

Kayne Anderson MLP Investment CO
Form N-CSR
July 28, 2010

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM N-CSR
CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES
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, 717 Texas Avenue, Suite 3100, Houston, Texas 77002

(Name and address of agent for service)

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

Date of fiscal year end: November 30, 2010

Date of reporting period: May 31, 2010

Form N-CSR is to be used by management investment companies to file reports with the Commission not later than 10 days after the transmission to stockholders of any report that is required to be transmitted to stockholders under Rule 30e-1 under the Investment Company Act of 1940 (17 CFR 270.30e-1). The Commission may use the information provided on Form N-CSR in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-CSR, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-CSR unless the Form displays a currently valid Office of Management and Budget (OMB) control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. § 3507.

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Item 1. Reports to Stockholders.

The report of Kayne Anderson MLP Investment Company (the Registrant) to stockholders for the semi-annual period ended May 31, 2010 is attached below.

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Exhibit 99 CERT

Exhibit 99.906 CERT

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS: This report of Kayne Anderson MLP Investment Company (the Company) contains forward-looking statements as defined under the U.S. federal securities laws. Generally, the words believe, expect, intend, estimate, anticipate, project, will and similar identify forward-looking statements, which generally are not historical in nature. Forward-looking statements are subject to certain risks and uncertainties that could cause actual results to materially differ from the Company s historical experience and its present expectations or projections indicated in any forward-looking statements. These risks include, but are not limited to, changes in economic and political conditions; regulatory and legal changes; master limited partnership industry risk; leverage risk; valuation risk; interest rate risk; tax risk; and other risks discussed in the Company s filings with the Securities and Exchange Commission (SEC). You should not place undue reliance on forward-looking statements, which speak only as of the date they are made. The Company undertakes no obligation to update or revise any forward-looking statements made herein. There is no assurance that the Company s investment objectives will be attained.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
MANAGEMENT DISCUSSION
FOR THE QUARTER ENDED MAY 31, 2010
(UNAUDITED)**

Overview

Kayne Anderson MLP Investment Company is a non-diversified, closed-end fund formed in September 2004. Our investment objective is to obtain a high after-tax total return by investing at least 85% of our total assets in energy-related master limited partnerships and their affiliates (MLPs) and in other companies that operate assets used in the gathering, transporting, processing, storing, refining, distributing, mining or marketing of natural gas, natural gas liquids, crude oil, refined petroleum products or coal (collectively with MLPs, Midstream Energy Companies). As of May 31, 2010, we had total assets of \$2.1 billion, net assets applicable to our common stock of \$1.3 billion (\$21.90 per share), and 58.4 million shares of common stock outstanding.

Our investments are principally in equity securities issued by MLPs, but we may also invest in debt securities of MLPs and other Midstream Energy Companies. As of May 31, 2010, we held \$2.0 billion in equity investments and \$40.9 million in fixed income investments.

Financial Results

During the quarter ended May 31, 2010, our net asset value (NAV) per share decreased from \$22.23 to \$21.90, and total assets increased from \$2.0 billion to \$2.1 billion. The decrease in NAV was driven primarily by unrealized losses on our investments. The increase in total assets was a result of new investments which were purchased with net proceeds from our new senior unsecured notes and our offering of mandatory redeemable preferred stock. During the quarter, our net distributable income was \$0.48 per common share. We provide a detailed calculation of net distributable income below under Quarterly Distribution to Common Stockholders.

Recent Events

Senior Unsecured Notes and Preferred Stock Offering. On May 7, 2010, we completed a private placement with institutional investors of \$110 million of senior unsecured notes and \$110 million of mandatory redeemable preferred stock. Net proceeds from such offerings were used to repay short-term borrowings, to redeem all of the Company's Series D Auction Rate Preferred Stock (the ARP Shares) (\$75 million outstanding), to make new portfolio investments and for general corporate purposes. We completed the redemption of the ARP Shares on May 28, 2010.

Credit Facility. On June 11, 2010, we entered into a new unsecured revolving credit facility with a syndicate of lenders with availability of \$100 million. The credit facility has a three-year commitment terminating on June 11, 2013. Outstanding loan balances will accrue interest daily at a rate equal to the one-month LIBOR plus 1.75% based on current asset coverage ratios. The interest rate may vary between LIBOR plus 1.75% to LIBOR plus 3.00%, depending on our asset coverage ratios. We will pay a fee of 0.40% on any unused amounts of the credit facility.

Private Placements. On June 10, 2010 and June 15, 2010, the Company completed two private placements of unregistered common stock to members of senior management of Magellan Midstream Partners, L.P. (MMP) and Inergy Holdings, L.P. (NRGP), respectively. The Company issued a total of 1.5 million shares at an average price of \$23.90 per share. Simultaneous with the issuance of the Company's common stock, the Company purchased \$35 million of NRGP common units and \$9.9 million of MMP common units owned by such members of senior management.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
MANAGEMENT DISCUSSION
FOR THE QUARTER ENDED MAY 31, 2010
(UNAUDITED)**

Quarterly Distribution to Common Stockholders

We pay quarterly distributions to our common stockholders, funded in part by net distributable income (NDI) generated from our portfolio investments. NDI is the amount of income received by us from our portfolio investments less operating expenses, subject to certain adjustments as described below. NDI is a not financial measure under the accounting principles generally accepted in the United States of America (GAAP). Refer to the Reconciliation of NDI to GAAP section below for a reconciliation of this measure to our results reported under GAAP.

Income from portfolio investments includes (a) cash distributions paid by MLPs, (b) paid-in-kind dividends received from MLPs and MLP affiliates (in particular, the two MLP i-shares), (c) interest income from debt securities and (d) net premiums received from the sale of covered calls.

Operating expenses include (a) management fees paid to our investment adviser, (b) other expenses (mostly attributable to fees paid to other service providers), (c) leverage costs, including interest expense and preferred stock distributions and (d) deferred income tax expense/benefit on net investment income/loss.

Net Distributable Income (NDI)

(amounts in millions, except for per share amounts)

	Three Months Ended May 31, 2010
Distributions and Other Income from Investments	
Dividends and Distributions	\$ 32.9
Paid-In-Kind Dividends	3.4
Interest Income	1.0
Net Premiums Received from Call Options Written	1.0
 Total Distributions and Other Income from Investments	 38.3
Expenses	
Investment Management Fee	(6.9)
Other Expenses	(0.9)
 Total Management Fee and Other Expenses	 (7.8)
Interest Expense and Payments on Interest Rate Swap Contracts	(5.4)
Preferred Stock Distributions	(0.5)
Income Tax Benefit	3.2
 Net Distributable Income (NDI)	 \$ 27.8
 Weighted Shares Outstanding	 58.2
NDI per Weighted Share Outstanding	\$ 0.48

Payment of future distributions is subject to Board of Directors approval, as well as meeting the covenants of our debt agreements and terms of our preferred stock.

In determining our quarterly distribution to common stockholders, our Board of Directors considers a number of factors which include but are not limited to:

- NDI generated in the current quarter;
- Expected NDI over the next twelve months; and

Realized and unrealized gains generated by the portfolio.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
MANAGEMENT DISCUSSION
FOR THE QUARTER ENDED MAY 31, 2010
(UNAUDITED)**

On June 15, 2010, we declared our quarterly distribution of \$0.48 per common share for the period March 1, 2010 through May 31, 2010 for a total of \$28.7 million. The distribution was paid on July 9, 2010 to shareholders of record on July 7, 2010.

Distributions and Other Income

Total dividends, distributions and paid-in-kind dividends for the second quarter 2010 were \$36.3 million representing a 6.5% increase from the first quarter 2010. The increase was primarily the result of additional investments made with the net proceeds from senior unsecured notes and preferred stock offering placed on May 7, 2010. During the quarter interest income of \$1 million was slightly higher than the first quarter and net premiums received from call options written were \$1 million which was an increase of \$0.4 million from the first quarter. Market conditions during the second quarter enabled us to generate additional net premiums.

Expenses

Our largest expenses are investment management fees and leverage costs. Management fees are calculated based on the average total assets under management. For the second quarter 2010, management fees were \$6.9 million, compared to \$6.0 million for the first quarter 2010. Increased management fees were driven by increases in our total assets due to additional investments made with the proceeds from senior unsecured notes and preferred stock offering on May 7, 2010.

Interest expense (including payments of interest swaps of \$0.1 million and excluding non-cash amortization of debt issuance costs of \$0.3 million) for the second quarter 2010 was \$5.4 million, compared to \$5.2 million (including payments of interest swaps of \$0.1 million and excluding non-cash amortization of debt issuance costs of \$0.3 million) for the first quarter 2010. Preferred stock distributions for the second quarter were \$0.5 million.

Other expenses of \$0.9 million for the second quarter 2010 were slightly more than \$0.7 million for the first quarter 2010 but in-line with past quarters.

Reconciliation of NDI to GAAP

The difference between distributions and other income from investments in the NDI calculation and total investment income as reported in our Statement of Operations is reconciled as follows:

GAAP recognizes that a significant portion of the cash distributions received from MLPs is characterized as a return of capital and therefore excluded from investment income, whereas the NDI calculation includes the return of capital portion of such distributions.

NDI includes the value of dividends paid-in-kind (*i.e.*, stock dividends), whereas such amounts are not included as investment income for GAAP purposes during the period received, but rather are recorded as unrealized gains upon receipt.

Many of our investments in debt securities were purchased at a discount or premium to the par value of such security. When making such investments, we consider the security's yield to maturity which factors in the impact of such discount (or premium). Interest income reported under GAAP includes the non-cash accretion of the discount (or amortization of the premium) based on the effective interest method. When we calculate interest income for purposes of determining NDI, in order to better reflect the yield to maturity, the accretion of the discount (or amortization of the premium) is calculated on a straight-line basis over the remaining term of the debt security.

We may sell covered call option contracts to generate income or to reduce our ownership of certain securities that we hold. In some cases, we are able to repurchase these call option contracts at a price less than the fee that we received, thereby generating a profit. The amount we received from selling call options, less the amount that we pay to repurchase such call option contracts is included in NDI. For GAAP purposes, income from call option contracts sold is not included in investment income. See Note 2 Significant Accounting Policies for a full discussion of the GAAP treatment of option contracts.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
MANAGEMENT DISCUSSION
FOR THE QUARTER ENDED MAY 31, 2010
(UNAUDITED)**

The treatment of expenses included in NDI also differs from what is reported in the Statement of Operations as follows:

Expenses for purposes of calculating NDI include distributions paid to preferred stockholders.

The non-cash amortization of capitalized debt issuance costs and preferred stock offering costs related to our financings is included in interest and amortization expense for GAAP purposes, but is excluded from our calculation of NDI. Further, write-offs of capitalized debt issuance costs and preferred stock offering costs are excluded from our calculation of NDI, but are included in interest and amortization expense for GAAP purposes.

NDI also includes recurring payments (or receipts) on interest rate swap contracts (excluding termination payments) whereas for GAAP purposes, these amounts are included in the realized gains/losses section of the Statement of Operations.

Liquidity and Capital Resources

Total leverage outstanding at May 31, 2010 of \$590 million is comprised of \$480 million in senior unsecured notes and \$110 million in mandatory redeemable preferred stock. At May 31, 2010, we did not have any borrowings outstanding under our credit facility. Total leverage represented 29% of total assets at May 31, 2010, as compared to 25% of total assets at February 28, 2010.

At May 31, 2010 our asset coverage ratios under the 1940 Act were 389% and 317% for debt and total leverage (debt plus preferred stock), respectively. We currently target an asset coverage ratio with respect to our debt of 375% but at times may be above or below our target depending on market conditions.

At May 31, 2010, we had \$480 million of senior unsecured notes outstanding with the following maturity dates: \$75 million matures in 2011 (Series G); \$60 million matures in 2012 (Series I); \$125 million matures in 2013 (Series K); \$110 million matures in 2014 (Series M and Series N); and \$110 million matures in 2015 (Series O and Series P).

