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KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

Form N-30B-2

October 30, 2013

Midstream/Energy Fund

KMF Quarterly Report

August 31, 2013

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS: This report of Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) 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 expressions 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 Fund's historical experience and its present expectations or projections indicated in any forward-looking statement. These risks include, but are not limited to, changes in economic and political conditions; regulatory and legal changes; MLP industry risk; leverage risk; valuation risk; interest rate risk; tax risk; and other risks discussed in the Fund'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 Fund undertakes no obligation to publicly update or revise any forward-looking statements made herein. There is no assurance that the Fund's investment objectives will be attained.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.**MANAGEMENT DISCUSSION****(UNAUDITED)****Fund Overview**

Kayne Anderson Midstream/Energy Fund, Inc. is a non-diversified, closed-end fund. We commenced operations on November 24, 2010. Our shares of common stock are listed on the New York Stock Exchange under the symbol KMF.

Our investment objective is to provide a high level of total return with an emphasis on making quarterly cash distributions to our stockholders. We seek to achieve that investment objective by investing at least 80% of our total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. We anticipate that the majority of our investments will consist of investments in Midstream MLPs and Midstream Companies. Please see the Glossary of Key Terms on page 36 for a description of these investment categories and for the meaning of capitalized terms not otherwise defined herein.

As of August 31, 2013, we had total assets of \$1.1 billion, net assets applicable to our common stock of \$757 million (net assets of \$34.39 per share), and 22 million shares of common stock outstanding. As of August 31, 2013, we held \$945 million in equity investments and \$134 million in debt investments.

Recent Events

On October 21, 2013, Plains GP Holdings, L.P. (Plains GP) completed its initial public offering (IPO) and trades on the New York Stock Exchange (NYSE) under the ticker PAGP . Plains GP was formed to own a portion of the general partner of Plains All American Pipeline, L.P. All of our holdings in Plains All American GP LLC are exchangeable into shares of Plains GP on a one-for-one basis at our option. As part of the IPO, we agreed to a 15-month lock-up on its Plains GP shares (lock up expires on January 21, 2015).

Our Top Ten Portfolio Investments as of August 31, 2013

Listed below are our top ten portfolio investments by issuer as of August 31, 2013.

| Holding | Sector | Amount (\$ millions) | Percent of Long-Term Investments |
|---------------------------------------|-------------------|-------------------------|--|
| 1. The Williams Companies, Inc. | Midstream Company | \$ 91.4 | 8.5% |
| 2. ONEOK, Inc. | Midstream Company | 82.2 | 7.6 |
| 3. Kinder Morgan Management, LLC | Midstream MLP | 74.3 | 6.9 |
| 4. Kinder Morgan, Inc. | Midstream Company | 71.9 | 6.7 |
| 5. Enbridge Energy Management, L.L.C. | Midstream MLP | 66.1 | 6.1 |
| 6. Golar LNG Partners LP | Midstream Company | 34.9 | 3.2 |
| 7. Plains All American GP LLC | Midstream MLP | 31.1 | 2.9 |
| 8. Targa Resources Corp. | Midstream Company | 28.4 | 2.6 |
| 9. Spectra Energy Corp. | Midstream Company | 27.1 | 2.5 |
| 10. Teekay Offshore Partners L.P. | Midstream Company | 25.1 | 2.3 |
| | | \$ 532.5 | 49.3% |

Results of Operations For the Three Months Ended August 31, 2013

Investment Income. Investment income totaled \$7.0 million for the quarter and consisted primarily of net dividends and distributions and interest income on our investments. We received \$9.6 million of dividends and

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MANAGEMENT DISCUSSION

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distributions, of which \$5.3 million was treated as return of capital. Interest and other income was \$2.7 million. We received \$2.7 million of paid-in-kind dividends during the quarter, which are not included in investment income, but are reflected as an unrealized gain.

Operating Expenses. Operating expenses totaled \$7.2 million, including \$3.4 million of investment management fees, \$2.5 million of interest expense (including non-cash amortization of debt issuance costs of \$0.1 million) and \$0.4 million of other operating expenses. Preferred stock distributions for the quarter were \$0.8 million.

Net Investment Loss. Our net investment loss totaled \$0.2 million.

Net Realized Gains. We had net realized gains of \$10.0 million, which includes \$1.8 million of net realized gains from option activity.

Net Change in Unrealized Gains. We had a net increase in unrealized gains of \$18.9 million. The net increase consisted of \$19.2 million of unrealized gains from investments and \$0.3 million of net unrealized losses from option activity.

Net Increase in Net Assets Resulting from Operations. We had an increase in net assets resulting from operations of \$28.7 million. This increase was comprised of net investment loss of \$0.2 million, net realized gains of \$10.0 million and net increase in unrealized gains of \$18.9 million, as noted above.

Distribution to Common Stockholders

We pay quarterly distributions to our common stockholders, funded generally 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 not a 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 dividends and distributions, (b) paid-in-kind dividends received (*i.e.*, stock dividends), (c) interest income from debt securities and commitment fees from private investments in public equity (*PIPE investments*) and (d) net premiums received from the sale of covered calls.

Operating expenses include (a) investment management fees paid to our investment adviser, (b) other expenses (mostly comprised of fees paid to other service providers) and (c) interest expense and preferred stock distributions.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.**MANAGEMENT DISCUSSION****(UNAUDITED)****Net Distributable Income (NDI)**

(amounts in millions, except for per share amounts)

| | Three Months Ended August 31, 2013 |
|--|---|
| Distributions and Other Income from Investments | |
| Dividends and Distributions ⁽¹⁾ | \$ 9.6 |
| Paid-In-Kind Dividends and Distributions ⁽¹⁾ | 2.7 |
| Interest and Other Income | 2.7 |
| Net Premiums Received from Call Options Written | 2.0 |
| Total Distributions and Other Income from Investments | 17.0 |
| Expenses | |
| Investment Management Fee | (3.4) |
| Other Expenses | (0.4) |
| Interest Expense | (2.4) |
| Preferred Stock Distributions | (0.8) |
| Net Distributable Income (NDI) | \$ 10.0 |
| Weighted Shares Outstanding | 22.0 |
| NDI per Weighted Share Outstanding | \$ 0.457 |
| Adjusted NDI per Weighted Share Outstanding⁽²⁾ | \$ 0.459 |
| Distributions paid per Common Share⁽³⁾ | \$ 0.46 |

- (1) See Note 2 (Investment Income) to the Financial Statements for additional information regarding paid-in-kind and non-cash dividends and distributions.
- (2) Pacific Coast Oil Trust pays monthly dividends, but due to the timing of its ex-dividend dates, the Fund only received two dividends during its third fiscal quarter. Adjusted NDI includes the third monthly dividend attributable to the Fund's third fiscal quarter (\$0.1 million adjustment).
- (3) The distribution of \$0.46 per share for the third quarter of fiscal 2013 was paid on October 18, 2013. 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 that include, but are not limited to:

NDI and Adjusted NDI generated in the current quarter;

Expected NDI over the next twelve months; and

Realized and unrealized gains generated by the portfolio.

On September 25, 2013, we declared a quarterly distribution of \$0.46 per common share for the third quarter of fiscal 2013 (a total distribution of \$10.1 million). The distribution represents an increase of 1.1% from the prior quarter's distribution and an increase of 5.7% from the distribution for the quarter ended August 31, 2012. The distribution was paid on October 18, 2013 to common stockholders of record on October 11, 2013.

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MANAGEMENT DISCUSSION

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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 paid-in-kind dividends whereas such amounts are not included as investment income for GAAP purposes, but rather are recorded as unrealized gains upon receipt.

NDI includes commitment fees from PIPE investments, whereas such amounts are generally not included in investment income for GAAP purposes, but rather are recorded as a reduction to the cost of the investment.

Certain 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 to the earlier of the expected call date or the maturity date 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 premium that we received, thereby generating a profit. The premium we receive from selling call options, less (i) the amount that we pay to repurchase such call option contracts and (ii) the amount by which the market price of an underlying security is above the strike price at the time a new call option is written (if any), is included in NDI. For GAAP purposes, premiums received from call option contracts sold are not included in investment income. See Note 2 Significant Accounting Policies for a full discussion of the GAAP treatment of option contracts.

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

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

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 August 31, 2013 of \$323 million was comprised of \$205 million of senior unsecured notes (Senior Notes), \$53 million outstanding under our unsecured revolving credit facility (the Credit Facility) and \$65 million of mandatory redeemable preferred

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stock. Total leverage represented 30% of total assets at August 31, 2013. As of October 17, 2013, we had \$37 million borrowed under our Credit Facility, and we had \$11 million of cash.

The Credit Facility has a \$100 million commitment amount and matures on January 20, 2014. The interest rate varies between LIBOR plus 1.75% and LIBOR plus 2.25%, depending on our asset coverage ratios.

