

Kayne Anderson MLP Investment CO  
Form N-Q  
March 24, 2005

**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)

1800 Avenue of the Stars, Second Floor, Los Angeles, California 90067

(Address of principal executive offices) (Zip code)

David Shladovsky, Esq.

Kayne Anderson Capital Advisors, L.P., 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: (310) 556-2721

Date of fiscal year end: November 30th

Date of reporting period: December 1, 2004 through February 28, 2005

**Item 1: Schedule of Investments**

**KAYNE ANDERSON MLP INVESTMENT COMPANY  
SCHEDULE OF INVESTMENTS  
FEBRUARY 28, 2005  
(unaudited)**

<b>Description</b>	<b>No. of Shares/Units</b>	<b>Value</b>
<b>Long-Term Investments - 109.5%</b>		

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**Equity Investments - 103.3%**

**Pipeline MLP (a) - 79.1%**

Atlas Pipeline Partners, L.P.	11,200	\$ 499,968
Buckeye Partners, L.P.	295,600	12,979,796
Copano Energy, L.L.C	72,700	2,029,784
Crosstex Energy, L.P.	140,300	4,955,536
Enbridge Energy Management, L.L.C. (c)	402,204	21,328,897
Enbridge Energy Partners, L.P.	446,300	24,122,515
Enbridge Energy Partners, L.P. (d)	1,503,900	77,165,109
Energy Transfer Partners, L.P.	120,800	7,707,040
Energy Transfer Partners, L.P. - Unregistered (d)	2,222,222	134,196,431
Enterprise Products Partners L.P.	800,215	21,381,745
Enterprise Products Partners L.P. - Unregistered (d)	4,427,878	111,807,019
Genesis Energy, L.P.	89,000	1,014,600
Hiland Partners, LP (b)	30,000	913,500
Holly Energy Partners, L.P.	105,000	4,089,750
Kaneb Pipe Line Partners, L.P.	484,900	29,748,615
Kinder Morgan Management, LLC (c)	2,577,698	110,634,784
Magellan Midstream Partners, L.P.	156,800	9,509,920
MarkWest Energy Partners, L.P.	103,000	5,061,420
Northern Border Partners, L.P.	401,500	20,516,650
Pacific Energy Partners, L.P.	405,100	13,129,291
Plains All American Pipeline, L.P.	901,800	35,296,452
Sunoco Logistics Partners L.P. (f)	12,300	515,370
TC PipeLines, LP	28,649	1,131,349
TEPPCO Partners, L.P.	396,600	17,386,944
Valero L.P.	7,550	469,384
		<hr/>
		667,591,869
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**Propane MLP - 16.3%**

Ferrellgas Partners, L.P.	2,107,923	44,687,967
Inergy, L.P.	21,600	704,160
Inergy, L.P. (d)	2,946,955	91,891,951
		<hr/>
		137,284,078
		<hr/>

**Shipping MLP - 1.7%**

K-Sea Transportation Partners L.P.	44,200	1,601,808
Martin Midstream Partners L.P.	69,315	2,283,236
U.S. Shipping Partners L.P.	384,500	10,427,640
		<hr/>
		14,312,684
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**Coal MLP - 0.3%**

Natural Resource Partners L.P.	4,400	268,532
Penn Virginia Resource Partners, L.P.	44,600	2,416,874
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		2,685,406
		<hr/>

**MLP Affiliates - 5.1%**

Atlas America, Inc. (e)	107,720	4,430,524
Crosstex Energy, Inc.	411,785	17,089,077
Holly Corporation	112,500	4,241,250
Kaneb Services LLC	140,100	6,035,508
Kinder Morgan, Inc.	51,800	4,152,806
MarkWest Hydrocarbon, Inc. (f)	251,300	5,980,940
TransCanada Corporation	38,300	926,094
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		42,856,199
<b>Other Midstream Companies - 0.8%</b>		
Arlington Tankers Ltd.	188,600	4,639,560
DryShips Inc. (b)	90,500	2,022,675
		6,662,235
<b>Total Equity Investments (Cost \$774,930,165)</b>		<b>871,392,471</b>