On June 11, 2010, we entered into a new \$100 million unsecured revolving credit facility with a syndicate of lenders. The facility has a three-year commitment terminating on June 11, 2013. With this new credit facility, we were able to increase the size by \$20 million, extend the term from one year to three years, and reduce the interest rate by 0.5% based on current asset coverage ratios. A full copy of the credit facility is available on our website, www.kaynefunds.com.

Our leverage consists of both fixed rate and floating rate obligations. At May 31, 2010 the weighted average interest rate on our leverage was 4.94%.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
PORTFOLIO SUMMARY
FOR THE PERIOD ENDED
(UNAUDITED)
Portfolio Investments by Category ***

May 31, 2010

November 30, 2009

* *As a percentage
of total
investments.*

Top 10 Holdings by Issuer

Holding	Sector	Percent of Total Investments as of	
		May 31, 2010	November 30, 2009
1. Plains All American Pipeline, L.P.	Midstream MLP	8.0%	9.1%
2. Enterprise Products Partners L.P.	Midstream MLP	7.4	7.7
3. Magellan Midstream Partners, L.P.	Midstream MLP	6.9	7.9
4. Kinder Morgan Management, LLC	MLP Affiliates	6.7	6.0
5. Inergy, L.P.	Propane MLP	5.8	6.8
6. MarkWest Energy Partners, L.P.	Midstream MLP	5.3	5.3
7. Copano Energy, L.L.C.	Midstream MLP	4.4	4.5
8. Enbridge Energy Partners, L.P.	Midstream MLP	4.2	4.2
9. Energy Transfer Equity, L.P.	General Partner MLP	3.8	4.4
10. Energy Transfer Partners, L.P.	Midstream MLP	3.7	4.8

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KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS
MAY 31, 2010
(amounts in 000 s, except number of option contracts)
(UNAUDITED)

Description	No. of Shares/Units	Value
Long-Term Investments 158.9%		
Equity Investments(a) 155.7%		
Midstream MLP(b) 109.5%		
Boardwalk Pipeline Partners, LP	484	\$ 13,486
Buckeye Partners, L.P.	801	45,392
Copano Energy, L.L.C.(c)	3,659	89,757
Crosstex Energy, L.P.(d)	2,044	19,744
DCP Midstream Partners, LP	962	28,752
Duncan Energy Partners L.P.	451	11,429
El Paso Pipeline Partners, L.P.	1,221	33,687
Enbridge Energy Partners, L.P.(c)	1,732	86,224
Energy Transfer Partners, L.P.	1,738	76,636
Enterprise Products Partners L.P.(c)	4,516	151,724
Exterran Partners, L.P.	1,129	23,095
Global Partners LP	1,346	28,660
Holly Energy Partners, L.P.	661	26,584
Magellan Midstream Partners, L.P.	3,261	142,775
MarkWest Energy Partners, L.P.	3,716	108,773
Martin Midstream Partners L.P.	318	9,409
Niska Gas Storage Partners LLC(e)	209	3,930
ONEOK Partners, L.P.	910	54,522
PAA Natural Gas Storage, L.P.(e)(f)	244	5,795
Plains All American Pipeline, L.P.(f)	2,876	165,564
Quicksilver Gas Services LP	799	14,564
Regency Energy Partners LP	3,305	76,012
Spectra Energy Partners, LP	285	8,823
Sunoco Logistics Partners L.P.	206	13,587
Targa Resources Partners LP	846	19,159
TC PipeLines, LP(c)	516	19,613
TransMontaigne Partners L.P.	653	18,405
Western Gas Partners, LP	951	21,193
Williams Partners L.P.	1,682	62,679
Williams Pipeline Partners L.P.	709	19,834
		1,399,807
MLP Affiliates(b) 13.9%		
Enbridge Energy Management, L.L.C.(g)	790	38,298
Kinder Morgan Management, LLC(g)	2,502	138,613
		176,911

General Partner MLP 14.0%

Alliance Holdings GP L.P.	961	29,902
Buckeye GP Holdings L.P.	72	2,224
Energy Transfer Equity, L.P.	2,572	79,099
Enterprise GP Holdings L.P.	1,245	53,959
Inergy Holdings, L.P.	13	1,038
Penn Virginia GP Holdings, L.P.	730	13,028
		179,250

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS
MAY 31, 2010
(amounts in 000 s, except number of option contracts)
(UNAUDITED)

Description	No. of Shares/Units	Value	
Propane MLP 9.3%			
Inergy, L.P.	3,252	\$ 118,803	
Shipping MLP 7.4%			
Capital Product Partners L.P.	1,283	9,648	
Navios Maritime Partners L.P.	1,410	22,260	
Teekay LNG Partners L.P.	1,121	32,388	
Teekay Offshore Partners L.P.	1,029	20,129	
Teekay Tankers Ltd.	936	10,253	
		94,678	
Upstream MLP 1.0%			
EV Energy Partners, L.P.	135	3,940	
Legacy Reserves LP	404	9,046	
		12,986	
Coal MLP 0.6%			
Alliance Resource Partners, L.P.	82	3,727	
Natural Resource Partners L.P.	88	1,972	
Penn Virginia Resource Partners, L.P.	68	1,422	
		7,121	
Total Equity Investments (Cost \$1,421,693)		1,989,556	
	Interest Rate	Maturity Date	Principal Amount
Energy Debt Investments 3.2%			
Midstream MLP (b) 1.5%			
Crosstex Energy, L.P.	8.875%	2/15/18	\$ 15,000
Niska Gas Storage U.S., LLC	8.875	3/15/18	5,000
			19,800
Upstream MLP(b) 1.3%			
Atlas Energy Resources, LLC	12.125	8/1/17	9,000

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Atlas Energy Resources, LLC	10.750	2/1/18	6,000	6,360
				16,350
Coal MLP 0.4%				
Clearwater Natural Resources, LP(d)(h)(i)	N/A	12/3/09	13,601	4,760
Total Energy Debt Investments (Cost \$47,914)				40,910
Total Long-Term Investments (Cost \$1,469,607)				2,030,466

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS
MAY 31, 2010
(amounts in 000 s, except number of option contracts)
(UNAUDITED)

Description	Interest Rate	Maturity Date	Value
Short-Term Investment 2.1%			
Repurchase Agreement 2.1%			
J.P. Morgan Securities Inc. (Agreement dated 5/28/10 to be repurchased at \$26,983), collateralized by \$27,516 in U.S. Treasury bill (Cost \$26,983)	0.120%	6/1/10	\$ 26,983
Total Investments 161.0% (Cost \$1,496,590)			2,057,449
		No. of Contracts	
Liabilities			
Call Option Contracts Written(d)			
Midstream MLP			
Copano Energy, L.L.C., call option expiring 6/19/10 @ \$25.00		900	(50)
Enbridge Energy Partners L.P., call option expiring 6/19/210 @ \$50.00		1,024	(92)
Enterprise Products Partners L.P., call option expiring 6/19/10 @ \$35.00		800	(28)
TC PipeLines, LP, call option expiring 6/19/10 @ \$35.00		1,499	(476)
Total Call Option Contracts Written (Premiums Received \$292)			(646)
Senior Unsecured Notes			(480,000)
Mandatory Redeemable Preferred Stock at Redemption Value			(110,000)
Deferred Tax Liability			(179,275)
Other Liabilities			(19,924)
Total Liabilities			(789,845)
Other Assets			10,416
Total Liabilities in Excess of Other Assets			(779,429)
Net Assets Applicable to Common Stockholders			\$ 1,278,020

(a) Unless otherwise noted, equity investments are common

units/common shares.

- (b) Includes Limited Liability Companies.
- (c) Security or a portion thereof is segregated as collateral on option contracts written.
- (d) Security is non-income producing.
- (e) Security is currently not paying cash distributions but is expected to pay cash distributions within the next 12 months.
- (f) The Company believes that it is an affiliate of PAA Natural Gas Storage, L.P. and Plains All American, L.P. See Note 5 Agreements and Affiliations.
- (g) Distributions are paid in-kind.
- (h) Fair valued securities, restricted from public sale. See Notes 2, 3 and 7.

See accompanying notes to financial statements.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
SCHEDULE OF INVESTMENTS
MAY 31, 2010
(amounts in 000 s, except number of option contracts)
(UNAUDITED)**

- (i) Clearwater Natural Resources, LP is a privately-held MLP that the Company believes is a controlled affiliate. On January 12, 2010, Clearwater closed on the sale of all of its reserves and a substantial portion of its operating assets to International Resource Partners, L.P. (IRP). On March 16, 2010, the Bankruptcy Court confirmed Clearwater s plan of reorganization (including such sale of assets to IRP). As part of Clearwater s plan of reorganization, the Company will receive consideration for its unsecured term loan. Such consideration will be in the form of cash and a royalty

interest in the reserves sold. Pursuant to the plan of reorganization, the Company will not receive any consideration for its equity investment in Clearwater or CNR GP Holdco, LLC. In addition to the unsecured term loan, the Company owns 3,889 common units, 34 warrants and 41 unregistered, deferred participation units of Clearwater. The Company assigned no value to these equity investments as of May 31, 2010, 2010. CNR GP Holdco, LLC is the general partner of Clearwater. The Company owns 83.7% of CNR GP Holdco, LLC, which was assigned no value as of May 31, 2010, and believes it is a controlled affiliate. See Notes 3, 5 and 7.

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
STATEMENT OF ASSETS AND LIABILITIES
MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)

ASSETS

Investments at fair value:	
Non-affiliated (Cost \$1,300,290)	\$ 1,854,347
Affiliated (Cost \$81,685)	171,359
Controlled (Cost \$87,632)	4,760
Repurchase agreement (Cost \$26,983)	26,983
Total investments (Cost \$1,496,590)	2,057,449
Deposits with brokers	1,705
Receivable for securities sold	2,815
Interest, dividends and distributions receivable	1,097
Deferred debt issuance and preferred stock offering costs and other assets, net	4,799
Total Assets	2,067,865

LIABILITIES

Payable for securities purchased	2,987
Investment management fee payable	6,929
Accrued directors' fees and expenses	46
Call option contracts written (Premiums received \$292)	646
Accrued expenses and other liabilities	9,962
Deferred tax liability	179,275
Senior Unsecured Notes	480,000
Mandatory Redeemable Preferred Stock, \$25.00 liquidation value per share (4,400,000 shares issued and outstanding)	110,000
Total Liabilities	789,845

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 1,278,020

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS CONSIST OF

Common stock, \$0.001 par value (58,355,112 shares issued and outstanding, 199,990,000 shares authorized)	\$ 58
Paid-in capital	995,191
Accumulated net investment loss, net of income taxes, less dividends	(139,132)
Accumulated realized gains on investments and interest rate swap contracts, net of income taxes	70,747
Net unrealized gains on investments and options, net of income taxes	351,156

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 1,278,020

NET ASSET VALUE PER COMMON SHARE \$ 21.90

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
STATEMENT OF OPERATIONS
(amounts in 000 s)
(UNAUDITED)

	For the Three Months Ended May 31, 2010	For the Six Months Ended May 31, 2010
INVESTMENT INCOME		
Income		
Dividends and distributions:		
Non-affiliated investments	\$ 30,269	\$ 58,679
Affiliated investments	2,689	5,357
Total dividends and distributions	32,958	64,036
Return of capital	(29,240)	(56,551)
Net dividends and distributions	3,718	7,485
Interest	1,022	1,801
Total Investment Income	4,740	9,286
Expenses		
Investment management fees	6,928	12,916
Administration fees	230	431
Professional fees	251	395
Custodian fees	68	124
Reports to stockholders	47	90
Directors fees	46	100
Insurance	46	91
Other expenses	214	402
Total Expenses Before Interest Expense, Preferred Distributions and Taxes	7,830	14,549
Interest expense and amortization of debt issuance costs	5,643	10,949
Distributions on mandatory redeemable preferred stock and amortization of offering costs	441	441
Total Expenses Before Taxes	13,914	25,939
Net Investment Loss Before Taxes	(9,174)	(16,653)
Deferred tax benefit	3,232	5,999
Net Investment Loss	(5,942)	(10,654)
REALIZED AND UNREALIZED GAINS/(LOSSES)		
Net Realized Gains/(Losses)		

