Sincerely,

Edward P. Bartz
Staff Attorney