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Outstanding loan balances accrue interest daily at a rate equal to one-month LIBOR plus 1.75%, based on current asset coverage ratios. We pay a commitment fee of 0.35% per annum on any unused amounts of the Credit Facility. We have begun discussions with our current lenders and do not anticipate any significant issues with respect to the renewal of this facility at no less favorable terms than our existing facility. A full copy of the Credit Facility is available on our website www.kaynefunds.com.

At August 31, 2013, we had \$205 million of Senior Notes outstanding, which mature between 2016 and 2023. At August 31, 2013, we had \$65 million of mandatory redeemable preferred stock outstanding, which is subject to mandatory redemption in 2018 and 2020.

At August 31, 2013, our asset coverage ratios under the Investment Company Act of 1940, as amended (the 1940 Act), were 419% for debt and 334% for total leverage (debt plus preferred stock). Our long-term target asset coverage ratio with respect to our debt is 400%, but at times we may be above or below our target depending on market conditions.

As of August 31, 2013, our total leverage consisted of both fixed rate (84%) and floating rate (16%) obligations. At such date, the weighted average interest/dividend rate on our total leverage was 3.92%.

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SCHEDULE OF INVESTMENTS

AUGUST 31, 2013

(amounts in 000 s, except number of option contracts)

(UNAUDITED)

| Description | Shares/Units | Value |
|---|--------------|----------|
| Long-Term Investments 142.5% | | |
| Equity Investments⁽¹⁾ 124.8% | | |
| United States 119.0% | | |
| Midstream MLP⁽²⁾⁽³⁾ 56.5% | | |
| Access Midstream Partners, L.P. ⁽⁴⁾ | 115 | \$ 5,236 |
| Atlas Pipeline Partners, L.P. | 129 | 4,986 |
| Buckeye Partners, L.P. Class B Units ⁽⁵⁾⁽⁶⁾⁽⁷⁾ | 328 | 22,949 |
| Crestwood Midstream Partners LP | 469 | 12,164 |
| Crosstex Energy, L.P. | 584 | 10,937 |
| DCP Midstream Partners, LP | 374 | 17,909 |
| Enbridge Energy Management, L.L.C. ⁽⁶⁾⁽⁸⁾ | 2,203 | 66,062 |
| Energy Transfer Partners, L.P. ⁽⁴⁾⁽⁹⁾ | 204 | 10,453 |
| Enterprise Products Partners L.P. ⁽⁹⁾ | 321 | 19,084 |
| Exterran Partners, L.P. | 352 | 9,820 |
| Global Partners LP | 326 | 11,022 |
| Inergy, L.P. | 276 | 3,799 |
| Inergy Midstream, L.P. | 683 | 15,877 |
| Kinder Morgan Management, LLC ⁽⁶⁾⁽⁸⁾ | 931 | 74,340 |
| MarkWest Energy Partners, L.P. ⁽⁴⁾⁽¹⁰⁾ | 228 | 15,256 |
| Niska Gas Storage Partners LLC | 119 | 1,685 |
| NuStar Energy L.P. | 53 | 2,202 |
| ONEOK Partners, L.P. | 210 | 10,389 |
| Plains All American GP LLC Unregistered ⁽⁴⁾⁽⁸⁾⁽¹⁰⁾ | 7 | 31,057 |
| Plains All American Pipeline, L.P. ⁽¹⁰⁾ | 459 | 23,202 |
| PVR Partners, L.P. ⁽¹⁰⁾ | 323 | 7,498 |
| QEP Midstream Partners, LP ⁽¹¹⁾ | 50 | 1,139 |
| Regency Energy Partners LP | 729 | 19,708 |
| Summit Midstream Partners, LP | 90 | 2,978 |
| Targa Resources Partners LP ⁽⁴⁾ | 63 | 3,054 |
| USA Compression Partners, LP | 5 | 113 |
| Western Gas Partners, LP | 115 | 6,807 |
| Williams Partners L.P. | 364 | 17,956 |
| | | 427,682 |
| Midstream Company⁽²⁾ 55.3% | | |
| Capital Product Partners L.P. ⁽¹²⁾ | 1,354 | 11,997 |
| Capital Products Partners L.P. Class B Units ⁽⁵⁾⁽¹²⁾⁽¹³⁾ | 606 | 5,752 |
| CenterPoint Energy, Inc. | 708 | 16,244 |
| Golar LNG Partners LP ⁽¹²⁾ | 1,073 | 34,882 |
| Kinder Morgan, Inc. | 1,894 | 71,855 |
| KNOT Offshore Partners LP ⁽¹²⁾ | 543 | 13,059 |
| NiSource Inc. ⁽⁴⁾ | 372 | 10,882 |
| ONEOK, Inc. ⁽⁴⁾ | 1,599 | 82,231 |
| Spectra Energy Corp. ⁽⁴⁾ | 818 | 27,084 |
| Targa Resources Corp. ⁽⁴⁾ | 417 | 28,404 |

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| | | |
|--|-------|---------|
| Teekay Offshore Partners L.P. ⁽⁴⁾⁽¹²⁾ | 556 | 17,657 |
| Teekay Offshore Partners L.P. Series A Preferred Units ⁽¹²⁾⁽¹⁴⁾ | 300 | 7,410 |
| The Williams Companies, Inc. ⁽⁴⁾ | 2,523 | 91,427 |
| | | 418,884 |

See accompanying notes to financial statements.

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SCHEDULE OF INVESTMENTS

AUGUST 31, 2013

(amounts in 000 s, except number of option contracts)

(UNAUDITED)

| Description | Shares/Units | Value |
|--|--------------|----------|
| Other Energy 5.9% | | |
| Enduro Royalty Trust | 132 | \$ 2,062 |
| HollyFrontier Corporation ⁽⁴⁾ | 102 | 4,528 |
| Marathon Petroleum Corporation ⁽⁴⁾ | 106 | 7,664 |
| NRG Yield, Inc. Class A ⁽¹⁾ | 147 | 4,095 |
| Pacific Coast Oil Trust | 309 | 5,620 |
| Phillips 66 ⁽⁴⁾ | 111 | 6,321 |
| SandRidge Mississippian Trust II ⁽¹⁵⁾ | 184 | 2,452 |
| Seadrill Limited ⁽⁴⁾ | 126 | 5,810 |
| The Southern Company | 80 | 3,309 |
| VOC Energy Trust | 173 | 2,650 |
| | | 44,511 |
| Other MLP⁽³⁾ 0.7% | | |
| BreitBurn Energy Partners L.P. | 183 | 3,235 |
| Emerge Energy Services LP ⁽¹⁰⁾ | 43 | 1,247 |
| LRR Energy LP | 52 | 780 |
| | | 5,262 |
| Other 0.6% | | |
| Navios Maritime Partners L.P. ⁽¹²⁾ | 330 | 4,651 |
| Total United States (Cost \$692,576) | | 900,990 |
| Canada 5.8% | | |
| Midstream Company⁽²⁾ 5.6% | | |
| Enbridge Inc. | 303 | 12,412 |
| Keyera Corp. ⁽⁴⁾ | 108 | 5,895 |
| Pembina Pipeline Corporation ⁽⁴⁾⁽⁹⁾ | 602 | 18,676 |
| TransCanada Corporation | 115 | 5,016 |
| | | 41,999 |
| Other Energy 0.2% | | |
| Crescent Point Energy Corp. ⁽⁴⁾ | 50 | 1,824 |
| Total Canada (Cost \$39,471) | | 43,823 |
| Total Equity Investments (Cost \$732,047) | | 944,813 |

| | Interest Rate | Maturity Date | Principal Amount | |
|-----------------------------------|------------------|------------------|---------------------|--------|
| Debt Instruments 17.7% | | | | |
| Upstream 15.6% | | | | |
| Athlon Energy Inc. | 7.375% | 4/15/21 | \$ 5,600 | 5,684 |
| Aurora Oil & Gas Limited | 7.500 | 4/1/20 | 9,600 | 9,504 |
| BlackBrush Oil & Gas, L.P. | (16) | 6/3/19 | 8,688 | 8,819 |
| Clayton Williams Energy, Inc. | 7.750 | 4/1/19 | 8,371 | 8,580 |
| Comstock Resources, Inc. | 9.500 | 6/15/20 | 3,500 | 3,815 |
| CrownRock, L.P. | 7.125 | 4/15/21 | 4,500 | 4,477 |
| El Paso Corporation | 7.750 | 1/15/32 | 1,875 | 1,977 |
| Halcón Resources Corporation | 9.750 | 7/15/20 | 15,250 | 15,822 |
| Midstates Petroleum Company, Inc. | 9.250 | 6/1/21 | 7,800 | 7,449 |
| Midstates Petroleum Company, Inc. | 10.750 | 10/1/20 | 3,850 | 3,908 |

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

SCHEDULE OF INVESTMENTS

AUGUST 31, 2013

(amounts in 000 s, except number of option contracts)

