

Kayne Anderson MLP Investment CO
Form N-Q
October 30, 2008

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM N-Q
QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED
MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-21593

KAYNE ANDERSON MLP INVESTMENT COMPANY

(Exact name of registrant as specified in charter)

717 Texas Avenue, Suite 3100, Houston, Texas

77002

(Address of principal executive offices)

(Zip code)

David Shladovsky, Esq.

KA Fund Advisors, LLC, 1800 Avenue of the Stars, Second Floor, Los Angeles, California 90067

(Name and address of agent for service)

Registrant's telephone number, including area code: (713) 493-2020

Date of fiscal year end: November 30, 2008

Date of reporting period: August 31, 2008

Item 1: Schedule of Investments**KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS****AUGUST 31, 2008****(amounts in 000 s)****(UNAUDITED)**

| Description | No. of Shares/Units | Value |
|---|--------------------------------|--------------|
| Long-Term Investments - 161.1% | | |
| Equity Investments(a) - 160.2% | | |
| Midstream MLP(b) - 108.8% | | |
| Atlas Pipeline Partners, L.P. | 755 | \$ 25,765 |
| Copano Energy, L.L.C. | 3,429 | 108,472 |
| Copano Energy, L.L.C. Unregistered, Class E Units(c)(d) | 157 | 4,792 |
| Crosstex Energy, L.P. | 2,963 | 75,470 |
| DCP Midstream Partners, LP | 250 | 6,120 |
| Duncan Energy Partners L.P. | 213 | 3,852 |
| Eagle Rock Energy Partners, L.P. | 201 | 2,857 |
| El Paso Pipeline Partners, L.P. | 724 | 13,372 |
| Enbridge Energy Partners L.P. | 1,418 | 68,851 |
| Energy Transfer Partners, L.P. | 3,514 | 156,375 |
| Enterprise Products Partners L.P. | 4,963 | 146,175 |
| Global Partners LP(e) | 1,465 | 18,210 |
| Hiland Partners, LP | 162 | 7,447 |
| Holly Energy Partners, L.P. | 184 | 6,199 |
| Magellan Midstream Partners, L.P. | 3,199 | 118,937 |
| MarkWest Energy Partners, L.P. | 2,190 | 75,409 |
| Martin Midstream Partners L.P. | 352 | 11,019 |
| ONEOK Partners, L.P. | 823 | 49,429 |
| Plains All American Pipeline, L.P.(f) | 3,112 | 148,275 |
| Regency Energy Partners LP | 1,949 | 48,575 |
| Spectra Energy Partners, LP | 241 | 5,545 |
| Targa Resources Partners LP | 445 | 10,640 |
| TC PipeLines, LP | 1,194 | 40,786 |
| TEPPCO Partners, L.P. | 463 | 14,846 |
| Western Gas Partners LP | 722 | 11,026 |
| Williams Partners L.P. | 453 | 13,745 |
| Williams Pipeline Partners L.P. | 303 | 5,210 |
| | | 1,197,399 |
| Propane MLP - 7.5% | | |
| Ferrellgas Partners, L.P. | 375 | 7,764 |
| Inergy, L.P. | 2,841 | 74,914 |
| | | 82,678 |
| Shipping MLP - 2.0% | | |

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| | | |
|--|-------|--------|
| Capital Product Partners L.P. | 113 | 1,763 |
| K-Sea Transportation Partners L.P. | 157 | 4,022 |
| Navios Maritime Partners L.P. | 151 | 1,891 |
| OSG America L.P. | 264 | 3,170 |
| Teekay LNG Partners L.P. | 303 | 6,892 |
| Teekay Offshore Partners L.P. | 254 | 4,085 |
| | | 21,823 |
| Coal MLP - 6.6% | | |
| Alliance Resource Partners L.P. | 145 | 6,754 |
| Clearwater Natural Resources, LP Unregistered(c)(g)(h) | 3,889 | 46,667 |
| Clearwater Natural Resources, LP Unregistered Deferred Participation Units (c)(g)(h)(i) | 41 | 167 |
| Natural Resource Partners L.P. | 176 | 6,107 |
| Penn Virginia Resource Partners, L.P. | 517 | 12,876 |
| | | 72,571 |

KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS (CONTINUED)
AUGUST 31, 2008
(amounts in 000 s)
(UNAUDITED)

| <u>Description</u> | No. of Shares/Units | Value |
|--|--------------------------------|------------------|
| Upstream MLP(b) - 9.1% | | |
| Atlas Energy Resources, LLC | 1,566 | \$ 54,933 |
| BreitBurn Energy Partners L.P. | 1,947 | 32,318 |
| Constellation Energy Partners LLC | 717 | 9,945 |
| Legacy Reserves LP | 65 | 1,306 |
| Pioneer Southwest Energy Partners, L.P. | 119 | 2,221 |
| | | 100,723 |
| MLP Affiliates(b) - 16.3% | | |
| Enbridge Energy Management, L.L.C.(j) | 569 | 28,755 |
| Kinder Morgan Management, LLC(j) | 2,708 | 150,271 |
| | | 179,026 |
| General Partner MLP(b) - 7.8% | | |
| Atlas Pipeline Holdings, L.P. | 76 | 2,263 |
| Buckeye GP Holdings L.P. | 173 | 3,286 |
| CNR GP Holdco, LLC Unregistered(c)(g)(h)(k) | N/A | 7,069 |
| Energy Transfer Equity, L.P. | 208 | 6,007 |
| Enterprise GP Holdings L.P. | 1,239 | 36,817 |
| Hiland Holdings GP, LP | 140 | 3,120 |
| Inergy Holdings GP | 108 | 3,520 |
| Magellan Midstream Holdings, L.P. | 1,087 | 24,094 |
| | | 86,176 |
| Other MLP - 2.1% | | |
| Calumet Specialty Products Partners, L.P. | 492 | 7,034 |
| Exterran Partners, L.P. | 702 | 15,576 |
| | | 22,610 |
| Total Equity Investments (Cost \$1,329,656) | | 1,763,006 |

KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS (CONCLUDED)
AUGUST 31, 2008
(amounts in 000 s)
(UNAUDITED)

| | Interest Rate | Maturity Date | Principal Amount | Value |
|---|------------------|------------------|---------------------|--------------|
| Fixed Income Investment - 0.9% | | | | |
| Coal MLP - 0.9% | | | | |
| Clearwater Natural Resources, LP(c)(g) (Cost \$10,156) | (1) | 12/03/09 | \$10,130 | 10,130 |
| Total Long-Term Investments (Cost \$1,339,812) | | | | 1,773,136 |
| Short-Term Investment - 0.9% | | | | |
| Repurchase Agreement - 0.9% | | | | |
| Bear, Stearns & Co. Inc. (Agreement dated 8/29/08 to be repurchased at \$10,266), collateralized by \$10,564 in U.S. Treasury Bonds (Cost \$10,264) | 1.980% | 09/02/08 | | 10,264 |
| Total Investments - 162.0% (Cost \$1,350,076) | | | | 1,783,400 |
| Liabilities | | | | |
| Senior Unsecured Notes | | | | (450,000) |
| Deferred Taxes | | | | (153,003) |
| Other Liabilities | | | | (14,254) |
| Unrealized Depreciation on Interest Rate Swap Contracts | | | | (1,713) |
| Total Liabilities | | | | (618,970) |
| Unrealized Appreciation on Interest Rate Swap Contracts | | | | 106 |
| Income Tax Receivable | | | | 1,202 |
| Other Assets | | | | 9,675 |
| Total Liabilities in Excess of Other Assets | | | | (607,987) |
| Preferred Stock at Redemption Value | | | | (75,000) |
| Net Assets Applicable to Common Stockholders | | | | \$ 1,100,413 |

(a) Unless otherwise noted, equity investments are common units/common

shares.

- (b) Includes Limited Liability Companies.
- (c) Fair valued securities, restricted from public sale.
- (d) Security is currently not paying cash distributions but is expected to pay cash distributions or convert to securities which pay cash distributions within the next 12 months.
- (e) Security or a portion thereof is segregated as collateral on interest rate swap contracts.
- (f) The Company believes that it is an affiliate of Plains All American, L.P.
- (g) Clearwater Natural Resources, LP is a privately-held MLP that the Company believes is a controlled affiliate.
- (h) Security is non-income

producing.