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Investments	19,558	31,426
Options	405	389
Payments on interest rate swap contracts	(424)	(664)
Deferred tax expense	(7,230)	(11,526)
Net Realized Gains	12,309	19,625
Net Change in Unrealized Gains/(Losses)		
Investments	2,519	204,746
Options	(315)	528
Interest rate swap contracts	416	205
Deferred tax expense	(969)	(76,027)
Net Change in Unrealized Gains	1,651	129,452
Net Realized and Unrealized Gains	13,960	149,077
NET INCREASE IN NET ASSETS RESULTING FROM OPERATIONS	8,018	138,423
Distributions on Auction Rate Preferred Stock	(98)	(177)
NET INCREASE IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS RESULTING FROM OPERATIONS	\$ 7,920	\$ 138,246

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
STATEMENT OF CHANGES IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS
(amounts in 000 s, except share amounts)

	For the Six Months Ended May 31, 2010 (Unaudited)	For the Fiscal Year Ended November 30, 2009
OPERATIONS		
Net investment loss, net of tax ⁽¹⁾	\$ (10,654)	\$ (15,388)
Net realized gains/(losses), net of tax	19,625	(18,431)
Net change in unrealized gains, net of tax	129,452	369,027
Net Increase in Net Assets Resulting from Operations	138,423	335,208
DIVIDENDS/DISTRIBUTIONS TO AUCTION RATE PREFERRED STOCKHOLDERS		
Dividends	(177) ⁽²⁾	
Distributions return of capital		(539) ⁽³⁾
Dividends/Distributions to Preferred Stockholders	(177)	(539)
DIVIDENDS/DISTRIBUTIONS TO COMMON STOCKHOLDERS		
Dividends	(8,794) ⁽²⁾	
Distributions return of capital	(43,861) ⁽²⁾	(89,586) ⁽³⁾
Dividends/Distributions to Common Stockholders	(52,655)	(89,586)
CAPITAL STOCK TRANSACTIONS		
Proceeds from common stock public offerings of 6,291,600 and 6,223,700 shares of common stock, respectively	148,545	126,030
Underwriting discounts and offering expenses associated with the issuance of common stock	(6,146)	(5,524)
Issuance of 483,971 and 1,179,655 shares of common stock from reinvestment of distributions, respectively	11,753	21,532
Net Increase in Net Assets Applicable to Common Stockholders from Capital Stock Transactions	154,152	142,038
Total Increase in Net Assets Applicable to Common Stockholders	239,743	387,121

NET ASSETS ATTRIBUTABLE TO COMMON STOCKHOLDERS

Beginning of period	1,038,277	651,156
End of period	\$ 1,278,020	\$ 1,038,277

(1) Distributions on the Company's mandatory redeemable preferred stock are treated as an operating expense under GAAP and are included in the calculation of net investment loss. See Note 2 Significant Accounting Policies. As of May 31, 2010, the Company estimates that all of the distributions paid to mandatory redeemable preferred stockholders will a dividend (ordinary income). This estimate is based on the Company's operating results during the period. The actual characterization of the mandatory redeemable preferred stock and distributions made during the

period will not be determinable until after the end of the fiscal year when the Company can determine earnings and profits and, therefore, the characterization may differ from the preliminary estimates.

- (2) This is an estimate of the characterization of the distributions paid to auction rate preferred stockholders and common stockholders for the six months ended May 31, 2010 as either a dividend (ordinary income) or distribution (return of capital). This estimate is based on the Company's operating results during the period. The actual characterization of the auction rate preferred stock and common stock distributions made during the period will not be determinable until after the

end of the fiscal year when the Company can determine earnings and profits and, therefore, the characterization may differ from the preliminary estimates.

- (3) All distributions paid to auction rate preferred stockholders and common stockholders for the fiscal year ended November 30, 2009 were characterized as distributions (return of capital). This characterization is based on the Company's earnings and profits.

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
STATEMENT OF CASH FLOWS
FOR THE SIX MONTHS ENDED MAY 31, 2010
(amounts in 000 s)
(UNAUDITED)

CASH FLOWS FROM OPERATING ACTIVITIES

Net increase in net assets resulting from operations	\$ 138,423
Adjustments to reconcile net increase in net assets resulting from operations to net cash used in operating activities:	
Net deferred tax expense	81,554
Return of capital distributions	56,551
Net realized gains	(31,151)
Unrealized gains on investments, interest rate swap contracts and options written	(205,479)
Accretion of bond discount, net	(57)
Purchase of investments	(415,335)
Proceeds from sale of investments	154,171
Proceeds from sale of short-term investments, net	(20,643)
Decrease in option contracts written, net	(203)
Increase in deposits with brokers	(1,152)
Increase in receivable for securities sold	(2,045)
Increase in interest, dividends and distributions receivable	(203)
Decrease in income tax receivable	63
Amortization of deferred debt issuance costs	597
Amortization of mandatory redeemable preferred stock issuance costs	15
Decrease in other assets, net	(67)
Decrease in payable for securities purchased	(2,541)
Increase in investment management fee payable	1,949
Increase in accrued directors' fees and expenses	2
Increase in accrued expenses and other liabilities	1,690
Net Cash Used in Operating Activities	(243,861)

CASH FLOWS FROM FINANCING ACTIVITIES

Issuance of shares of common stock, net of offering costs	142,399
Proceeds from issuance of senior unsecured notes	110,000
Proceeds from issuance on mandatory redeemable preferred stock	110,000
Redemption of auction rate preferred stock	(75,000)
Offering costs associated with the mandatory redeemable preferred stock	(1,517)
Offering costs associated with revolving credit facility	(36)
Offering costs associated with issuance of senior unsecured notes	(906)
Cash distributions paid to preferred stockholders	(177)
Cash distributions paid to common stockholders	(40,902)
Net Cash Provided by Financing Activities	243,861

NET CHANGE IN CASH**CASH BEGINNING OF PERIOD**

CASH END OF PERIOD

\$

Supplemental disclosure of cash flow information:

Non-cash financing activities not included herein consist of reinvestment of distributions of \$11,753 pursuant to the Company's dividend reinvestment plan. During the six months ended May 31, 2010, the Company received federal and state income tax refunds of \$60 and interest paid was \$8,970.

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
FINANCIAL HIGHLIGHTS
(amounts in 000 s, except share and per share amounts)

	For the Six Months Ended May 31,		For the Fiscal Year Ended November 30,					For the Period September 28, 2004⁽¹⁾ through November 30, 2004
	2010 (Unaudited)	2009	2008	2007	2006	2005		
Per Share of Common Stock⁽²⁾								
Net asset value, beginning of period	\$ 20.13	\$ 14.74	\$ 30.08	\$ 28.99	\$ 25.07	\$ 23.91	\$ 23.70 ⁽³⁾	
Net investment income/(loss)	(0.19)	(0.33)	(0.73)	(0.73)	(0.62)	(0.17)	0.02	
Net realized and unrealized gain/(loss)	2.80	7.50	(12.56)	3.58	6.39	2.80	0.19	
Total income/(loss) from operations	2.61	7.17	(13.29)	2.85	5.77	2.63	0.21	
Auction Rate Preferred Dividends ⁽⁴⁾				(0.10)		(0.05)		
Auction Rate Preferred Distributions return of capital ⁽⁴⁾		(0.01)	(0.10)		(0.10)			
Total dividends and distributions Auction Rate Preferred		(0.01)	(0.10)	(0.10)	(0.10)	(0.05)		
Common Dividends ⁽⁴⁾	(0.16)			(0.09)		(0.13)		
Common Distributions return of capital ⁽⁴⁾	(0.80)	(1.94)	(1.99)	(1.84)	(1.75)	(1.37)		

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Total dividends and distributions Common	(0.96)	(1.94)	(1.99)	(1.93)	(1.75)	(1.50)		
Underwriting discounts and offering costs on the issuance of auction rate preferred stock							(0.03)	
Anti-dilutive effect due to issuance of common stock	0.11	0.12		0.26			0.11	
Anti-dilutive effect due to shares issued in reinvestment of dividends	0.01	0.05	0.04	0.01				
Total capital stock transactions	0.12	0.17	0.04	0.27			0.08	
Net asset value, end of period	\$ 21.90	\$ 20.13	\$ 14.74	\$ 30.08	\$ 28.99	\$ 25.07	\$ 23.91	
Market value per share of common stock, end of period	\$ 25.25	\$ 24.43	\$ 13.37	\$ 28.27	\$ 31.39	\$ 24.33	\$ 24.90	
Total investment return based on common stock market value ⁽⁵⁾	7.5% ⁽⁶⁾	103.0%	(48.8)%	(4.4)%	37.9%	3.7%	(0.4)% ⁽⁶⁾	
Supplemental Data and Ratios⁽⁷⁾								
Net assets applicable to common stockholders, end of period	\$ 1,278,020	\$ 1,038,277	\$ 651,156	\$ 1,300,030	\$ 1,103,392	\$ 932,090	\$ 792,836	
Ratio of Expenses to Average Net Assets								
Management fees	2.1%	2.1%	2.2%	2.3%	3.2%	1.2%	0.8%	
Other expenses	0.3	0.4	0.3	0.2	0.2	0.3	0.4	
Subtotal	2.4	2.5	2.5	2.5	3.4	1.5	1.2	
Interest expense and distributions on mandatory	1.9	2.5	3.4	2.3	1.7	0.8	0.0	

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redeemable preferred stock							
Income tax expense	13.3	25.4	(8)	3.5	13.8	6.4	3.5
Total expenses	17.6%	30.4%	5.9%	8.3%	18.9%	8.7%	4.7%
Ratio of net investment income/(loss) to average net assets	(1.7)%	(2.0)%	(2.8)%	(2.3)%	(2.4)%	(0.7)%	0.5%
Net increase/(decrease) in net assets to common stockholders resulting from operations to average net assets	11.3% ⁽⁶⁾	43.2%	(51.2)%	7.3%	21.7%	10.0%	0.9% ⁽⁶⁾
Portfolio turnover rate	8.1% ⁽⁶⁾	28.9%	6.7%	10.6%	10.0%	25.6%	11.8% ⁽⁶⁾
Average net assets	\$ 1,225,646	\$ 774,999	\$ 1,143,192	\$ 1,302,425	\$ 986,908	\$ 870,672	\$ 729,280
Senior Notes outstanding, end of period	480,000	370,000	304,000	505,000	320,000	260,000	
Revolving credit facility outstanding, end of period				97,000	17,000		

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
FINANCIAL HIGHLIGHTS
(amounts in 000 s, except share and per share amounts)

	For the Six Months Ended May 31, 2010 (Unaudited)	For the Fiscal Year Ended November 30,				2005	For the Period September 28, 2004 ⁽¹⁾ through November 30, 2004
		2009	2008	2007	2006		
Supplemental Data and Ratios continued⁽⁷⁾							
Auction Rate Preferred Stock, end of period		\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	
Mandatory Redeemable Preferred Stock, end of period	\$ 110,000						
Average shares of common stock outstanding	56,570,072	46,894,632	43,671,666	41,134,949	37,638,314	34,077,731	33,165,900
Asset coverage of total debt ⁽⁹⁾	389.2%	400.9%	338.9%	328.4%	449.7%	487.3%	
Asset coverage of total leverage (debt and preferred stock) ⁽¹⁰⁾	316.6%	333.3%	271.8%	292.0%	367.8%	378.2%	
Average amount of borrowings per share of common stock during the period ⁽²⁾	\$ 7.35	\$ 6.79	\$ 11.52	\$ 12.14	\$ 8.53	\$ 5.57	

(1)

Commencement
of operations.