(UNAUDITED)

| Description | Interest Rate | Maturity Date | Principal Amount | Value |
|---|---------------------|------------------------|-------------------------|-----------|
| Upstream (continued) | | | | |
| Penn Virginia Corporation | 8.500% | 5/1/20 | \$ 11,800 | \$ 11,800 |
| Resolute Energy Corporation | 8.500 | 5/1/20 | 3,775 | 3,869 |
| Rex Energy Corporation | 8.875 | 12/1/20 | 11,000 | 11,440 |
| Sanchez Energy Corporation | 7.750 | 6/15/21 | 7,750 | 7,634 |
| Rice Drilling B LLC | (17) | 10/22/18 | 5,591 | 5,479 |
| RKI Exploration & Production, LLC | 8.500 | 8/1/21 | 7,500 | 7,500 |
| | | | | 117,757 |
| Midstream Company⁽²⁾ 1.1% | | | | |
| SemGroup Corporation | 7.500 | 6/15/21 | 4,000 | 4,090 |
| Teekay Corporation | 8.500 | 1/15/20 | 4,325 | 4,693 |
| | | | | 8,783 |
| Coal 1.0% | | | | |
| Arch Coal, Inc. | 7.250 | 6/15/21 | 9,500 | 7,410 |
| Total Debt Investments (Cost \$132,974) | | | | 133,950 |
| Total Long-Term Investments (Cost \$865,021) | | | | 1,078,763 |
| | Strike Price | Expiration Date | No. of Contracts | |
| Liabilities | | | | |
| Call Option Contracts Written⁽¹⁸⁾ | | | | |
| United States | | | | |
| Midstream MLP | | | | |
| Access Midstream Partners, L.P. | \$ 50.00 | 9/20/13 | 450 | (6) |
| Energy Transfer Partners, L.P. | 50.00 | 9/20/13 | 180 | (32) |
| Energy Transfer Partners, L.P. | 52.50 | 9/20/13 | 180 | (10) |
| Energy Transfer Partners, L.P. | 55.00 | 9/20/13 | 300 | (3) |
| MarkWest Energy Partners, L.P. | 70.00 | 9/20/13 | 400 | (22) |
| MarkWest Energy Partners, L.P. | 72.50 | 9/20/13 | 360 | (5) |
| Targa Resources Partners LP | 50.00 | 9/20/13 | 300 | (14) |
| | | | | (92) |
| Midstream Company | | | | |
| NiSource Inc. | 30.00 | 9/20/13 | 310 | (5) |
| NiSource Inc. | 31.00 | 9/20/13 | 310 | (2) |
| ONEOK, Inc. | 52.50 | 9/20/13 | 700 | (63) |

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| | | | | |
|-------------------------------|-------|----------|-------|-------|
| ONEOK, Inc. | 55.00 | 9/20/13 | 700 | (11) |
| ONEOK, Inc. | 52.50 | 10/18/13 | 1,750 | (210) |
| ONEOK, Inc. | 55.00 | 10/18/13 | 1,750 | (87) |
| Spectra Energy Corp. | 34.00 | 10/18/13 | 1,220 | (67) |
| Targa Resources Corp. | 70.00 | 9/20/13 | 320 | (26) |
| Targa Resources Corp. | 70.00 | 10/18/13 | 490 | (73) |
| Teekay Offshore Partners L.P. | 32.00 | 9/20/13 | 500 | (33) |
| Teekay Offshore Partners L.P. | 33.00 | 10/18/13 | 325 | (19) |
| The Williams Companies, Inc. | 35.00 | 9/20/13 | 1,000 | (136) |
| The Williams Companies, Inc. | 37.00 | 9/20/13 | 1,300 | (40) |
| | | | | (772) |

See accompanying notes to financial statements.

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SCHEDULE OF INVESTMENTS

AUGUST 31, 2013

(amounts in 000 s, except number of option contracts)

(UNAUDITED)

| Description | Strike Price | Expiration Date | No. of Contracts | Value |
|--|--------------|-----------------|------------------|------------|
| Other Energy | | | | |
| HollyFrontier Corporation | \$ 46.50 | 10/18/13 | 250 | \$ (29) |
| HollyFrontier Corporation | 48.50 | 10/18/13 | 250 | (16) |
| Marathon Petroleum Corporation | 75.00 | 10/18/13 | 250 | (62) |
| Marathon Petroleum Corporation | 77.50 | 10/18/13 | 500 | (110) |
| Marathon Petroleum Corporation | 80.00 | 10/18/13 | 250 | (24) |
| Phillips 66 | 60.00 | 10/18/13 | 500 | (67) |
| Seadrill Limited | 45.00 | 9/20/13 | 250 | (34) |
| | | | | (342) |
| Total United States (Premium Received \$1,513) | | | | (1,206) |
| Canada | | | | |
| Midstream Company | | | | |
| Keyera Corp. | 58.00 | 10/18/13 | 250 | (34) |
| Pembina Pipeline Corporation | 33.00 | 9/20/13 | 900 | (26) |
| Pembina Pipeline Corporation | 30.00 | 10/18/13 | 300 | (48) |
| | | | | (108) |
| Other Energy | | | | |
| Crescent Point Energy Corp. | 40.00 | 9/20/13 | 100 | (1) |
| Total Canada (Premium Received \$105) | | | | (109) |
| Total Call Option Contracts Written (Premiums Received \$1,618) | | | | (1,315) |
| Credit Facility | | | | (53,000) |
| Senior Unsecured Notes | | | | (205,000) |
| Mandatory Redeemable Preferred Stock at Liquidation Value | | | | (65,000) |
| Other Liabilities | | | | (7,037) |
| Total Liabilities | | | | (331,352) |
| Other Assets | | | | 9,455 |
| Total Liabilities in Excess of Other Assets | | | | (321,897) |
| Net Assets Applicable to Common Stockholders | | | | \$ 756,866 |

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- (1) Unless otherwise noted, equity investments are common units/common shares.
- (2) Refer to the Glossary of Key Terms (page 36) for the definition of Midstream Companies and Midstream MLPs.
- (3) Unless otherwise noted, securities are treated as a publicly-traded partnership for regulated investment company (RIC) qualification purposes. To qualify as a RIC for tax purposes, the Fund may directly invest up to 25% of its total assets in equity and debt securities of entities treated as publicly-traded partnerships. The Fund had 24.3% of its total assets invested in publicly-traded partnerships at August 31, 2013. It is the Fund's intention to be treated as a RIC for tax purposes.
- (4) Security or a portion thereof is segregated as collateral on option contracts written.
- (5) Fair valued securities, restricted from public sale. See Notes 2, 3 and 7 in Notes to Financial Statements.
- (6) Distributions are paid-in-kind.
- (7) On September 1, 2013, all of the Buckeye Partners, L.P. Class B Units were converted into common units on a one-for-one basis. As of August 31, 2013, the Fund valued the Class B Units at the same price as the common units.

See accompanying notes to financial statements.

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SCHEDULE OF INVESTMENTS

AUGUST 31, 2013

(amounts in 000 s, except number of option contracts)

(UNAUDITED)

- (8) Security is not treated as a publicly-traded partnership for RIC qualification purposes.
- (9) In lieu of cash distributions, the Fund has elected to receive distributions in additional units/stock through the issuer's dividend reinvestment program.
- (10) The Fund believes that it is an affiliate of Emerge Energy Services LP, MarkWest Energy Partners, L.P., PVR Partners, L.P., Plains All American GP LLC and Plains All American Pipeline, L.P. See Note 6 Agreements and Affiliations.
- (11) Security is not currently paying cash distributions but is expected to pay cash distributions within the next 12 months.
- (12) This company is structured like an MLP but is not treated as a publicly-traded partnership for RIC qualification purposes.
- (13) Class B Units are convertible on a one-for-one basis into common units of Capital Product Partners L.P. (CPLP) and are senior to the common units in terms of liquidation preference and priority of distributions. The Class B Units pay quarterly cash distributions of \$0.21375 per unit and are convertible at any time at the option of the holder. If CPLP increases the quarterly cash distribution per common unit, the distribution per Class B Unit will increase by an equal amount. If CPLP does not redeem the Class B Units by May 2022, then the distribution increases by 25% per quarter to a maximum of \$0.33345 per unit. CPLP may require that the Class B Units convert into common units after May 2015 if the common unit price exceeds \$11.70 per unit, and the Class B Units are callable after May 2017 at a price of \$9.27 per unit and after May 2019 at \$9.00 per unit.
- (14) Series A Preferred Units represent preferred equity interests in Teekay Offshore Partners L.P. (TOO). The Series A Preferred Units are perpetual and are senior to the common units in terms of liquidation preference and priority of distributions. Series A Preferred Units do not have any conversion or exchange rights and pay quarterly cash distributions of \$0.453125 per unit. At any time on or after April 30, 2018, TOO may redeem the Series A Preferred Units at a redemption price of \$25.00 per unit plus all accumulated and unpaid distributions.
- (15) Security is treated as a publicly-traded partnership for RIC qualification purposes.
- (16) Floating rate first lien secured term loan. Security pays interest at a rate of LIBOR + 650 basis points with a 1.25% LIBOR floor (7.75% as of August 31, 2013).
- (17)

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Floating rate second lien secured term loan. Security pays interest at a rate of LIBOR + 725 basis points with a 1.25% LIBOR floor (8.50% as of August 31, 2013).