- (i) Holders of Clearwater Natural Resources, LP's deferred participation units are entitled to receive a portion of value realized in a sale or initial public offering by certain of the Partnership's common unitholders.
- (j) Distributions are paid in-kind.
- (k) CNR GP Holdco, LLC is the general partner of Clearwater Natural Resources, LP. The Company owns 83.7% of CNR GP Holdco, LLC and believes it is a controlled affiliate.
- (l) Floating rate unsecured working capital term loan. Interest is paid in-kind at a rate of the higher of one year LIBOR or 4.75% plus 900 basis points (13.75% as of August 31, 2008).

From time to time, certain of the Company's investments may be restricted as to resale. For instance, securities that are not registered under the Securities Act of 1933 and cannot, as a result, be offered for public sale in a non-exempt transaction without first being registered. In other cases, certain of the Company's investments have restrictions such as lock up agreements that preclude the Company from offering these securities for public sale. At August 31, 2008 the Company held the following restricted investments:

| Investment | Security (1) | Type of Restriction | Number of Units, Principal (in 000's) (\$) | Acquisition Date | Cost Basis | Fair Value | Fair Value Per Unit | Percent of Net Assets | Percent of Total Assets |
|--|------------------------------------|---------------------------|---|---------------------|---------------|---------------|------------------------------|--------------------------------|----------------------------------|
| Clearwater Natural Resources, L.P. | Common Units | (2) | 3,889 | (3) | \$ 72,860 | \$ 46,667 | \$12.00 | 4.2% | 2.6% |
| Clearwater Natural Resources, L.P. | Term Loan | (2) | \$10,130 | (4) | 10,156 | 10,130 | n/a | 0.9 | 0.5 |
| Clearwater Natural Resources, L.P. | Deferred Participation Units | (2) | 41 | 3/5/2008 | | 167 | 4.08 | 0.0 | 0.0 |
| CNR GP Holdco, LLC | Interests | (5) | n/a | 3/5/2008 | 1,083 | 7,069 | 7,069 | 0.7 | 0.4 |
| Copano Energy, L.L.C. | Class E Units | (6) | 157 | 10/19/07 | 5,000 | 4,792 | 30.45 | 0.5 | 0.3 |
| | | | | | \$ 89,099 | \$ 68,825 | | 6.3% | 3.8% |

- (1) Restricted security that represent Level 3 under SFAS No. 157. Security is valued using inputs reflecting the Company's own assumptions.
- (2) Security of a privately-held MLP.
- (3) The Company purchased common units

on August 1,
2005 and
October 2,
2006.

(4) The Company purchased term loans on January 11, 2008; February 28, 2008; May 5, 2008; July 8, 2008 and August 6, 2008.

(5) Security of a private company.

(6) Unregistered security of a publicly-traded company.

At August 31, 2008, the cost basis of investments for Federal income tax purposes was \$1,246,518. At August 31, 2008, gross unrealized appreciation and depreciation of investments for Federal income tax purposes were as follows:

| | |
|-------------------------------|------------|
| Gross unrealized appreciation | \$ 628,887 |
| Gross unrealized depreciation | (92,006) |
| Net unrealized appreciation | \$ 536,881 |

The identified cost basis for federal tax purposes is estimated based on information available from the Company's portfolio companies. In some cases, this information is very limited. Accordingly, the actual cost basis may prove higher or lower than the estimated cost basis included in this footnote.

Securities valuation policies and other investment related disclosures are hereby incorporated by reference to the Company's semi-annual report previously filed with the Securities and Exchange Commission on Form N-CSR on August 7, 2008, with a file number 811-21593.

Other information regarding the Company is available in the Company's most recent annual report. This information is also available on the Company's website at <http://www.kaynefunds.com>; or on the website of the Securities and Exchange Commission, <http://www.sec.gov>.