- (2) Based on average shares of common stock outstanding.
- (3) Initial public offering price of \$25.00 per share less underwriting discounts of \$1.25 per share and offering costs of \$0.05 per share.
- (4) The information presented for the six months ended May 31, 2010 is an estimate of the characterization of the distribution paid and is based on the Company's operating results during the period. The information presented for each other period is an actual characterization of a portion of the total distributions paid to preferred stockholders and common stockholders as either a dividend (ordinary income) or a distribution

(return of capital) and is based on the Company's earnings and profits.

- (5) Total investment return is calculated assuming a purchase of common stock at the market price on the first day and a sale at the current market price on the last day of the period reported. The calculation also assumes reinvestment of distributions at actual prices pursuant to the Company's dividend reinvestment plan.
- (6) Not annualized.
- (7) Unless otherwise noted, ratios are annualized for periods of less than one full year.
- (8) For the year ended November 30, 2008, the Company accrued deferred income tax benefits of

\$339,991
(29.7% of
average net
assets) primarily
related to
unrealized
losses on
investments.
Realization of a
deferred tax
benefit is
dependent on
whether there
will be
sufficient
taxable income
of the
appropriate
character within
the carryforward
periods to
realize a portion
or all of the
deferred tax
benefit. No
deferred income
tax benefit has
been included
for the purpose
of calculating
total expense.

- (9) Calculated
pursuant to
section
18(a)(1)(A) of
the 1940 Act.
Represents the
value of total
assets less all
liabilities not
represented by
senior notes or
any other senior
securities
representing
indebtedness
divided by the
aggregate
amount of
senior notes and

any other senior securities representing indebtedness. Under the 1940 Act, the Company may not declare or make any distribution on its common stock nor can it incur additional indebtedness if, at the time of such declaration or incurrence, its asset coverage with respect to senior securities representing indebtedness would be less than 300%. For purposes of this test, the revolving credit facility is considered a senior security representing indebtedness.

- (10) Calculated pursuant to section 18(a)(2)(A) of the 1940 Act. Represents the value of total assets less all liabilities not represented by senior notes, any other senior securities representing indebtedness and preferred stock divided by

the aggregate amount of senior notes, any other senior securities representing indebtedness and preferred stock. Under the 1940 Act, the Company may not declare or make any distribution on its common stock nor can it incur additional preferred stock if at the time of such declaration or incurrence its asset coverage with respect to all senior securities would be less than 200%. For purposes of this test, the revolving credit facility is considered a senior security representing indebtedness.

See accompanying notes to financial statements.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
NOTES TO FINANCIAL STATEMENTS
MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)

1. Organization

Kayne Anderson MLP Investment Company (the Company) was organized as a Maryland corporation on June 4, 2004, and is a non-diversified closed-end management investment company registered under the Investment Company Act of 1940, as amended (the 1940 Act). The Company's investment objective is to obtain a high after-tax total return by investing at least 85% of its net assets plus any borrowings (total assets) in energy-related master limited partnerships and their affiliates (collectively, MLPs), and in other companies that, as their principal business, operate assets used in the gathering, transporting, processing, storing, refining, distributing, mining or marketing of natural gas, natural gas liquids (including propane), crude oil, refined petroleum products or coal (collectively with MLPs, Midstream Energy Companies). The Company commenced operations on September 28, 2004. The Company's shares of common stock are listed on the New York Stock Exchange, Inc. (NYSE) under the symbol KYN.

2. Significant Accounting Policies

A. *Use of Estimates* The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amount of assets and liabilities and disclosure of contingent assets and liabilities as of the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ materially from those estimates.

B. *Calculation of Net Asset Value* The Company determines its net asset value as of the close of regular session trading on the NYSE no less frequently than the last business day of each month, and makes its net asset value available for publication monthly. Currently, the Company calculates its net asset value on a weekly basis. Net asset value is computed by dividing the value of the Company's assets (including accrued interest and distributions), less all of its liabilities (including accrued expenses, distributions payable, current, deferred and other accrued income taxes, and any borrowings) and the liquidation value of any outstanding preferred stock, by the total number of common shares outstanding.

C. *Investment Valuation* Readily marketable portfolio securities listed on any exchange other than the NASDAQ Stock Market, Inc. (NASDAQ) are valued, except as indicated below, at the last sale price on the business day as of which such value is being determined. If there has been no sale on such day, the securities are valued at the mean of the most recent bid and ask prices on such day. Securities admitted to trade on the NASDAQ are valued at the NASDAQ official closing price. Portfolio securities traded on more than one securities exchange are valued at the last sale price on the business day as of which such value is being determined at the close of the exchange representing the principal market for such securities.

Equity securities traded in the over-the-counter market, but excluding securities admitted to trading on the NASDAQ, are valued at the closing bid prices. Energy debt securities that are considered corporate bonds are valued by using the mean of the bid and ask prices provided by an independent pricing service. For energy debt securities that are considered corporate bank loans, the fair market value is determined by the mean of the bid and ask prices provided by the syndicate bank or principal market maker. When price quotes are not available, fair market value will be based on prices of comparable securities. In certain cases, the Company may not be able to purchase or sell energy debt securities at the quoted prices due to the lack of liquidity for these securities.

Exchange-traded options and futures contracts are valued at the last sales price at the close of trading in the market where such contracts are principally traded or, if there was no sale on the applicable exchange on such day, at the mean between the quoted bid and ask price as of the close of such exchange.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
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(amounts in 000 s, except share and per share amounts)
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The Company holds securities that are privately issued or otherwise restricted as to resale. For these securities, as well as any other portfolio security held by the Company for which reliable market quotations are not readily available, valuations are determined in a manner that most fairly reflects fair value of the security on the valuation date. Unless otherwise determined by the Board of Directors, the following valuation process is used for such securities:

Investment Team Valuation. The applicable investments are initially valued by KA Fund Advisors, LLC (KAFAs or the Adviser) investment professionals responsible for the portfolio investments.

Investment Team Valuation Documentation. Preliminary valuation conclusions are documented and discussed with senior management of KAFAs. Such valuations generally are submitted to the Valuation Committee (a committee of the Company's Board of Directors) or the Board of Directors on a monthly basis, and stand for intervening periods of time.

Valuation Committee. The Valuation Committee meets, generally, on or about the end of each month to consider new valuations presented by KAFAs, if any, which were made in accordance with the valuation procedures in such month. Between meetings of the Valuation Committee, a senior officer of KAFAs is authorized to make valuation determinations. The Valuation Committee's valuations stand for intervening periods of time unless the Valuation Committee meets again at the request of KAFAs, the Board of Directors, or the Valuation Committee itself. All valuation determinations of the Valuation Committee are subject to ratification by the Board at its next regular meeting.

Valuation Firm. No less than quarterly, a third-party valuation firm engaged by the Board of Directors reviews the valuation methodologies and calculations employed for these securities.

Board of Directors Determination. The Board of Directors meets quarterly to consider the valuations provided by KAFAs and the Valuation Committee, if applicable, and ratify valuations for the applicable securities. The Board of Directors considers the report provided by the third-party valuation firm in reviewing and determining in good faith the fair value of the applicable portfolio securities.

Unless otherwise determined by the Board of Directors, securities that are convertible into or otherwise will become publicly traded (e.g., through subsequent registration or expiration of a restriction on trading) are valued through the process described above, using a valuation based on the fair value of the publicly traded security less a discount. The discount is initially equal in amount to the discount negotiated at the time the purchase price is agreed to. To the extent that such securities are convertible or otherwise become publicly traded within a time frame that may be reasonably determined, KAFAs may determine an applicable discount in accordance with a methodology approved by the Valuation Committee.

At May 31, 2010, the Company held 0.4% of its net assets applicable to common stockholders (0.2% of total assets) in securities valued at fair value, as determined pursuant to procedures adopted by the Board of Directors, with fair value of \$4,760. See Note 7 Restricted Securities.

D. Repurchase Agreements The Company has agreed to purchase securities from financial institutions, subject to the seller's agreement to repurchase them at an agreed-upon time and price (repurchase agreements). The financial institutions with which the Company enters into repurchase agreements are banks and broker/dealers which KAFAs considers creditworthy. The seller under a repurchase agreement is required to maintain the value of the securities as collateral, subject to the agreement, at not less than the repurchase price plus accrued interest. KAFAs monitors daily the mark-to-market of the value of the collateral, and, if necessary, requires the seller to maintain additional securities so that the value of the collateral is not less than the repurchase price. Default by or bankruptcy of the seller would, however, expose the Company to possible loss because of adverse market action or delays in connection with the disposition of the underlying securities.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
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MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)

E. Short Sales A short sale is a transaction in which the Company sells securities it does not own (but has borrowed) in anticipation of or to hedge against a decline in the market price of the securities. To complete a short sale, the Company may arrange through a broker to borrow the securities to be delivered to the buyer. The proceeds received by the Company for the short sale are retained by the broker until the Company replaces the borrowed securities. In borrowing the securities to be delivered to the buyer, the Company becomes obligated to replace the securities borrowed at their market price at the time of replacement, whatever the price may be.

All short sales are fully collateralized. The Company maintains assets consisting of cash or liquid securities equal in amount to the liability created by the short sale. These assets are adjusted daily to reflect changes in the value of the securities sold short. The Company is liable for any dividends or distributions paid on securities sold short.

The Company may also sell short against the box (*i.e.*, the Company enters into a short sale as described above while holding an offsetting long position in the security which it sold short). If the Company enters into a short sale against the box, the Company segregates an equivalent amount of securities owned as collateral while the short sale is outstanding. At May 31, 2010, the Company had no open short sales.

F. Security Transactions Security transactions are accounted for on the date these securities are purchased or sold (trade date). Realized gains and losses are reported on an identified cost basis.

G. Return of Capital Estimates Distributions received from the Company's investments in MLPs generally are comprised of income and return of capital. The Company records investment income and return of capital based on estimates made at the time such distributions are received. Such estimates are based on historical information available from each MLP and other industry sources. These estimates may subsequently be revised based on information received from MLPs after their tax reporting periods are concluded.

The following table sets forth the Company's estimated total return of capital portion of the distributions received from its investments. The return of capital portion of the distributions is a reduction to investment income, results in an equivalent reduction in the cost basis of the associated investments and increases Net Realized Gains and Net Change in Unrealized Gains in each of the periods presented below.

	Three Months Ended May 31, 2010	Six Months Ended May 31, 2010
Estimated return of capital portion of distributions received	89%	88%
Return of capital attributable to Net Realized Gains	\$ 4,677	\$ 7,912
Return of capital attributable to Net Change in Unrealized Gains	24,563	48,639
Total return of capital	\$ 29,240	\$ 56,551

H. Investment Income The Company records dividends and distributions on the ex-dividend date. Interest income is recognized on the accrual basis, including amortization of premiums and accretion of discounts. When investing in securities with payment in-kind interest, the Company will accrue interest income during the life of the security even though it will not be receiving cash as the interest is accrued. To the extent that interest income to be received is not expected to be realized, a reserve against income is established.

Many of the Company's debt securities were purchased at a discount or premium to the par value of the security. The non-cash accretion of a discount to par value increases interest income while the non-cash amortization of a premium to par value decreases interest income. The accretion of a discount and amortization of premiums are based on the effective interest method. The amount of these non-cash adjustments can be found in the Company's Statement of Cash Flows. The non-cash accretion of a discount increases the cost basis of the debt security, which results in an

offsetting unrealized loss. The non-cash amortization of a premium decreases the cost basis of the debt security which results in an offsetting unrealized gain. To the extent that par value is not expected to be realized, the Company discontinues accruing the non-cash accretion of the discount to par value of the debt security.