- (18) Security is non-income producing.

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.**STATEMENT OF ASSETS AND LIABILITIES****AUGUST 31, 2013****(amounts in 000 s, except share and per share amounts)****(UNAUDITED)****ASSETS**

| | |
|---|------------------|
| Investments, at fair value: | |
| Non-affiliated (Cost \$823,252) | \$ 1,000,503 |
| Affiliated (Cost \$41,769) | 78,260 |
| Total investments (Cost \$865,021) | 1,078,763 |
| Cash | 2,815 |
| Deposits with brokers | 250 |
| Receivable for securities sold | 302 |
| Interest, dividends and distributions receivable | 3,657 |
| Deferred debt and preferred stock offering costs and other assets | 2,431 |
| Total Assets | 1,088,218 |

LIABILITIES

| | |
|---|----------------|
| Payable for securities purchased | 556 |
| Investment management fee payable | 1,154 |
| Call option contracts written (Premiums received \$1,618) | 1,315 |
| Accrued directors' fees and expenses | 48 |
| Accrued expenses and other liabilities | 5,279 |
| Credit facility | 53,000 |
| Senior unsecured notes | 205,000 |
| Mandatory redeemable preferred stock, \$25.00 liquidation value per share (2,600,000 shares issued and outstanding) | 65,000 |
| Total Liabilities | 331,352 |

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 756,866**NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS CONSIST OF**

| | |
|--|----------|
| Common stock, \$0.001 par value (22,005,876 shares issued and outstanding and 197,400,000 shares authorized) | \$ 22 |
| Paid-in capital | 524,739 |
| Accumulated net investment income less distributions not treated as tax return of capital | (33,427) |
| Accumulated net realized gains less distributions not treated as tax return of capital | 51,492 |
| Net unrealized gains | 214,040 |

NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS \$ 756,866**NET ASSET VALUE PER COMMON SHARE** \$ 34.39

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

STATEMENT OF OPERATIONS

(amounts in 000 s)

(UNAUDITED)

| | For the Three Months Ended August 31, 2013 | For the Nine Months Ended August 31, 2013 |
|--|--|---|
| INVESTMENT INCOME | | |
| Income | | |
| Dividends and distributions: | | |
| Non-affiliated investments | \$ 8,704 | \$ 25,806 |
| Affiliated investments | 925 | 2,553 |
| Total dividends and distributions (after foreign taxes withheld of \$74 and \$193, respectively) | 9,629 | 28,359 |
| Return of capital | (5,311) | (15,270) |
| Net dividends and distributions | 4,318 | 13,089 |
| Interest and other income | 2,689 | 8,021 |
| Total investment income | 7,007 | 21,110 |
| Expenses | | |
| Investment management fees | 3,372 | 9,451 |
| Professional fees | 126 | 347 |
| Administration fees | 59 | 172 |
| Directors' fees and expenses | 54 | 149 |
| Reports to stockholders | 45 | 108 |
| Custodian fees | 37 | 96 |
| Insurance | 44 | 131 |
| Excise taxes | | 410 |
| Other expenses | 82 | 243 |
| Total expenses before interest expense and preferred distributions | 3,819 | 11,107 |
| Interest expense and amortization of offering costs | 2,528 | 6,977 |
| Distributions on mandatory redeemable preferred stock and amortization of offering costs | 835 | 2,505 |
| Total expenses | 7,182 | 20,589 |
| Net Investment Income (Loss) | (175) | 521 |
| REALIZED AND UNREALIZED GAINS (LOSSES) | | |
| Net Realized Gains | | |
| Investments non-affiliated | 8,166 | 30,861 |
| Investments affiliated | 102 | 56 |
| Foreign currency transactions | (16) | (32) |
| Options | 1,760 | 3,490 |
| Interest rate swap contracts | | (385) |
| Net Realized Gains | 10,012 | 33,990 |
| Net Change in Unrealized Gains | | |

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| | | |
|---|------------------|-------------------|
| Investments non-affiliated | 12,698 | 90,794 |
| Investments affiliated | 6,410 | 21,535 |
| Foreign currency translations | | (5) |
| Options | (260) | 858 |
| Net Change in Unrealized Gains | 18,848 | 113,182 |
| Net Realized and Unrealized Gains | 28,860 | 147,172 |
| NET INCREASE IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS RESULTING FROM OPERATIONS | \$ 28,685 | \$ 147,693 |

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

STATEMENT OF CHANGES IN NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS

(amounts in 000 s, except share amounts)

| | For the Nine Months Ended August 31, 2013 (Unaudited) | For the Fiscal Year Ended November 30, 2012 |
|---|---|--|
| OPERATIONS | | |
| Net investment income ⁽¹⁾ | \$ 521 | \$ 3,648 |
| Net realized gains | 33,990 | 36,772 |
| Net change in unrealized gains | 113,182 | 64,045 |
| Net Increase in Net Assets Resulting from Operations | 147,693 | 104,465 |
| DIVIDENDS AND DISTRIBUTIONS TO COMMON STOCKHOLDERS⁽¹⁾ | | |
| Dividends | (29,558) ⁽²⁾ | (28,368) ⁽³⁾ |
| Distributions net long-term capital gains | ⁽²⁾ | (8,804) ⁽³⁾ |
| Dividends and Distributions to Common Stockholders | (29,558) | (37,172) |
| CAPITAL STOCK TRANSACTIONS | | |
| Issuance of 110,634 and 231,265 shares of common stock from reinvestment of dividends and distributions, respectively | 3,505 | 5,889 |
| Total Increase in Net Assets Applicable to Common Stockholders | 121,640 | 73,182 |
| NET ASSETS APPLICABLE TO COMMON STOCKHOLDERS | | |
| Beginning of period | 635,226 | 562,044 |
| End of period | \$ 756,866 | \$ 635,226 |

(1) Distributions on the Fund's mandatory redeemable preferred stock are treated as an operating expense under GAAP and are included in the calculation of net investment income. See Note 2 Significant Accounting Policies. The Fund estimates that the distribution in the amount of \$2,409 paid to mandatory redeemable preferred stockholders during the nine months ended August 31, 2013 will be characterized as a dividend (a portion of which may be eligible to be treated as qualified dividend income). This estimate is based solely on the Fund's operating results during the period and does not reflect the expected results during the fiscal year. The actual characterization of the mandatory redeemable preferred stock distributions made during the period will not be determinable until after the end of the fiscal year when the Fund can determine earnings and profits. Therefore, the characterization may differ from the preliminary estimates. Distributions in the amount of \$2,803 paid to mandatory redeemable preferred stockholders for the fiscal year ended November 30, 2012 were characterized as dividend income (\$2,139) and as long-term capital gains (\$664). This characterization is based on the Fund's earnings and profits.

(2) This is an estimate of the characterization of the distributions paid to common stockholders for the nine months ended August 31, 2013 as either a dividend (a portion of which may be eligible to be treated as qualified dividend income) or distribution (return of capital). This estimate is based solely on the Fund's operating results during the period and does not reflect the expected results during the fiscal year. The actual characterization of the common stock distributions made during the current year will not be determinable until after the end of the fiscal year when the Fund can determine earnings and profits. Therefore, the characterization may differ from the preliminary estimates.

- (3) Distributions paid to common stockholders for the fiscal year ended November 30, 2012 are characterized as either dividend income (a portion was eligible to be treated as qualified dividend income) or distributions (long-term capital gains). This characterization is based on the Fund's earnings and profits.

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.**STATEMENT OF CASH FLOWS****FOR THE NINE MONTHS ENDED AUGUST 31, 2013****(amounts in 000 s)****(UNAUDITED)****CASH FLOWS FROM OPERATING ACTIVITIES**

| | |
|---|------------|
| Net increase in net assets resulting from operations | \$ 147,693 |
| Adjustments to reconcile net increase in net assets resulting from operations to net cash used in operating activities: | |
| Return of capital distributions | 15,270 |
| Net realized gains (excluding foreign currency transactions) | (34,022) |
| Net unrealized gains (excluding foreign currency translations) | (113,187) |
| Accretion of bond discounts, net | (73) |
| Purchase of long-term investments | (433,089) |
| Proceeds from sale of long-term investments | 392,524 |
| Decrease in receivable for securities sold | 2,985 |
| Increase in interest, dividends and distributions receivable | (159) |
| Amortization of deferred debt offering costs | 438 |
| Amortization of mandatory redeemable preferred stock offering costs | 96 |
| Increase in other assets, net | (159) |
| Increase in payable for securities purchased | 137 |
| Increase in investment management fee payable | 204 |
| Decrease in call option contracts written, net | (630) |
| Increase in accrued expenses and other liabilities | 2,221 |

| | |
|--|-----------------|
| Net Cash Used in Operating Activities | (19,751) |
|--|-----------------|

CASH FLOWS FROM FINANCING ACTIVITIES

| | |
|--|----------|
| Increase in borrowings under the credit facility | 5,000 |
| Proceeds from offering of senior unsecured notes | 40,000 |
| Costs associated with offering of senior unsecured notes | (386) |
| Cash distributions paid to common stockholders, net | (26,053) |

| | |
|--|---------------|
| Net Cash Provided by Financing Activities | 18,561 |
|--|---------------|

| | |
|-----------------------------|----------------|
| NET DECREASE IN CASH | (1,190) |
|-----------------------------|----------------|

| | |
|---------------------------------|--------------|
| CASH BEGINNING OF PERIOD | 4,005 |
|---------------------------------|--------------|

| | |
|---------------------------|-----------------|
| CASH END OF PERIOD | \$ 2,815 |
|---------------------------|-----------------|

Supplemental disclosure of cash flow information:

Non-cash financing activities not included herein consisted of reinvestment of distributions of \$3,505 pursuant to the Fund's dividend reinvestment plan.