**KAYNE ANDERSON MLP INVESTMENT COMPANY**  
**SCHEDULE OF INVESTMENTS**  
**FEBRUARY 28, 2005**  
(unaudited)

Description	Interest Rate	Maturity Date	Principal Amount (000 s)	Value
<b>Fixed Income Investments - 6.2%</b>				
<b>Pipeline MLP - 6.2%</b>				
Kinder Morgan Energy Partners, L.P.	5.000%	12/15/13	\$ 10,000	\$ 9,929,140
Kinder Morgan Energy Partners, L.P.	5.125	11/15/14	5,000	4,975,060
Magellan Midstream Partners, L.P.	5.650	10/15/16	12,000	12,162,480
MarkWest Energy Partners, L.P.	6.875	11/01/14	2,100	2,163,000
Plains All American Pipeline, L.P.	7.750	10/15/12	20,000	23,181,780
<b>Total Fixed Income Investments (Cost \$52,551,693)</b>				<b>52,411,460</b>
<b>Total Long-Term Investments (Cost \$827,481,858)</b>				<b>923,803,931</b>
<b>Short-Term Investment - 4.1%</b>				
<b>Repurchase Agreement - 4.1%</b>				
Bear, Stearns & Co. Inc. (Agreement dated 2/28/05 to be repurchased at \$34,432,143), collateralized by \$35,172,786 in U.S. Government Securities (Cost \$34,429,656)	2.600	03/01/05	34,430	34,429,656
<b>Total Investments Before Securities Sold Short - 113.6% (Cost \$861,911,514)</b>				<b>958,233,587</b>

	<u>No. of Shares/Units</u>	
<b>Liabilities in Excess of Cash and Other Assets - (13.6)%</b>		
<b>Securities Sold Short - (0.5)%</b>		
<b>Coal MLP - (0.3)%</b>		
Alliance Resource Partners, L.P.	35,087	(2,702,401)
<b>Propane MLP - (0.2)%</b>		
AmeriGas Partners, L.P.	7,000	(205,380)
Suburban Propane Partners, L.P.	33,700	(1,194,665)

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	(1,400,045)
<b>Total Securities Sold Short (cash proceeds received \$3,866,630)</b>	<b>(4,102,446)</b>
<b>Other Liabilities in Excess of Cash and Other Assets - (13.1)%</b>	
<b>Bank Loan Payable - (8.9)%</b>	(75,000,000)
<b>Current and Deferred Taxes Payable - (4.7)%</b>	(39,508,517)
<b>Cash and Other Assets in Excess of Other Liabilities - 0.5%</b>	4,232,334
<b>Total Liabilities in Excess of Cash and Other Assets</b>	<b>(114,378,629)</b>
<b>Net Assets - 100.0%</b>	<b>\$ 843,854,958</b>

- (a) Includes Limited Liability Companies or L.L.C.s.
- (b) Currently non-income producing; security is expected to pay distributions within the next 12 months.
- (c) Distributions made are paid-in kind.
- (d) Fair valued security. These securities are restricted from public sale. Details are provided in the table below. The Company negotiates certain aspects of the method and timing of the disposition of these investments, including registration rights and related costs.
- (e) Security is non-income producing.
- (f) Security or a portion thereof is segregated as collateral on securities sold short.

Certain of the Company's investments are restricted as to resale and are valued as determined in accordance with procedures established by the Board of Directors. The table below shows the number of units held, the acquisition dates, aggregate costs, fair value as of February 28, 2005, value per unit of such securities, percent of net assets and total assets which the securities comprise.

Security	Number of Units	Acquisition Date	Cost	Fair Value at 2/28/05	Value Per Unit	Percent of Net Assets	Percent of Total Assets
Enbridge Energy Partners, L.P.	1,503,900	02/11/05	\$ 75,017,012	\$ 77,165,109	\$51.31	9.1%	8.0%
Energy Transfer Partners, L.P. - Unregistered	2,222,222	01/26/05	120,014,167	134,196,431	60.39	15.9	13.8
Enterprise Products Partners L.P. - Unregistered	4,427,878	12/29/04	100,011,619	111,807,019	25.25	13.3	11.5
Inergy, L.P.	2,946,955	12/17/04	75,015,213	91,891,951	31.18	10.9	9.5
			<b>\$ 370,058,011</b>	<b>\$ 415,060,510</b>		<b>49.2%</b>	<b>42.8%</b>

At February 28, 2005, the cost basis of investments for Federal income tax purposes was \$861,911,514. At February 28, 2005, gross unrealized appreciation and depreciation of investments for Federal income tax purposes were as follows:

Gross unrealized appreciation	\$ 96,608,760
Gross unrealized depreciation	(286,687)
<b>Net unrealized appreciation</b>	<b>\$ 96,322,073</b>

Securities valuation policies and other investment related disclosures are hereby incorporated by reference to the Company's annual report previously filed with the Securities and Exchange Commission on Form N-CSR.

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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.kaynemlp.com>; or on the website of the Securities and Exchange Commission, <http://www.sec.gov>.

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### 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  
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Name: Kevin S. McCarthy  
Title: Chief Executive Officer  
Date: March 24, 2005

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  
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Name: Kevin S. McCarthy  
Title: Chief Executive Officer  
Date: March 24, 2005

/s/ Ralph Collins Walter  
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Name: Ralph Collins Walter  
Title: Chief Financial Officer  
Date: March 24, 2005