During the three and six months ended May 31, 2010, the Company did not record any interest income related to its investment in Clearwater Natural Resources, LP (Clearwater). Since the second quarter of 2009, the Company has not accrued interest income on its investment in Clearwater.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
NOTES TO FINANCIAL STATEMENTS
MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)

The Company's stock dividends and distributions consist of additional units of Enbridge Energy Management, L.L.C. and Kinder Morgan Management, LLC. The additional units are not reflected in investment income during the period received but are recorded as unrealized gains. During the three and six months ended May 31, 2010, the Company received the following stock dividends from Enbridge Energy Management, L.L.C. and Kinder Morgan Management, LLC.

	Three Months Ended May 31, 2010	Six Months Ended May 31, 2010
Enbridge Energy Management, L.L.C.	\$ 768	\$ 1,508
Kinder Morgan Management, LLC	2,627	4,891
Total stock dividends	\$ 3,395	\$ 6,399

I. Distributions to Stockholders Distributions to common stockholders are recorded on the ex-dividend date. Distributions to Mandatory redeemable preferred stockholders are accrued on a daily basis as described in Note 12 Preferred Stock. As required by the Distinguishing Liabilities from Equity topic of the FASB Accounting Standards Codification, the Company includes the accrued distributions on its mandatory redeemable preferred stock as an operating expense due to the fixed term of this obligation. The estimated characterization of the distributions paid to preferred and common stockholders will be either a dividend (ordinary income) or distribution (return of capital). This estimate is based on the Company's operating results during the period. The actual characterization of the preferred and common stock distributions made during the current year will not be determinable until after the end of the fiscal year when the Company can determine earnings and profits and, therefore, the characterization may differ from the preliminary estimates.

J. Partnership Accounting Policy The Company records its pro rata share of the income/(loss) and capital gains/(losses), to the extent of distributions it has received, allocated from the underlying partnerships and adjusts the cost basis of the underlying partnerships accordingly. These amounts are included in the Company's Statement of Operations.

K. Federal and State Income Taxation The Company, as a corporation, is obligated to pay federal and state income tax on its taxable income. The Company invests its assets primarily in MLPs, which generally are treated as partnerships for federal income tax purposes. As a limited partner in the MLPs, the Company includes its allocable share of the MLP's taxable income in computing its own taxable income. Deferred income taxes reflect (i) taxes on unrealized gains/(losses), which are attributable to the temporary difference between fair value and tax basis, (ii) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of accumulated net operating and capital losses. To the extent the Company has a deferred tax asset, consideration is given as to whether or not a valuation allowance is required. The need to establish a valuation allowance for deferred tax assets is assessed periodically by the Company based on the Income Tax Topic of the Financial Accounting Standards Board (FASB) Accounting Standards Codification that it is more likely than not that some portion or all of the deferred tax asset will not be realized. In the assessment for a valuation allowance, consideration is given to all positive and negative evidence related to the realization of the deferred tax asset. This assessment considers, among other matters, the nature, frequency and severity of current and cumulative losses, forecasts of future profitability (which are highly dependent on future cash distributions from the Company's MLP holdings), the duration of statutory carryforward periods and the associated risk that operating and capital loss carryforwards may expire unused.

The Company may rely to some extent on information provided by the MLPs, which may not necessarily be timely, to estimate taxable income allocable to the MLP units held in the portfolio and to estimate the associated deferred tax liability. Such estimates are made in good faith. From time to time, as new information becomes available, the Company modifies its estimates or assumptions regarding the deferred tax liability.

The Company's policy is to classify interest and penalties associated with underpayment of federal and state income taxes, if any, as income tax expense on its Statement of Operations. As of May 31, 2010, the Company does not have any interest or penalties associated with the underpayment of any income taxes. All tax years since inception remain open and subject to examination by tax jurisdictions.

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KAYNE ANDERSON MLP INVESTMENT COMPANY
NOTES TO FINANCIAL STATEMENTS
MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)

L. Derivative Financial Instruments The Company may utilize derivative financial instruments in its operations. **Interest rate swap contracts.** The Company may use interest rate swap contracts to hedge against increasing interest expense on its leverage resulting from increases in short term interest rates. The Company does not hedge any interest rate risk associated with portfolio holdings. Interest rate transactions the Company uses for hedging purposes expose it to certain risks that differ from the risks associated with its portfolio holdings. A decline in interest rates may result in a decline in the value of the swap contracts, which, everything else being held constant, would result in a decline in the net assets of the Company. In addition, if the counterparty to an interest rate swap defaults, the Company would not be able to use the anticipated net receipts under the interest rate swap to offset its cost of financial leverage.

Interest rate swap contracts are recorded at fair value with changes in value during the reporting period, and amounts accrued under the agreements, included as unrealized gains or losses in the Statement of Operations. Monthly cash settlements under the terms of the interest rate swap agreements are recorded as realized gains or losses in the Statement of Operations. The Company generally values its interest rate swap contracts based on dealer quotations, if available, or by discounting the future cash flows from the stated terms of the interest rate swap agreement by using interest rates currently available in the market. See Note 8 Derivative Financial Instruments.

Option contracts. The Company is also exposed to financial market risks including changes in the valuations of its investment portfolio. The Company may purchase or write (sell) call options. A call option on a security is a contract that gives the holder of the option, in return for a premium, the right to buy from the writer of the option the security underlying the option at a specified exercise price at any time during the term of the option.

The Company would normally purchase call options in anticipation of an increase in the market value of securities of the type in which it may invest. The Company would ordinarily realize a gain on a purchased call option if, during the option period, the value of such securities exceeded the sum of the exercise price, the premium paid and transaction costs; otherwise the Company would realize either no gain or a loss on the purchased call option. The Company may also purchase put option contracts. If a purchased put option is exercised, the premium paid increases the cost basis of the securities sold by the Company.

The Company may also write (sell) call options with the purpose of generating income or reducing its ownership of certain securities. The writer of an option on a security has the obligation upon exercise of the option to deliver the underlying security upon payment of the exercise price.

When the Company writes a call option, an amount equal to the premium received by the Company is recorded as a liability and is subsequently adjusted to the current fair value of the option written. Premiums received from writing options that expire unexercised are treated by the Company on the expiration date as realized gains from investments. If the Company repurchases a written call option prior to its exercise, the difference between the premium received and the amount paid to repurchase the option is treated as a realized gain or loss. If a call option is exercised, the premium is added to the proceeds from the sale of the underlying security in determining whether the Company has realized a gain or loss. The Company, as the writer of an option, bears the market risk of an unfavorable change in the price of the security underlying the written option. See Note 8 Derivative Financial Instruments.

M. Indemnifications Under the Company's organizational documents, its officers and directors are indemnified against certain liabilities arising out of the performance of their duties to the Company. In addition, in the normal course of business, the Company enters into contracts that provide general indemnification to other parties. The Company's maximum exposure under these arrangements is unknown, as this would involve future claims that may be made against the Company that have not yet occurred, and may not occur. However, the Company has not had prior claims or losses pursuant to these contracts and expects the risk of loss to be remote.

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3. Fair Value

As required by the Fair Value Measurement and Disclosures of the FASB Accounting Standards Codification, the Company has performed an analysis of all assets and liabilities measured at fair value to determine the significance and character of all inputs to their fair value determination.

The fair value hierarchy 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 the Company's assets measured at fair value at May 31, 2010. Note that the valuation levels below are not necessarily an indication of the risk or liquidity associated with the underlying investment. For instance, the Company's repurchase agreements, which are collateralized by U.S. Treasury notes, are generally high quality and liquid; however, the Company reflects these repurchase agreements as Level 2 because the inputs used to determine fair value may not always be quoted prices in an active market.

	Total	Quoted Prices in Active Markets (Level 1)	Prices with Other Observable Inputs (Level 2)	Unobservable Inputs (Level 3)(1)
Assets at Fair Value				
Equity investments	\$ 1,989,556	\$ 1,989,556	\$	\$
Energy debt investments	40,910		36,150	4,760
Repurchase agreement	26,983		26,983	
Total assets at fair value	\$ 2,057,449	\$ 1,989,556	\$ 63,133	\$ 4,760
Liabilities at Fair Value				
Option contracts written	\$ 646	\$	\$ 646	\$

(1) The Company's investments in Level 3 represent its

investments in
Clearwater
Natural
Resources, L.P.
and CNR GP
Holdco, LLC as
more fully
described in
Note 7
Restricted
Securities.

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The following table presents the Company's assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the three and six months ended May 31, 2010.

Assets at Fair Value Using Unobservable Inputs (Level 3)	Long-Term Investments
Balance February 28, 2010	\$ 4,420
Transfers out of Level 3	
Realized gains/(losses)	
Unrealized gains, net	340
Purchases, issuances or settlements	
 Balance May 31, 2010	 \$ 4,760

Assets at Fair Value Using Unobservable Inputs (Level 3)	Long-Term Investments
Balance November 30, 2009	\$ 4,080
Transfers out of Level 3	
Realized gains/(losses)	
Unrealized gains, net	680
Purchases, issuances or settlements	
 Balance May 31, 2010	 \$ 4,760

The \$340 and \$680 of unrealized gains presented in the table above for the three and six months ended May 31, 2010 related to investments that are still held at May 31, 2010 and the Company includes these unrealized gains in the Statement of Operations Net Change in Unrealized Gains/(Losses).

The Company did not have any liabilities that were measured at fair value on a recurring basis using significant unobservable inputs (Level 3) at May 31, 2010 and at November 30, 2009.

In January 2010, the FASB issued Accounting Standards Update (ASU) No. 2010-06 Improving Disclosures about Fair Value Measurements. ASU 2010-06 amends FASB Accounting Standards Codification Topic, Fair Value Measurements and Disclosures, to require additional disclosures regarding fair value measurements. Certain disclosures required by ASU No. 2010-06 are effective for interim and annual reporting periods beginning after December 15, 2009, and other required disclosures are effective for fiscal years beginning after December 15, 2010, and for interim periods within those fiscal years. Management is currently evaluating the impact ASU No. 2010-06 will have on its financial statement disclosures.

4. Concentration of Risk

The Company's investment objective is to obtain a high after-tax total return with an emphasis on current income paid to its stockholders. Under normal circumstances, the Company intends to invest at least 85% of its total assets in securities of MLPs and other Midstream Energy Companies, and to invest at least 80% of its total assets in MLPs, which are subject to certain risks, such as supply and demand risk, depletion and exploration risk, commodity pricing risk, acquisition risk, and the risk associated with the hazards inherent in midstream energy industry activities. A substantial portion of the cash flow received by the Company is derived from investment in equity securities of MLPs. The amount of cash that an MLP has available for distributions and the tax character of such distributions are

dependent upon the amount of cash generated by the MLP's operations. The Company may invest up to 15% of its total assets in any single issuer and a decline in value of the securities of such an issuer could significantly impact the net asset value of the Company. The Company may invest up to 20% of its total assets in debt securities, which may include below investment grade securities. The Company may, for defensive purposes, temporarily invest all or a significant portion of its assets in investment grade securities, short-term debt securities and cash or cash equivalents. To the extent the Company uses this strategy, it may not achieve its investment objectives.

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5. Agreements and Affiliations

A. Administration Agreement The Company has entered into an administration agreement with Ultimus Fund Solutions, LLC (Ultimus). Pursuant to the administration agreement, Ultimus will provide certain administrative services for the Company. The administration agreement has automatic one-year renewals unless earlier terminated by either party as provided under the terms of the administration agreement.