During the nine months ended August 31, 2013, interest paid was \$4,364 and federal excise tax paid was \$410.

During the nine months ended August 31, 2013, the Fund received \$8,147 of paid-in-kind and non-cash dividends and distributions. See Note 2 Significant Accounting Policies.

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

FINANCIAL HIGHLIGHTS

(amounts in 000 s, except share and per share amounts)

| | For the Nine Months Ended August 31, 2013 (Unaudited) | For the Fiscal Year Ended November 30, | | For the Period November 24, 2010 ⁽¹⁾ through November 30, 2010 |
|---|---|---|------------|---|
| | | 2012 | 2011 | |
| Per Share of Common Stock⁽²⁾ | | | | |
| Net asset value, beginning of period | \$ 29.01 | \$ 25.94 | \$ 23.80 | \$ 23.83 ⁽³⁾ |
| Net investment income (loss) ⁽⁴⁾ | 0.02 | 0.17 | 0.29 | (0.02) |
| Net realized and unrealized gains (losses) | 6.71 | 4.64 | 3.12 | (0.01) |
| Total income (loss) from operations | 6.73 | 4.81 | 3.41 | (0.03) |
| Common dividends ⁽⁵⁾ | (1.35) | (1.30) | (1.20) | |
| Common distributions long-term capital gain ⁽⁵⁾ | | (0.41) | | |
| Common distributions return of capital ⁽⁵⁾ | | | | |
| Total dividends and distributions common | (1.35) | (1.71) | (1.20) | |
| Effect of shares issued in reinvestment of distributions | | (0.03) | (0.04) | |
| Effect of issuance of common stock | | | (0.03) | |
| Net asset value, end of period | \$ 34.39 | \$ 29.01 | \$ 25.94 | \$ 23.80 |
| Per share market value, end of period | \$ 32.82 | \$ 28.04 | \$ 22.46 | \$ 25.00 |
| Total investment return based on common stock market value ⁽⁶⁾ | 22.1% ⁽⁷⁾ | 33.3% | (5.5)% | 0.0% ⁽⁷⁾ |
| Supplemental Data and Ratios⁽⁸⁾ | | | | |
| Net assets applicable to common stockholders, end of period | \$ 756,866 | \$ 635,226 | \$ 562,044 | \$ 452,283 |
| Ratio of expenses to average net assets | | | | |
| Management fees ⁽⁹⁾ | 1.8% | 1.7% | 1.6% | 1.3% |
| Other expenses | 0.2 | 0.3 | 0.3 | 0.3 ⁽¹⁰⁾ |
| Excise taxes | 0.1 ⁽⁷⁾ | | | |
| Subtotal | 2.1 | 2.0 | 1.9 | 1.6 |
| Interest expense and distributions on mandatory redeemable preferred stock ⁽⁴⁾ | 1.8 | 1.8 | 1.3 | |
| Management fee waiver | | | (0.3) | (0.3) |
| Total expenses | 3.9% | 3.8% | 2.9% | 1.3% |
| Ratio of net investment income (loss) to average net assets ⁽⁴⁾ | 0.1% | 0.6% | 1.1% | (1.3)% ⁽¹⁰⁾ |
| Net increase (decrease) in net assets applicable to common stockholders resulting from operations to average net assets | 20.7% ⁽⁷⁾ | 16.8% | 13.4% | (0.1)% ⁽⁷⁾ |
| Portfolio turnover rate | 39.0% ⁽⁷⁾ | 67.6% | 74.1% | 0.0% ⁽⁷⁾ |
| Average net assets | \$ 712,165 | \$ 620,902 | \$ 537,044 | \$ 452,775 |
| Senior unsecured notes outstanding, end of period | 205,000 | 165,000 | 115,000 | |
| Credit facility outstanding, end of period | 53,000 | 48,000 | 45,000 | |

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| | | | | |
|---|------------|------------|------------|------------|
| Mandatory redeemable preferred stock, end of period | 65,000 | 65,000 | 35,000 | |
| Average shares of common stock outstanding | 21,952,262 | 21,794,596 | 21,273,512 | 19,004,000 |
| Asset coverage of total debt ⁽¹¹⁾ | 418.6% | 428.7% | 473.2% | |
| Asset coverage of total leverage (debt and preferred stock) ⁽¹²⁾ | 334.3% | 328.5% | 388.2% | |
| Average amount of borrowings per share of common stock during the period ⁽²⁾ | \$ 10.39 | \$ 8.85 | \$ 6.50 | |

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

FINANCIAL HIGHLIGHTS

(amounts in 000 s, except share and per share amounts)

- (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 \$1.125 per share and offering costs of \$0.05 per share.
- (4) Distributions on the Fund's mandatory redeemable preferred stock are treated as an operating expense under GAAP and are included in the calculation of net investment income (loss). See Note 2 Significant Accounting Policies.
- (5) The information presented for the nine months ended August 31, 2013 is an estimate of the characterization of the distribution paid and is based on the Fund's operating results during the period. The information presented for each of the other periods is a characterization of the total distributions paid to the common stockholders as either a dividend (a portion was eligible to be treated as qualified dividend income) or a distribution (long-term capital gains or return of capital) and is based on the Fund's earnings and profits.
- (6) 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 Fund's dividend reinvestment plan.
- (7) Not annualized.
- (8) Unless otherwise noted, ratios are annualized.
- (9) Ratio reflects total management fee before waiver.
- (10) For purposes of annualizing other expenses of the Fund, professional fees and reports to stockholders are fees associated with the annual audit and annual report and therefore have not been annualized.
- (11) 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 and mandatory redeemable preferred stock divided by the aggregate amount of Senior Notes and any other senior securities representing indebtedness. Under the 1940 Act, the Fund 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 Credit Facility is considered a senior security representing indebtedness.

- (12) 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 Fund may not declare or make any distribution on its common stock nor can it issue additional preferred stock if at the time of such declaration or issuance, its asset coverage with respect to all senior securities would be less than 200%. In addition to the limitations under the 1940 Act, the Fund, under the terms of its mandatory redeemable preferred stock, would not be able to declare or pay any distributions on its common stock if such declaration would cause its asset coverage with respect to all senior securities to be less than 225%. For purposes of these asset coverage ratio tests, the Credit Facility is considered a senior security representing indebtedness.

See accompanying notes to financial statements.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

1. Organization

Kayne Anderson Midstream/Energy Fund, Inc. (the Fund) was organized as a Maryland corporation on August 26, 2010 and commenced operations on November 24, 2010. The Fund is registered under the Investment Company Act of 1940, as amended (the 1940 Act), as a non-diversified, closed-end investment management company. The Fund's investment objective is to provide a high level of return with an emphasis on making quarterly cash distributions to its stockholders. The Fund seeks to achieve that investment objective by investing at least 80% of its total assets in the securities of companies in the Midstream/Energy Sector, consisting of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies. The Fund's shares of common stock are listed on the New York Stock Exchange, Inc. (NYSE) under the symbol KMF.

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. Cash and Cash Equivalents Cash and cash equivalents include short-term, liquid investments with an original maturity of three months or less and include money market fund accounts.

C. Calculation of Net Asset Value The Fund determines its net asset value no less frequently than as of the last day of each month based on the most recent close of regular session trading on the NYSE, and makes its net asset value available for publication monthly. Currently, the Fund calculates its net asset value on a weekly basis. Net asset value is computed by dividing the value of the Fund's assets (including accrued interest and distributions), less all of its liabilities (including accrued expenses, distributions payable and any indebtedness) and the liquidated value of any outstanding preferred stock, by the total number of common shares outstanding.

D. 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. Debt securities that are considered bonds are valued by using the mean of the bid and ask prices provided by an independent pricing service. For debt securities that are considered bank loans, the fair market value is determined by using the mean of the bid and ask prices provided by the agent or 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 Fund may not be able to purchase or sell 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.