SFAS No. 157. In September 2006, the Financial Accounting Standards Board (FASB) issued Statement of Financial Accounting Standards (SFAS) No. 157, Fair Value Measurements. This standard establishes a single authoritative definition of fair value, sets out a framework for measuring fair value and requires additional disclosures about fair value measurements. SFAS No. 157 applies to fair value measurements already required or permitted by existing standards. SFAS No. 157 is effective for financial statements issued for fiscal years beginning after November 15, 2007 and interim periods within those fiscal years. The changes to current generally accepted accounting principles from the application of this Statement relate to the definition of fair value, the methods used to measure fair value, and the expanded disclosures about fair value measurements.

As of December 1, 2007, the Company adopted SFAS No. 157. The Company has performed an analysis of all existing investments and derivative instruments to determine the significance and character of all inputs to their fair value determination. Based on this assessment, the adoption of this standard did not have any material effect on the Company's net asset value. However, the adoption of the standard does require the Company to provide additional disclosures about the inputs used to develop the measurements and the effect of certain measurements on changes in net assets for the reportable periods as contained in the Company's periodic filings.

SFAS No. 157 establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into the following three broad categories.

Level 1 Quoted unadjusted prices for identical instruments in active markets to which the Company has access at the date of measurement.

Level 2 Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable in active markets. Level 2 inputs are those in markets for which there are few transactions, the prices are not current, little public information exists or instances where prices vary substantially over time or among brokered market makers.

Level 3 Model derived valuations in which one or more significant inputs or significant value drivers are unobservable. Unobservable inputs are those inputs that reflect the Company's own assumptions that market participants would use to price the asset or liability based on the best available information.

The following table presents our assets and liabilities measured at fair value on a recurring basis at August 31, 2008.

| | | Quoted Prices in Active Markets (Level 1) | Prices with Other Observable Inputs (Level 2) | Unobservable Inputs (Level 3) |
|--|---------------------|--|--|--|
| Assets at Fair Value | Total | | | |
| Long-Term Investments | \$ 1,773,136 | \$1,704,311 | | \$68,825 |
| Unrealized appreciation on interest rate swaps | 106 | | \$106 | |
| Total | \$ 1,773,242 | \$1,704,311 | \$106 | \$68,825 |

Liabilities at Fair Value

| | | |
|--|-------|---------|
| Unrealized depreciation on interest rate swaps | 1,713 | \$1,713 |
|--|-------|---------|

The following table presents our assets and liabilities measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at November 30, 2007 and at August 31, 2008.

| Assets at Fair Value Using Unobservable Inputs (Level 3) | | Long-Term Investments |
|---|-------------------|----------------------------------|
| Balance | November 30, 2007 | \$195,919 |
| Transfers out of Level 3 | | (151,962) |
| Realized gains/(losses) | | |
| Unrealized gains, net | | 13,631 |
| Purchases, issuances or settlements | | 11,237 |
| Balance | August 31, 2008 | \$68,825 |

The \$13,631 of unrealized gains, presented in the table above relate to investments that are still held at August 31, 2008.

The Company did not have any liabilities that were measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at November 30, 2007 and at August 31, 2008.

Item 2: Controls and Procedures

(a) As of a date within 90 days from the filing date of this report, the principal executive officer and principal financial officer concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940 (the Act)), were effective based on their evaluation of the disclosure controls and procedures required by Rule 30a-3(b) under the Act and Rules 13a-15(b) or 15d-15(b) under the Securities and Exchange Act of 1934.

(b) There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the Act) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3: Exhibits

1. The certifications of the registrant as required by Rule 30a-2(a) under the Act are exhibits to this report.
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SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

KAYNE ANDERSON MLP INVESTMENT
COMPANY

/s/ Kevin S. McCarthy
Name: Kevin S. McCarthy
Title: Chairman, President and Chief
Executive Officer
Date: October 30, 2008

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

/s/ Kevin S. McCarthy
Name: Kevin S. McCarthy
Title: Chairman, President and Chief
Executive Officer
Date: October 30, 2008

/s/ Terry A. Hart
Name: Terry A. Hart
Title: Chief Financial Officer and Treasurer
Date: October 30, 2008