B. Investment Management Agreement The Company has entered into an investment management agreement with KAFA under which the Adviser, subject to the overall supervision of the Company's Board of Directors, manages the day-to-day operations of, and provides investment advisory services to, the Company. For providing these services, the Adviser receives a management fee from the Company. On June 15, 2010, the Company renewed its agreement with the Adviser for a period of one year. The agreement may be renewed annually upon approval of the Company's Board of Directors. For the six months ended May 31, 2010, the Company paid management fees at an annual rate of 1.375% of average total assets.

For purposes of calculating the management fee, the Company's total assets are equal to the Company's gross asset value (which includes assets attributable to or proceeds from the Company's use of preferred stock, commercial paper or notes and other borrowings and excludes any net deferred tax asset), minus the sum of the Company's accrued and unpaid distributions on any outstanding common stock and accrued and unpaid distributions on any outstanding preferred stock and accrued liabilities (other than liabilities associated with borrowing or leverage by the Company and any accrued taxes, including, a deferred tax liability). Liabilities associated with borrowing or leverage by the Company include the principal amount of any borrowings, commercial paper or notes issued by the Company, the liquidation preference of any outstanding preferred stock, and other liabilities from other forms of borrowing or leverage such as short positions and put or call options held or written by the Company.

C. Portfolio Companies From time to time, the Company may control or may be an affiliate of one or more portfolio companies, each as defined in the 1940 Act. In general, under the 1940 Act, the Company would be presumed to control a portfolio company if the Company owned 25% or more of its outstanding voting securities and would be an affiliate of a portfolio company if the Company owned 5% or more of its outstanding voting securities. The 1940 Act contains prohibitions and restrictions relating to transactions between investment companies and their affiliates (including the Company's investment adviser), principal underwriters and affiliates of those affiliates or underwriters. The Company believes that there is significant ambiguity in the application of existing Securities and Exchange Commission (SEC) staff interpretations of the term voting security to complex structures such as limited partnership interests of the kind in which the Company invests. As a result, it is possible that the SEC staff may consider that certain securities investments in limited partnerships are voting securities under the staff's prevailing interpretations of this term. If such determination is made, the Company may be regarded as a person affiliated with and controlling the issuer(s) of those securities for purposes of Section 17 of the 1940 Act.

In light of the ambiguity of the definition of voting securities, the Company does not intend to treat any class of limited partnership interests that it holds as voting securities unless the security holders of such class currently have the ability, under the partnership agreement, to remove the general partner (assuming a sufficient vote of such securities, other than securities held by the general partner, in favor of such removal) or the Company has an economic interest of sufficient size that otherwise gives it the de facto power to exercise a controlling influence over the partnership. The Company believes this treatment is appropriate given that the general partner controls the partnership, and without the ability to remove the general partner or the power to otherwise exercise a controlling influence over the partnership due to the size of an economic interest, the security holders have no control over the partnership.

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Clearwater Natural Resources, LP At May 31, 2010, the Company held approximately 42.5% of the limited partnership interest of Clearwater. The Company controls CNR GP Holdco, LLC, which is the general partner of Clearwater. The Company believes that it controls and is an affiliate of Clearwater under the 1940 Act by virtue of its controlling interest in the general partner of Clearwater.

On January 12, 2010, Clearwater closed on the sale of all of its reserves and a substantial portion of its operating assets to International Resource Partners, L.P. (IRP). On March 16, 2010, the Bankruptcy Court confirmed Clearwater s plan of reorganization (including such sale of assets to IRP). As part of Clearwater s plan of reorganization, the Company will receive consideration for its unsecured term loan. Such consideration will be in the form of cash and a royalty interest in the reserves sold. Pursuant to the plan of reorganization, the Company will not receive any consideration for its equity investment in Clearwater or CNR GP Holdco, LLC. See Note 7 Restricted Securities.

Plains All American, L.P. and PAA Natural Gas Storage, L.P. Robert V. Sinnott is chief executive officer of Kayne Anderson Capital Advisors, L.P. (KACALP), the managing member of KAFA. Mr. Sinnott also serves as a director on the board of Plains All American GP LLC, the general partner of Plains All American Pipeline, L.P. Members of senior management and various advisory clients of KACALP and KAFA indirectly own units of Plains All American GP LLC. Various advisory clients of KACALP and KAFA, including the Company, own units in Plains All American Pipeline, L.P. and PAA Natural Gas Storage, L.P. The Company believes that it is an affiliate of Plains All American Pipeline, L.P. and PAA Natural Gas Storage, L.P. under the 1940 Act.

6. Income Taxes

Deferred income taxes reflect (i) taxes on unrealized gains/(losses), which are attributable to the difference between fair market value and tax basis, (ii) the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and (iii) the net tax benefit of accumulated net operating losses. Components of the Company s deferred tax assets and liabilities as of May 31, 2010 are as follows:

Deferred tax assets:

Net operating loss carryforwards	Federal	\$ 48,168
Net operating loss carryforwards	State	3,964
Capital loss carryforwards		48,594
Other		105

Deferred tax liabilities:

Net unrealized gains on investment securities, interest rate swap contracts and option contracts	(268,368)
Basis reductions resulting from estimated return of capital	(11,738)

Total net deferred tax liability	\$ (179,275)
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At May 31, 2010, the Company had federal net operating loss carryforwards of \$142,069 (deferred tax asset of \$48,168). Realization of the deferred tax assets and net operating loss carryforwards are dependent, in part, on generating sufficient taxable income prior to expiration of the loss carryforwards. If not utilized, \$40,950; \$52,182; \$26,118 and \$22,819 of the net operating loss carryforward will expire in 2026, 2027, 2028 and 2029, respectively. As of May 31, 2010, the Company had federal and state capital loss carryforwards of approximately \$131,432 (deferred tax asset of \$48,594). If not utilized, \$44,623 and \$86,809 of capital loss carry forwards will expire in 2013 and 2014, respectively. For corporations, capital losses can only be used to offset capital gains and cannot be used to offset

ordinary income. In addition, the Company has state net operating losses of \$128,834 (deferred tax asset of \$3,964). These state net operating losses begin to expire in 2011 through 2029.

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Although the Company currently has a net deferred tax liability, it periodically reviews the recoverability of its deferred tax assets based on the weight of available evidence. When assessing the recoverability of its deferred tax assets, significant weight was given to the effects of potential future realized and unrealized gains on investments and the period over which these deferred tax assets can be realized, as the expiration dates for the federal capital and operating loss carryforwards range from five to nineteen years.

Based on the Company's assessment, it has determined that it is more likely than not that its deferred tax assets will be realized through future taxable income of the appropriate character. Accordingly, no valuation allowance has been established for the Company's deferred tax assets. The Company will continue to assess the need for a valuation allowance in the future. Significant declines in the fair value of its portfolio of investments may change the Company's assessment regarding the recoverability of its deferred tax assets and may result in a valuation allowance. If a valuation allowance is required to reduce any deferred tax asset in the future, it could have a material impact on the Company's net asset value and results of operations in the period it is recorded.

Total income taxes were different from the amount computed by applying the federal statutory income tax rate of 35% to the net investment loss and realized and unrealized gains (losses) on investments and interest rate swap contracts before taxes for the three and six months ended May 31, 2010, as follows:

	Three Months Ended May 31, 2010	Six Months Ended May 31, 2010
Computed expected federal income tax	\$ 4,545	\$ 76,992
State income tax, net of federal tax expense	268	4,408
Other	154	154
 Total income tax expense	 \$ 4,967	 \$ 81,554

At May 31, 2010, the cost basis of investments for federal income tax purposes was \$1,328,467 and the net cash received on option contracts written was \$292. The cost basis of investments includes a \$168,123 reduction in basis attributable to the Company's portion of the allocated losses from its MLP investments. At May 31, 2010, gross unrealized appreciation and depreciation of investments and options for federal income tax purposes were as follows:

Gross unrealized appreciation of investments (including options)	\$ 790,833
Gross unrealized depreciation of investments (including options)	(62,204)
 Net unrealized appreciation before tax and interest rate swap contracts	 728,629
Net unrealized depreciation on interest rate swap contracts	
 Net unrealized appreciation before tax	 \$ 728,629
 Net unrealized appreciation after tax	 \$ 459,036

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7. Restricted Securities

From time to time, certain of the Company's investments may be restricted as to resale. For instance, private investments that are not registered under the Securities Act of 1933, as amended, cannot 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 May 31, 2010, the Company held the following restricted investments:

Investment	Security	Acquisition Date	Type of Restriction	Number of Units, Principal (\$) (in 000s)	Cost Basis	Fair Value	Percent of Net Assets	Percent of Total Assets
Clearwater Natural Resources, L.P.	Common Units	(1)	(2)	3,889	\$ 72,860	\$		
Clearwater Natural Resources, L.P.	Unsecured Term Loan	(3)	(2)	\$ 13,601	13,690	4,760	0.4%	0.2%
CNR GP Holdco, LLC	LLC Interests	3/5/08	(2)	n/a	1,083			
Total of securities valued in accordance with procedures established by the Board of Directors(4)					\$ 87,633	\$ 4,760	0.4%	0.2%
Niska Gas Storage U.S., LLC	Senior Notes	2/26/10	(5)	\$ 5,000	\$ 5,022	\$ 5,025	0.4%	0.2%
Total of securities valued by prices provided by market maker or					\$ 5,022	\$ 5,025	0.4%	0.2%

**independent
pricing services**

**Total of all
restricted
securities**

\$ 92,655 \$ 9,785 0.8% 0.4%

- (1) The Company purchased common units on August 1, 2005 and October 2, 2006.
- (2) On January 7, 2009, Clearwater Natural Resources, LP (Clearwater) filed a voluntary petition under Chapter 11 of the U.S. Bankruptcy Code. Clearwater continued operations as a debtor-in-possession during fiscal 2009. Note 5 Agreements and Affiliations for a status update.
- (3) The Company purchased term loans on January 11, 2008; February 28, 2008; May 5, 2008; July 8, 2008; August 6, 2008; and September 29, 2008. The Company is not accruing interest income on this investment.
- (4) Restricted securities that are classified as a Level 3. Security is valued using inputs reflecting the Company s own assumptions as more

fully described in
Note 2 Significant
Accounting Policies.

- (5) Unregistered security of a public company that are classified as a Level 2. These securities have a fair market value determined by the mean of the bid and ask prices provided by a syndicate bank, principal market maker or an independent pricing service as more fully described in Note 2 Significant Accounting Policies. These securities have limited trading volume and are not listed on a national exchange.

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8. Derivative Financial Instruments

Option Contracts Transactions in option contracts for the six months ended May 31, 2010 were as follows:

	Number of Contracts	Premium
Put Options Purchased		
Options outstanding at beginning of period	1,386	\$ 89
Options expired	(1,386)	(89)
Options outstanding at end of period		\$
Call Options Written		
Options outstanding at beginning of period	7,000	\$ 584
Options written	17,650	1,740
Options subsequently repurchased ⁽¹⁾	(5,070)	(561)
Options exercised	(13,831)	(1,384)
Options expired	(1,526)	(87)
Options outstanding at end of period	4,223	\$ 292

(1) The price at which the Company subsequently repurchased the options was \$170.

Interest Rate Swap Contracts The Company may enter into interest rate swap contracts to partially hedge itself from increasing interest expense on its leverage resulting from increasing short-term interest rates. A decline in future interest rates may result in a decline in the value of the swap contracts, which, everything else being held constant, would result in a decline in the net assets of the Company. In addition, if the counterparty to the interest rate swap contracts defaults, the Company would not be able to use the anticipated receipts under the swap contracts to offset the interest payments on the Company's leverage. At the time the interest rate swap contracts reach their scheduled termination, there is a risk that the Company would not be able to obtain a replacement transaction or that the terms of the replacement transaction would not be as favorable as on the expiring transaction. In addition, if the Company is required to terminate any swap contract early, then the Company could be required to make a termination payment. On April 22, 2010, the Company terminated \$125,000 aggregate notional amount of interest rate swap contract for \$350.