The Fund 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 Fund for which reliable market quotations are not readily

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

available, valuations are determined in a manner that most accurately 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 valued by senior professionals of KA Fund Advisors, LLC (KAFAs or the Adviser) who are responsible for the portfolio investments. The investments will be valued monthly, with new investments valued at the time such investment was made.

Investment Team Valuation Documentation. Preliminary valuation conclusions will be determined by senior management of KAFAs. Such valuations and supporting documentation is submitted to the Valuation Committee (a committee of the Fund's Board of Directors) or the Board of Directors on a quarterly basis.

Valuation Committee. The Valuation Committee meets to consider the valuations submitted by KAFAs at the end of each quarter. Between meetings of the Valuation Committee, a senior officer of KAFAs is authorized to make valuation determinations. All valuation determinations of the Valuation Committee are subject to ratification by the Board of Directors at its next regular meeting.

Valuation Firm. 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 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.

As of August 31, 2013, the Fund held 7.9% of its net assets applicable to common stockholders (5.5% of total assets) in securities that were fair valued pursuant to the procedures adopted by the Board of Directors. The aggregate fair value of these securities at August 31, 2013 was \$59,758. See Note 3 Fair Value and Note 7 Restricted Securities.

E. Repurchase Agreements From time to time, the Fund 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 whom the Fund 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 Fund to possible loss because of adverse market action or delays in connection with the disposition of the underlying securities. As of August 31, 2013, the Fund did not have any repurchase agreements.

F. Short Sales A short sale is a transaction in which the Fund 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 Fund may arrange through a broker to borrow the securities to be delivered to the buyer. The proceeds received by the Fund for the short sale are retained by the broker until the Fund replaces the borrowed securities. In borrowing the securities to be delivered to the buyer, the Fund becomes obligated to replace the securities borrowed at their market price at the time of replacement, whatever the price may be.

The Fund's short sales, if any, are fully collateralized. The Fund is required to maintain assets consisting of cash or liquid securities equal in amount to the liability created by the short sale. These assets are adjusted daily

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

to reflect changes in the value of the securities sold short. The Fund is liable for any dividends or distributions paid on securities sold short.

The Fund may also sell short against the box (*i.e.*, the Fund enters into a short sale as described above while holding an offsetting long position in the security which it sold short). If the Fund enters into a short sale against the box, the Fund would segregate an equivalent amount of securities owned as collateral while the short sale is outstanding. During the nine months ended August 31, 2013, the Fund did not engage in any short sales.

G. Derivative Financial Instruments The Fund may utilize derivative financial instruments in its operations.

Interest rate swap contracts. The Fund may use hedging techniques such as interest rate swaps to mitigate potential interest rate risk on a portion of the Fund's leverage. Such interest rate swaps would principally be used to protect the Fund against higher costs on its leverage resulting from increases in interest rates. The Fund does not hedge any interest rate risk associated with portfolio holdings. Interest rate transactions the Fund 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 Fund. In addition, if the counterparty to an interest rate swap defaults, the Fund 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 or termination payments are recorded as realized gains or losses in the Statement of Operations. The Fund 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 Fund is also exposed to financial market risks including changes in the valuations of its investment portfolio. The Fund 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 Fund would 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 Fund would realize either no gain or a loss on the purchased call option. The Fund 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 Fund.

The Fund may also write (sell) call options with the purpose of generating realized gains or reducing its ownership of certain securities. If the Fund writes a call option on a security, the Fund has the obligation upon exercise of the option to deliver the underlying security upon payment of the exercise price. The Fund will only write call options on securities that the Fund holds in its portfolio (*i.e.*, covered calls).

When the Fund writes a call option, an amount equal to the premium received by the Fund 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 Fund on the expiration date as realized gains from investments. If the Fund 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 Fund has realized a gain or loss. The Fund, 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.

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H. *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.

I. *Return of Capital Estimates* Dividends and distributions received from the Fund's investments are comprised of income and return of capital. The payments made by MLPs are categorized as distributions and payments made by corporations are categorized as dividends. At the time such dividends and distributions are received, the Fund estimates the amount of such payments that is considered investment income and the amount that is considered a return of capital. The Fund estimates that 90% of the MLP distributions received will be treated as a return of capital. Such estimates for MLPs and other investments are based on historical information available from each investment and other industry sources. These estimates may subsequently be revised based on information received from investments after their tax reporting periods are concluded.

The following table sets forth (i) the components of total dividends and distributions, (ii) the percentage of return of capital attributable to each category and (iii) the estimated total return of capital portion of the dividends and distributions received that are attributable to net realized gains (losses) and net change in unrealized gains (losses). The return of capital portion of the dividends and distributions received is a reduction to investment income, results in an equivalent reduction in the cost basis of the associated investments, and increases net realized gains (losses) and net change in unrealized gains (losses). In accordance with GAAP, the return of capital cost basis reductions for the Fund's MLP investments are limited to the total amount of the cash distributions received from such investments. For income tax purposes, the cost basis reductions for the Fund's MLP investments typically exceed cash distributions received from such investments due to allocated losses from these investments.

| | Three Months Ended August 31, 2013 | Nine Months Ended August 31, 2013 |
|---|---|--|
| Dividends from investments | \$ 5,521 | \$ 16,276 |
| Distributions from investments | 4,182 | 12,276 |
| Total dividends and distributions from investments (before foreign taxes withheld of \$74 and \$193, respectively) | \$ 9,703 | \$ 28,552 |
| Dividends % return of capital | 28% | 27% |
| Distributions % return of capital | 90% | 88% |
| Total dividends and distributions % return of capital | 55% | 53% |
| Return of capital attributable to net realized gains (losses) | \$ 2,881 | \$ 5,576 |
| Return of capital attributable to net change in unrealized gains (losses) | 2,430 | 9,694 |
| Total return of capital | \$ 5,311 | \$ 15,270 |

J. *Investment Income* The Fund 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 Fund 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. During the nine months ended August 31, 2013, the Fund did not have a reserve against interest income, since all interest income accrued is expected to be received.

Many of the debt securities that the Fund holds 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

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amortization of a premium to par value decreases interest income. The accretion of a discount and amortization of a premium are based on the effective interest method. The amount of these non-cash adjustments can be found in the Fund'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 Fund discontinues accruing the non-cash accretion of the discount to par value of the debt security.

The Fund receives paid-in-kind and non-cash dividends and distributions in the form of additional units or shares from the investments listed in the table below. For paid-in-kind dividends/distributions, the additional units are not reflected in investment income during the period received but are recorded as unrealized gains upon receipt. Non-cash dividends/distributions are reflected in investment income because the Fund has the option to receive its dividend in cash or in additional shares/units of the security. The Fund estimates return of capital on these non-cash dividends/distributions. During the three and nine months ended August 31, 2013, the Fund received the following paid-in-kind and non-cash dividends and distributions.

| | Three Months Ended August 31, 2013 | Nine Months Ended August 31, 2013 |
|--|---|--|
| <u>Paid-in-kind dividends/distributions</u> | | |
| Buckeye Partners, L.P. (Class B Units) ⁽¹⁾ | \$ 342 | \$ 994 |
| Crestwood Midstream Partners LP (Class C Units) ⁽²⁾ | | 94 |
| Enbridge Energy Management, L.L.C. | 1,177 | 2,885 |
| Kinder Morgan Management, LLC | 1,211 | 3,641 |
| | 2,730 | 7,614 |
| <u>Non-cash dividends/distributions</u> | | |
| Energy Transfer Partners, L.P. | 151 | 151 |
| Enterprise Products Partners L.P. | 216 | 216 |
| Pembina Pipeline Corporation | 116 | 166 |
| | 483 | 533 |
| Total paid-in-kind and non-cash dividends/distributions | \$ 3,213 | \$ 8,147 |

(1) Converted into common units on September 1, 2013.

(2) Converted into common units on April 1, 2013.

K. 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 Financial Accounting Standards Board (FASB) Accounting Standards Codification, the Fund includes the accrued distributions on its mandatory redeemable preferred stock as an operating expense due to the fixed term of this obligation. For tax purposes the payments made to the holders of the Fund's mandatory redeemable preferred stock are treated as dividends or distributions.

The estimated characterization of the distributions paid to preferred and common stockholders will be either a dividend (ordinary income) or distribution (long-term capital gains or return of capital). This estimate is based on the Fund's operating results during the period. The actual characterization of the stock distributions made during the current year will not be determinable until after the end of the fiscal year when the Fund can determine earnings and profits and, therefore, the characterization may differ from the preliminary estimates.

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L. Partnership Accounting Policy The Fund 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 Fund's Statement of Operations.

M. Taxes It is the Fund's intention to continue to be treated as and to qualify each year for special tax treatment afforded a regulated investment company (RIC) under Subchapter M of the Internal Revenue Code of 1986, as amended. As long as the Fund meets certain requirements that govern its source of income, diversification of assets and timely distribution of earnings to stockholders, the Fund will not be subject to U.S. federal income tax. See Note 4 Taxes.

All RICs are subject to a non-deductible 4% excise tax on income that is not distributed on a timely basis in accordance with the calendar year distribution requirements. To avoid the tax, the Fund must distribute during each calendar year an amount at least equal to the sum of (i) 98% of its ordinary income for the calendar year, (ii) 98.2% of its net capital gains for the one-year period ending on November 30, the last day of our taxable year, and (iii) undistributed amounts from previous years on which the Fund paid no U.S. federal income tax. A distribution will be treated as paid during the calendar year if it is paid during the calendar year or declared by the Fund in October, November or December of the year, payable to stockholders of record on a date during such a month and paid by the Fund during January of the following year. Any such distributions paid during January of the following year will be deemed to be received by stockholders on December 31 of the year the distributions are declared, rather than when the distributions are actually received.

While the Fund intends to distribute income and capital gains in the manner to minimize imposition of the 4% excise tax, there can be no assurance that sufficient amounts of its taxable income and capital gain will be distributed to avoid entirely the imposition of the tax. In that event, the Fund will be liable for the tax on the amount by which it does not meet the distribution requirement and will accrue an excise tax liability at the time that the liability is estimable and probable. See Note 4 Taxes.

Dividend income received by the Fund from sources within Canada is subject to a 15% foreign withholding tax. Interest income on Canadian corporate obligations may be subject to a 10% withholding tax unless an exemption is met. The most common exemption available is for corporate bonds that have a tenor of at least 5 years, provided that not more than 25% of the principal is repayable in the first 5 years and provided that the borrower and lender are not associated. Further, interest is exempt if derived from debt obligations guaranteed by the Canadian government.

The Accounting for Uncertainty in Income Taxes Topic of the FASB Accounting Standards Codification defines the threshold for recognizing the benefits of tax-return positions in the financial statements as more-likely-than-not to be sustained by the taxing authority and requires measurement of a tax position meeting the more-likely-than-not criterion, based on the largest benefit that is more than 50% likely to be realized.

The Fund'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. For the three and nine months ended August 31, 2013, the Fund did 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.

N. Foreign Currency Translations The books and records of the Fund are maintained in U.S. dollars. Foreign currency amounts are translated into U.S. dollars on the following basis: (i) market value of investment securities, assets and liabilities at the rate of exchange as of the valuation date; and (ii) purchases and sales of investment securities, income and expenses at the relevant rates of exchange prevailing on the respective dates of such transactions.

The Fund does not isolate that portion of gains and losses on investments in equity and debt securities which is due to changes in the foreign exchange rates from that which is due to changes in market prices of equity and

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debt securities. Accordingly, realized and unrealized foreign currency gains and losses with respect to such securities are included in the reported net realized and unrealized gains and losses on investment transactions balances.

Net realized foreign exchange gains or losses represent gains and losses from transactions in foreign currencies and foreign currency contracts, foreign exchange gains or losses realized between the trade date and settlement date on security transactions, and the difference between the amounts of interest and dividends recorded on the Fund's books and the U.S. dollar equivalent of such amounts on the payment date.

Net unrealized foreign exchange gains or losses represent the difference between the cost of assets and liabilities (other than investments) recorded on the Fund's books from the value of the assets and liabilities (other than investments) on the valuation date.

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

3. Fair Value

The Fair Value Measurement Topic of the FASB Accounting Standards Codification (ASC 820) defines fair value as the price at which an orderly transaction to sell an asset or to transfer a liability would take place between market participants under current market conditions at the measurement date. As required by ASC 820, the Fund 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. Inputs are the assumptions, along with considerations of risk, that a market participant would use to value an asset or a liability. In general, observable inputs are based on market data that is readily available, regularly distributed and verifiable that the Fund obtains from independent, third-party sources. Unobservable inputs are developed by the Fund based on its own assumptions of how market participants would value an asset or a liability.

Accounting Standards Update (ASU) No. 2011-04 Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs amends ASC 820. The amended guidance clarifies the wording used to describe many requirements in accounting literature for fair value measurement and disclosure to establish consistency between U.S. GAAP and International Financial Reporting Standards (IFRSs).

ASU No. 2011-04 requires the inclusion of additional disclosures on assumptions used by the Fund to determine fair value. Specifically, for assets measured at fair value using significant unobservable inputs (Level 3), ASU No. 2011-04 requires that the Fund (i) describe the valuation process, (ii) disclose quantitative information about unobservable inputs and (iii) provide a qualitative discussion about the sensitivity of the fair value measurement to changes in the unobservable inputs and inter-relationships between the inputs.

The fair value hierarchy prioritizes the inputs to valuation techniques used to measure fair value into the following three broad categories.

Level 1 Valuations based on quoted unadjusted prices for identical instruments in active markets traded on a national exchange to which the Fund has access at the date of measurement.

Level 2 Valuations based on 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

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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 Fund'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 Fund's assets and liabilities measured at fair value on a recurring basis at August 31, 2013, and the Fund presents these assets by security type and description on its Schedule of Investments or on its Statement of Assets and Liabilities. Note that the valuation levels below are not necessarily an indication of the risk or liquidity associated with the underlying investment.

| | Total | Quoted Prices in Active Markets (Level 1) | Prices with Other Observable Inputs (Level 2) | Unobservable Inputs (Level 3) |
|----------------------------------|--------------|--|---|-------------------------------------|
| Assets at Fair Value | | | | |
| Equity investments | \$ 944,813 | \$ 885,055 | \$ | \$ 59,758 |
| Debt investments | 133,950 | | 133,950 | |
| Total assets at fair value | \$ 1,078,763 | \$ 885,055 | \$ 133,950 | \$ 59,758 |
| Liabilities at Fair Value | | | | |
| Call option contracts written | \$ 1,315 | \$ | \$ 1,315 | \$ |

For the three and nine months ended August 31, 2013, there were no transfers between Level 1 and Level 2.

As of August 31, 2013, the Fund had senior unsecured notes (Senior Notes) outstanding with aggregate principal amount of \$205,000 and 2,600,000 shares of mandatory redeemable preferred stock outstanding with a total liquidation value of \$65,000. The Senior Notes and mandatory redeemable preferred were issued in private placements to institutional investors and are not listed on any exchange or automated quotation system. See Note 11 Senior Unsecured Notes and Note 12 Preferred Stock. As a result, the Fund categorizes the Senior Notes and mandatory redeemable preferred stock as Level 3 and determines the fair value of these instruments based on estimated market yields and credit spreads for comparable instruments with similar maturity, terms and structure.

The Fund records these instruments on its Statement of Assets and Liabilities at principal amount or liquidation value. As of August 31, 2013, the estimated fair values of these leverage instruments are as follows.

| Instrument | Principal Amount/ Liquidation Value | Fair Value |
|--------------------------------------|---|---------------|
| Senior Notes | \$ 205,000 | \$ 212,300 |
| Mandatory redeemable preferred stock | \$ 65,000 | \$ 67,500 |

The following tables present the Fund's assets measured at fair value on a recurring basis using significant unobservable inputs (Level 3) for the three and nine months ended August 31, 2013.

| Three Months Ended August 31, 2013 | | Equity Investments |
|---|-----------------|-------------------------------|
| Balance | May 31, 2013 | \$ 49,402 |
| Purchases | | |
| Issuances | | 342 |
| Transfers out | | |
| Relized gains (losses) | | |
| Unrealized gains, net | | 10,014 |
| Balance | August 31, 2013 | \$ 59,758 |

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| Nine Months Ended August 31, 2013 | | Equity Investments |
|--|-------------------|-------------------------------|
| Balance | November 30, 2012 | \$ 34,937 |
| Purchases | | 9,000 |
| Issuances | | 1,088 |
| Transfers out | | (8,291) |
| Realized gains (losses) | | |
| Unrealized gains, net | | 23,024 |
| Balance | August 31, 2013 | \$ 59,758 |

The \$10,014 and \$23,024 of unrealized gains presented in the tables above for the three and nine months ended August 31, 2013 relate to investments that were still held at August 31, 2013, and the Fund includes these unrealized gains on the Statement of Operations Net Change in Unrealized Gains (Losses).

The purchases of \$9,000 for the nine months ended August 31, 2013 relate to the Fund's investment in Capital Products Partners L.P. (Class B Units) and Inergy Midstream, L.P. (Common Units). The issuances of \$342 and \$1,088 for the three and nine months ended August 31, 2013 relate to additional units received from Buckeye Partners, L.P. (Class B Units) and Crestwood Midstream Partners LP (Class C Units). The transfers out of \$8,291 for the nine months ended August 31, 2013 relate to the Fund's investments in Crestwood Midstream Partners LP, Class C Units and Inergy Midstream, L.P., common units that became marketable during the fiscal second quarter of 2013.