As of May 31, 2010, the Company did not have any interest rate swap contracts outstanding.

As required by the Derivatives and Hedging Topic of the FASB Accounting Standards Codification below are the derivative instruments and hedging activities of the Company. See Note 2 Significant Accounting Policies.

The following table sets forth the fair value of the Company's derivative instruments in the Statement of Assets and Liabilities.

Derivatives Not Accounted for as Hedging		Fair Value as of May 31, 2010
Instruments	Statement of Assets and Liabilities Location	
Liabilities		
Call options	Call option contracts written	\$ 646

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The following tables set forth the effect of derivative instruments in the Statement of Operations.

		For the Three Months Ended May 31, 2010	
		Net Realized Gains/(Losses) on Derivatives Recognized in Income	Change in Unrealized Gains/ (Losses) on Derivatives Recognized in Income
Derivatives Not Accounted For as Hedging Instruments	Location of Gains/(Losses) on Derivatives Recognized in Income		
Call options	Options	\$ 405	\$ (315)
Interest rate swap contracts	Interest rate swap contracts	(424)	416
		\$ (19)	\$ 101

		For the Six Months Ended May 31, 2010	
		Net Realized Gains/(Losses) on Derivatives Recognized in Income	Change in Unrealized Gains/ (Losses) on Derivatives Recognized in Income
Derivatives Not Accounted For as Hedging Instruments	Location of Gains/(Losses) on Derivatives Recognized in Income		
Put options	Options	\$ (90)	\$ 76
Call options	Options	479	452
Interest rate swap contracts	Interest rate swap contracts	(664)	205
		\$ (275)	\$ 733

9. Investment Transactions

For the six months ended May 31, 2010, the Company purchased and sold securities in the amounts of \$415,335 and \$154,171 (excluding short-term investments, options and interest rate swaps), respectively.

10. Revolving Credit Facility

On June 26, 2009, the Company established an unsecured revolving credit facility (the Credit Facility) with availability of \$80,000. Interest on the Credit Facility was charged at interest rates between LIBOR plus 2.25% and LIBOR plus 3.50% depending on asset coverage ratios. The Credit Facility was scheduled to mature on June 26, 2010, but was replaced by an amended and restated unsecured revolving credit facility (the New Credit Facility) on June 11, 2010. The New Credit Facility is a three year facility with availability of \$100,000. See Note 14 Subsequent Events. For the six months ended May 31, 2010, the average amount outstanding under the Company s credit facilities was \$30,102 with a weighted average interest rate of 2.79%. As of May 31, 2010, the Company had no outstanding borrowings on the Credit Facility.

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11. Senior Unsecured Notes

At May 31, 2010, the Company had \$480,000, aggregate principal amount, of senior unsecured fixed and floating rate notes (the Senior Unsecured Notes) outstanding.

On May 7, 2010, the Company completed a private placement with institutional investors of \$110,000 of Senior Unsecured Notes. Net proceeds from the offering, combined with net proceeds from the Company's preferred stock offering described below, were used to repay short-term borrowings, to redeem the Company's Series D Auction Rate Preferred Stock, to make new portfolio investments and for general corporate purposes.

The table below sets forth the key terms of each series of the Senior Unsecured Notes.

Series	Principal		Principal		Interest Rate	Maturity
	Outstanding, November 30, 2009	Principal Issued, May 7, 2010	Outstanding, May 31, 2010			
G	\$ 75,000		\$ 75,000		5.645%	6/19/2011
I	60,000		60,000		5.847%	6/19/2012
K	125,000		125,000		5.991%	6/19/2013
M	60,000		60,000		4.560%	11/4/2014
N	50,000		50,000		3-month LIBOR + 185 bps	11/4/2014
O		\$ 65,000	65,000		4.210%	5/7/2015
P		45,000	45,000		3-month LIBOR + 160 bps	5/7/2015
	\$ 370,000	\$ 110,000	\$ 480,000			

Holders of the fixed rate Senior Unsecured Notes (Series G, Series I, Series K, Series M and Series O) are entitled to receive cash interest payments semi-annually (on June 19 and December 19) at the fixed rate. Holders of the floating rate Senior Unsecured Notes (Series N and Series P) are entitled to receive cash interest payments quarterly (on March 19, June 19, September 19 and December 19) at the floating rate equal to the 3-month LIBOR plus 1.85% and 3-month LIBOR plus 160%, respectively.

During the period, the average principal balance outstanding was \$385,110 with a weighted average interest rate of 2.53%.

The Senior Unsecured Notes were issued in private placement offerings to institutional investors and are not listed on any exchange or automated quotation system. The Senior Unsecured Notes contain various covenants related to other indebtedness, liens and limits on the Company's overall leverage. Under the 1940 Act and the terms of the Senior Unsecured Notes, the Company may not declare dividends or make other distributions on shares of common stock or purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to the outstanding Senior Unsecured Notes would be less than 300%. The Senior Unsecured Notes are redeemable in certain circumstances at the option of the Company. The Senior Unsecured Notes are also subject to a mandatory redemption to the extent needed to satisfy certain requirements if the Company fails to meet an asset coverage ratio required by law and is not able to cure the coverage deficiency by the applicable deadline, or fails to cure a deficiency as stated in the Company's rating agency guidelines in a timely manner.

The Senior Unsecured Notes are unsecured obligations of the Company and, upon liquidation, dissolution or winding up of the Company, will rank: (1) senior to all the Company's outstanding preferred shares; (2) senior to all of the Company's outstanding common shares; (3) on a parity with any unsecured creditors of the Company and any

unsecured senior securities representing indebtedness of the Company; and (4) junior to any secured creditors of the Company.

At May 31, 2010, the Company was in compliance with all covenants under the Senior Unsecured Notes agreements.

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12. Preferred Stock

On May 7, 2010, the Company completed a private placement with institutional investors and issued 4,400,000 shares of Series A mandatory redeemable preferred shares (MRP Shares) totaling \$110,000. Net proceeds from such offerings were used to repay short-term borrowings, to redeem all of the Company's Series D Auction Rate Preferred Stock (ARP Shares) (\$75,000 outstanding), to make new portfolio investments and for general corporate purposes. The MRP Shares have a seven-year term with a redemption date of May 7, 2017 and have a liquidation value of \$25.00 per share.

Holders of the MRP Shares are entitled to receive cash dividend payments on the first business day following each quarterly dividend period (February 28, May 31, August 31 and November 30) at a fixed rate of 5.57%.

The MRP Shares are redeemable in certain circumstances at the option of the Company and are also subject to a mandatory redemption if the Company fails to meet an asset coverage ratio or fails to maintain its basic maintenance amount as stated in the Company's rating agency guidelines. At May 31, 2010, the Company was in compliance with the asset coverage and basic maintenance requirements of its MRP Shares.

The holders of the MRP Shares have one vote per share and will vote together with the holders of common stock as a single class except on matters affecting only the holders of MRP Shares or the holders of common stock. The holders of the MRP Shares, voting separately as a single class, have the right to elect at least two directors of the Company.

13. Common Stock

The Company has 199,990,000 shares of common stock authorized and 58,355,112 shares outstanding at May 31, 2010. As of that date, KACALP owned 4,000 shares. Transactions in common shares for the six months ended May 31, 2010 were as follows:

Shares outstanding at November 30, 2009	51,579,541
Shares issued through reinvestment of distributions	483,971
Shares issued in connection with offerings of common stock ⁽¹⁾	6,291,600
 Shares outstanding at May 31, 2010	 58,355,112

(1) On January 20, 2010, the Company closed its public offering of 6,291,600 shares of common stock at a price of \$23.61 per share. Total net proceeds from the offering were \$142,431 and were used

by the Company
to make
additional
portfolio
investments that
are consistent
with the
Company's
investment
objective, and
for general
corporate
purposes.

14. Subsequent Events

On June 10, 2010 and June 15, 2010, the Company completed two private placements of unregistered common stock to members of senior management of Magellan Midstream Partners, L.P. (MMP) and Inergy Holdings, L.P. (NRGP), respectively. The Company issued a total of 1,511,173 common shares at an average price of \$23.90 per share. The shares were issued based on a 5% discount to the five-day volume-weighted average price before the closing date of each transaction. Simultaneous with the issuance of the Company's common stock, the Company purchased \$26,250 of NRGP common units and \$9,862 of MMP common units owned by such members of senior management. The common units purchased in each transaction are unregistered, and the purchase price in each transaction was calculated based on a 5% discount to the five-day volume-weighted average price before the closing date of each transaction. In addition, the Company purchased \$8,750 of unregistered NRGP common units owned by members of NRGP senior management with cash at a 6% discount to five-day volume-weighted average price before the closing date. The pricing for these transactions reflects the fact that the securities exchanged are unregistered and therefore less liquid than registered securities until certain holding period requirements are met.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
NOTES TO FINANCIAL STATEMENTS
MAY 31, 2010
(amounts in 000 s, except share and per share amounts)
(UNAUDITED)**

On June 11, 2010, the Company entered into a new \$100,000 unsecured revolving credit facility with a syndicate of lenders. The New Credit Facility has a three-year commitment terminating on June 11, 2013. The interest rate may vary between LIBOR plus 1.75% to LIBOR plus 3.00%, depending on the Company's asset coverage ratios. Outstanding loan balances will accrue interest daily at a rate equal to the one-month LIBOR plus 1.75% based on current asset coverage ratios. The Company will pay a fee of 0.40% on any unused amounts of the New Credit Facility.

On June 15, 2010, the Company declared its quarterly distribution of \$0.48 per common share for the period March 1, 2010 through May 31, 2010 for a total of \$28,736. The distribution was paid on July 9, 2010 to shareholders of record on July 7, 2010. Of this total, pursuant to the Company's dividend reinvestment plan, \$6,914 was reinvested into the Company through the issuance of 280,725 shares of common stock.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
PRIVACY POLICY NOTICE
(UNAUDITED)**

Kayne Anderson MLP Investment Company (the Company) considers privacy to be fundamental to its relationship with its stockholders. The Company is committed to maintaining the confidentiality, integrity and security of the non-public personal information of its stockholders and potential investors. Accordingly, the Company has developed internal policies to protect confidentiality while allowing stockholders' needs to be met. This notice applies to former as well as current stockholders and potential investors who provide the Company with nonpublic personal information.

The Company may collect several types of nonpublic personal information about stockholders or potential investors, including:

Information from forms that you may fill out and send to the Company or one of its affiliates or service providers in connection with an investment in the Company (such as name, address, and social security number);

Information you may give orally to the Company or one of its affiliates or service providers;

Information about your transactions with the Company, its affiliates, or other third parties, such as the amount stockholders have invested in the Company;

Information about any bank account stockholders or potential investors may use for transfers between a bank account and an account that holds or is expected to hold shares of its stock; and

Information collected through an Internet cookie (an information collecting device from a web server based on your use of a web site).

The Company may disclose all of the information it collects, as described above, to certain nonaffiliated third parties such as attorneys, accountants, auditors and persons or entities that are assessing its compliance with industry standards. Such third parties are required to uphold and maintain its privacy policy when handling your nonpublic personal information.

The Company may disclose information about stockholders or potential investors at their request. The Company will not sell or disclose your nonpublic personal information to anyone except as disclosed above or as otherwise permitted or required by law.

Within the Company and its affiliates, access to information about stockholders and potential investors is restricted to those personnel who need to know the information to service stockholder accounts. The personnel of the Company and its affiliates have been instructed to follow its procedures to protect the privacy of your information.

The Company reserves the right to change this privacy notice in the future. Except as described in this privacy notice, the Company will not use your personal information for any other purpose unless it informs you how such information will be used at the time you disclose it or the Company obtains your permission to do so.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
DIVIDEND REINVESTMENT PLAN
(UNAUDITED)**

Kayne Anderson MLP Investment Company, a Maryland corporation (the Company), hereby adopts the following plan (the Plan) with respect to distributions declared by its Board of Directors (the Board) on shares of its Common Stock:

1. Unless a stockholder specifically elects to receive cash as set forth below, all distributions hereafter declared by the Board shall be payable in shares of the Common Stock of the Company, and no action shall be required on such stockholder's part to receive a distribution in stock.
2. Such distributions shall be payable on such date or dates as may be fixed from time to time by the Board to stockholders of record at the close of business on the record date(s) established by the Board for the distribution involved.
3. The Company may use newly-issued shares of its Common Stock or purchase shares in the open market in connection with the implementation of the plan. The number of shares to be issued to a stockholder shall be based on share price equal to 95% of the closing price of the Company's Common Stock one day prior to the dividend payment date.
4. The Board may, in its sole discretion, instruct the Company to purchase shares of its Common Stock in the open market in connection with the implementation of the Plan as follows: If the Company's Common Stock is trading below net asset value at the time of valuation, upon notice from the Company, the Plan Administrator (as defined below) will receive the dividend or distribution in cash and will purchase Common Stock in the open market, on the New York Stock Exchange or elsewhere, for the Participants' accounts, except that the Plan Administrator will endeavor to terminate purchases in the open market and cause the Company to issue the remaining shares if, following the commencement of the purchases, the market value of the shares, including brokerage commissions, exceeds the net asset value at the time of valuation. These remaining shares will be issued by the Company at a price equal to the greater of (i) the net asset value at the time of valuation or (ii) 95% of the then current market price.
5. In a case where the Plan Administrator has terminated open market purchases and caused the issuance of remaining shares by the Company, the number of shares received by the participant in respect of the cash dividend or distribution will be based on the weighted average of prices paid for shares purchased in the open market, including brokerage commissions, and the price at which the Company issues the remaining shares. To the extent that the Plan Administrator is unable to terminate purchases in the open market before the Plan Administrator has completed its purchases, or remaining shares cannot be issued by the Company because the Company declared a dividend or distribution payable only in cash, and the market price exceeds the net asset value of the shares, the average share purchase price paid by the Plan Administrator may exceed the net asset value of the shares, resulting in the acquisition of fewer shares than if the dividend or distribution had been paid in shares issued by the Company.
6. A stockholder may, however, elect to receive his or its distributions in cash. To exercise this option, such stockholder shall notify American Stock Transfer & Trust Company, the plan administrator and the Company's transfer agent and registrar (collectively the Plan Administrator), in writing so that such notice is received by the Plan Administrator no later than the record date fixed by the Board for the distribution involved.
7. The Plan Administrator will set up an account for shares acquired pursuant to the Plan for each stockholder who has not so elected to receive dividends and distributions in cash (each, a Participant). The Plan Administrator may hold each Participant's shares, together with the shares of other Participants, in non-certificated form in the Plan Administrator's name or that of its nominee. Upon request by a Participant, received no later than three (3) days prior to the payable date, the Plan Administrator will, instead of crediting shares to and/or carrying shares in a Participant's account, issue, without charge to the Participant, a certificate registered in the Participant's name for the number of whole shares payable to the Participant and a check for any fractional share less a broker commission on the sale of such fractional shares. If a request to terminate a Participant's participation in the Plan is received less than three (3) days before the payable date, dividends and distributions for that payable date will be reinvested. However, subsequent dividends and distributions will be paid to the Participant in cash.

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**KAYNE ANDERSON MLP INVESTMENT COMPANY
DIVIDEND REINVESTMENT PLAN
(UNAUDITED)**

The Plan Administrator will confirm to each Participant each acquisition made pursuant to the Plan as soon as practicable but not later than ten (10) business days after the date thereof. Although each Participant may from time to time have an undivided fractional interest (computed to three decimal places) in a share of Common Stock of the Company, no certificates for a fractional share will be issued. However, dividends and distributions on fractional shares will be credited to each Participant's account. In the event of termination of a Participant's account under the Plan, the Plan Administrator will adjust for any such undivided fractional interest in cash at the market value of the Company's shares at the time of termination.

8. The Plan Administrator will forward to each Participant any Company related proxy solicitation materials and each Company report or other communication to stockholders, and will vote any shares held by it under the Plan in accordance with the instructions set forth on proxies returned by Participants to the Company.

9. In the event that the Company makes available to its stockholders rights to purchase additional shares or other securities, the shares held by the Plan Administrator for each Participant under the Plan will be added to any other shares held by the Participant in certificated form in calculating the number of rights to be issued to the Participant.

10. The Plan Administrator's service fee, if any, and expenses for administering the Plan will be paid for by the Company.

11. Each Participant may terminate his or its account under the Plan by so notifying the Plan Administrator via the Plan Administrator's website at www.amstock.com, by filling out the transaction request form located at the bottom of the Participant's Statement and sending it to American Stock Transfer and Trust Company, P.O. Box 922, Wall Street Station, New York, NY 10269-0560 or by calling the Plan Administrator at (888) 888-0317. Such termination will be effective immediately. The Plan may be terminated by the Company upon notice in writing mailed to each Participant at least 30 days prior to any record date for the payment of any dividend or distribution by the Company. Upon any termination, the Plan Administrator will cause a certificate or certificates to be issued for the full shares held for the Participant under the Plan and a cash adjustment for any fractional share to be delivered to the Participant without charge to the Participant. If a Participant elects by his or its written notice to the Plan Administrator in advance of termination to have the Plan Administrator sell part or all of his or its shares and remit the proceeds to the Participant, the Plan Administrator is authorized to deduct a \$15.00 transaction fee plus a \$0.10 per share brokerage commission from the proceeds.

12. These terms and conditions may be amended or supplemented by the Company at any time but, except when necessary or appropriate to comply with applicable law or the rules or policies of the Securities and Exchange Commission or any other regulatory authority, only by mailing to each Participant appropriate written notice at least 30 days prior to the effective date thereof. The amendment or supplement shall be deemed to be accepted by each Participant unless, prior to the effective date thereof, the Plan Administrator receives written notice of the termination of his or its account under the Plan. Any such amendment may include an appointment by the Plan Administrator in its place and stead of a successor agent under these terms and conditions, with full power and authority to perform all or any of the acts to be performed by the Plan Administrator under these terms and conditions. Upon any such appointment of any agent for the purpose of receiving dividends and distributions, the Company will be authorized to pay to such successor agent, for each Participant's account, all dividends and distributions payable on shares of the Company held in the Participant's name or under the Plan for retention or application by such successor agent as provided in these terms and conditions.

13. The Plan Administrator will at all times act in good faith and use its best efforts within reasonable limits to ensure its full and timely performance of all services to be performed by it under this Plan and to comply with applicable law, but assumes no responsibility and shall not be liable for loss or damage due to errors unless such error is caused by the Plan Administrator's negligence, bad faith, or willful misconduct or that of its employees or agents.

14. These terms and conditions shall be governed by the laws of the State of Maryland.

Adopted: September 27, 2004

Amended: December 13, 2005

Amended: March 12, 2009

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The policies and procedures that the Company uses to determine how to vote proxies relating to its portfolio securities are available:

without charge, upon request, by calling (877) 657-3863/MLP-FUND;

on the Company's website, <http://www.kaynefunds.com>; and

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

Information regarding how the Company voted proxies relating to portfolio securities during the most recent 12-month period ended June 30 is available without charge, upon request, by calling (877) 657-3863/MLP-FUND, and on the SEC's website at <http://www.sec.gov> (see Form N-PX).

The Company files a complete schedule of its portfolio holdings for the first and third quarters of its fiscal year with the SEC on Form N-Q. The Company's Forms N-Q are available on the SEC's website at <http://www.sec.gov> and may be reviewed and copied at the SEC's Public Reference Room in Washington, DC. Information on the operation of the SEC's Public Reference Room may be obtained by calling 1-202-551-8090. The Company also makes its Forms N-Q available on its website at <http://www.kaynefunds.com>.

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Directors and Corporate Officers

Kevin S. McCarthy

Chairman of the Board of Directors,
President and Chief Executive Officer
Director

Anne K. Costin

Director

Steven C. Good

Director

Gerald I. Isenberg

Director

William H. Shea Jr.

Director

Terry A. Hart

Chief Financial Officer and Treasurer

David J. Shladovsky

Secretary and Chief Compliance Officer

J.C. Frey

Executive Vice President, Assistant

Secretary and Assistant Treasurer

James C. Baker

Executive Vice President

Investment Adviser

KA Fund Advisors, LLC.

717 Texas Avenue, Suite 3100

Houston, TX 77002

Administrator

Ultimus Fund Solutions, LLC

260 Madison Avenue, 8th Floor

New York, NY 10016

1800 Avenue of the Stars, Second Floor

Los Angeles, CA 90067

Stock Transfer Agent and Registrar

American Stock Transfer & Trust Company

59 Maiden Lane

New York, NY 10038

Custodian

JPMorgan Chase Bank, N.A.

14201 North Dallas Parkway, Second Floor

Dallas, TX 75254

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP

350 South Grand Avenue

Los Angeles, CA 90071

Legal Counsel

Paul, Hastings, Janofsky & Walker LLP

55 Second Street, 24th Floor

San Francisco, CA 94105

For stockholder inquiries, registered stockholders should call (800) 937-5449. For general inquiries, please call (877) 657-3863/MLP-FUND; or visit us on the web at <http://www.kaynefunds.com>.

This report, including the financial statements herein, is made available to stockholders of the Company for their information. It is not a prospectus, circular or representation intended for use in the purchase or sale of shares of the Company or of any securities mentioned in this report.

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Item 2. Code of Ethics.

Not applicable.

Item 3. Audit Committee Financial Expert.

Not applicable.

Item 4. Principal Accountant Fees and Services.

Not applicable.

Item 5. Audit Committee of Listed Registrants.

Not applicable.

Item 6. Schedule of Investments.

Please see the Schedule of Investments contained in the Report to Stockholders included under Item 1 of this Form N-CSR.

Item 7. Disclosure of Proxy Voting Policies and Procedures for Closed-End Management Investment Companies.

Not applicable.

Item 8. Portfolio Managers of Closed-End Management Investment Companies.

Not applicable.

Item 9. Purchases of Equity Securities by Closed-End Management Companies and Affiliated Purchasers.

None.

Item 10. Submission of Matters to a Vote of Security Holders.

None.

Item 11. Controls and Procedures.

(a) The Registrant's principal executive officer and principal financial officer have evaluated the Registrant's disclosure controls and procedures (as defined in rule 30a-3(c) under the 1940 Act) as of a date within 90 days of this filing and have concluded that the Registrant's disclosure controls and procedures are effective, as of such date, in ensuring that information required to be disclosed by the Registrant in this Form N-CSR was recorded, processed, summarized, and reported timely.

(b) The Registrant's principal executive officer and principal financial officer are aware of no changes in the Registrant's internal control over financial reporting (as defined in rule 30a-3(d) under the 1940 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.

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Item 12. Exhibits.

(a)(1) Not applicable to semi-annual reports.

(a)(2) Separate certifications of Principal Executive and Financial Officers pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 attached as EX-99.CERT.

(b) Certification of Principal Executive and Financial Officers pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 furnished as EX-99.906 CERT.

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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

Date: July 28, 2010

By: /s/ Kevin S. McCarthy

Kevin S. McCarthy
Chairman of the Board of Directors,
President and Chief Executive Officer

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.

Date: July 28, 2010

By: /s/ Kevin S. McCarthy

Kevin S. McCarthy
Chairman of the Board of Directors,
President and Chief Executive Officer

Date: July 28, 2010

By: /s/ Terry A. Hart

Terry A. Hart
Chief Financial Officer and Treasurer