Valuation Techniques and Unobservable Inputs

Unless otherwise determined by the Board of Directors, the Fund values its private investments in public equity (PIPE) investments that are convertible into or otherwise will become publicly-tradeable (e.g., through subsequent registration or expiration of a restriction on trading) based on the market value of the publicly-traded security less a discount. The discount is initially equal to the discount negotiated at the time the Fund agrees to a purchase price. To the extent that such securities are convertible or otherwise become publicly traded within a time frame that may be reasonably determined, this discount will be amortized on a straight line basis over such estimated time frame.

One of the Fund's private investments is Class B Units of Capital Product Partners L.P. (CPLP). The Class B Units are convertible units (convertible on a one-for-one basis into common units) and are senior to CPLP's common units in terms of liquidation preference and priority of distributions. The Fund's Board of Directors has determined that it is appropriate to value the Class B Units using a convertible pricing model, which takes into account the unit's preference relative to the common units as well as its conversion features. This model takes into account the attributes of the Class B Units (preferred dividend, conversion ratio and call features) to determine the estimated value of such units. In using this model, the Fund estimates (i) the credit spread for CPLP's Class B Units, which is based on credit spreads for companies in a similar line of business as CPLP and (ii) the expected volatility for CPLP's common units, which is based on CPLP's historical volatility as well as historical volatility for publicly-traded companies in a similar line of business as CPLP. The Fund applies a discount to the value derived from the convertible pricing model to account for an expected discount in market prices for convertible securities relative to the values calculated using pricing models.

The Fund's investments in private companies are typically valued using one of or a combination of the following valuation techniques: (i) analysis of valuations for publicly traded companies in a similar line of business (public company analysis), (ii) analysis of valuations for comparable M&A transactions (M&A analysis) and (iii) discounted cash flow analysis. The table entitled Quantitative Table for Valuation Techniques outlines the valuation technique(s) used for each asset category.

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The public company analysis utilizes valuation ratios for publicly-traded companies in a similar line of business as the portfolio company to estimate the fair value of such portfolio company. The Fund typically focuses on the following valuation ratios: (a) distribution yields (yield analysis), which is calculated by dividing the company's annual distribution by its stock price and (b) trading multiples (trading multiple analysis), which is the ratio of certain measures of cash flow to the company's enterprise value and equity value (as described below in more detail). To determine its recommended valuation for Plains All American GP LLC (Plains GP LLC), the public company analysis uses a probability weighting between the yield analysis and trading multiple analysis based on its assessment of how Plains GP LLC will be valued in its pending IPO. See Note 14 Subsequent Events.

For both the yield analysis and the trading multiple analysis, the Fund utilizes projections provided by external sources (*i.e.*, third party equity research estimates) as well as internally developed estimates, and the Fund focuses on EBITDA, DCF and distribution projections for the current calendar year and next calendar year. Based on this data, the Fund selects a range of yields given the yields of similar publicly-traded companies and applies such yields to the portfolio company's projected distributions to estimate the portfolio company's equity value. For the trading multiple analysis, the Fund focuses on the ratio of enterprise value (EV) to earnings before interest expense, income tax expense, depreciation and amortization (EBITDA), which is referred to as an EV/EBITDA multiple and the ratio of equity market value (EMV) to distributable cash flow (DCF), which is referred to as a EMV/DCF multiple. The Fund selects a range of EV/EBITDA and EMV/DCF multiples given the trading multiples of similar publicly-traded companies and applies such multiples to the portfolio company's projected EBITDA and DCF to estimate the portfolio company's enterprise value and equity value. When calculating these values, the Fund applies a discount to the portfolio company's estimated equity value for the size of the company and the lack of marketability in the portfolio company's securities.

The M&A analysis utilizes valuation multiples for historical M&A transactions for companies or assets in a similar line of business as the portfolio company to estimate the fair value of such portfolio company. Typically, the Fund's analysis focuses on EV/EBITDA multiples. The Fund selects a range of multiples based on EV/EBITDA multiples for similar M&A transactions and applies such ranges to the portfolio company's EBITDA to estimate the portfolio company's enterprise value. The Fund utilizes projections provided by external sources as well as internally developed estimates to calculate the valuation multiples of the comparable M&A transactions.

The discounted cash flow analysis is used to estimate the equity value for the portfolio company based on estimated cash flows of such portfolio company. Such cash flows include a terminal value for the portfolio company, which is typically based on an EV/EBITDA multiple. A present value of these cash flows is determined by using estimated discount rates (required equity rate of return).

Under these valuation techniques, the Fund estimates operating results of its portfolio companies (including EBITDA, DCF and distributions). These estimates utilize unobservable inputs such as historical operating results, which may be unaudited, and projected operating results, which will be based on operating assumptions for such portfolio company. These estimates will be sensitive to changes in assumptions specific to such portfolio company as well as general assumptions for the industry. Other unobservable inputs utilized in the valuation techniques outlined above include: discounts for lack of marketability, selection of publicly-traded companies, selection of similar M&A transactions, selected ranges for valuation multiples and expected required rates of return (discount rates).

Changes in EBITDA multiples, DCF multiples, or discount rates, each in isolation, may change the fair value of the Fund's portfolio investments. Generally, a decrease in EBITDA multiples or DCF multiples, or an increase in discount rates will result in a decrease in the fair value of the Fund's portfolio investments.

Due to the inherent uncertainty of determining the fair value of investments that do not have a readily available market value, the fair value of the Fund's investments may fluctuate from period to period.

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Additionally, the fair value of the Fund's investments may differ from the values that would have been used had a ready market existed for such investments and may differ materially from the values that the Fund may ultimately realize.

The following table summarizes the significant unobservable inputs that the Fund uses to value its portfolio investments categorized as Level 3 as of August 31, 2013:

Quantitative Table for Valuation Techniques

| Assets at Fair Value | Fair Value | Valuation Technique | Unobservable Inputs | Range | | Average |
|--|------------|--|---|-------------------------------|-------------------------------|-------------------------------|
| | | | | Low | High | |
| Equity securities of public companies (PIPE) valued based on a discount to market value ⁽¹⁾ | \$ 22,949 | - Discount to publicly-traded securities | - Current discount - Remaining restricted period | % 1 day | % 1 day | % 1 day |
| Equity securities of public companies not valued based on a discount to market value | 5,752 | - Convertible pricing model | - Credit spread - Volatility | 6.5% 27.5% | 7.5% 32.5% | 7.0% 30.0% |
| Equity securities of private companies common units / common equity | 31,057 | - Public company analysis Yield analysis Trading multiple analysis | - Expected IPO yield - Discount for marketability - EV / 2014E EBITDA - Discount for marketability | 3.0% 7.5% 21.0x 7.5% | 3.5% 7.5% 24.0x 7.5% | 3.3% 7.5% 22.5x 7.5% |
| | | - M&A analysis | - Selected EV / EBITDA multiples | 22.0x | 24.0x | 23.0x |
| | | - Discounted cash flow | - Equity rate of return | 15.0% | 17.5% | 16.3% |
| Total | \$ 59,758 | | | | | |

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- (1) The Fund's investment in the Buckeye Partners, L.P. Class B Units converted into common units on September 1, 2013. As of August 31, 2013, the Fund valued the Class B Units at the same price as the common units.

4. Taxes

Income and capital gain distributions made by RICs often differ from GAAP basis net investment income (loss) and any net realized gains (losses). For the Fund, the principal reason for these differences is the return of capital treatment of dividends and distributions from MLPs and certain other of its investments. Net investment income and net realized gains for GAAP purposes may differ from taxable income for federal income tax purposes due to wash sales, disallowed partnership losses from MLPs and foreign currency transactions.

As of August 31, 2013, the principal temporary differences were (a) realized losses that were recognized for book purposes, but disallowed for tax purposes due to wash sale rules; (b) disallowed partnership losses related to the Fund's MLP investments; and (c) other basis adjustments in the Fund's MLPs and other investments. For purposes of characterizing the nature of the dividends/distributions to investors, the amounts in excess of the Fund's earnings and profits for federal income tax purposes are treated as a return of capital. Earnings and profits differ from taxable income due principally to adjustments related to the Fund's investments in MLPs.

For the fiscal year ended November 30, 2012, the tax character of the total \$37,172 distributions paid to common stockholders was \$28,368 of dividend income and \$8,804 of long-term capital gains, and the tax character of the total \$2,803 distributions paid to mandatory redeemable preferred stock was \$2,139 of dividend income and \$664 of long-term capital gains.

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The Fund is subject to a non-deductible 4% excise tax on income that is not distributed on a timely basis in accordance with the calendar year distribution requirements. See Note 2 Taxes.

For the calendar year ended December 31, 2012, the Fund had \$9,901 of undistributed income for excise tax purposes. On December 18, 2012, the Board of Directors decided not to pay the Fund's undistributed income during the 2012 calendar year based on the expectation that the income will be distributed to stockholders during the 2013 calendar year. As a result, during the nine months ended August 31, 2013, the Fund paid estimated excise taxes of \$410.

Under the Regulated Investment Company Modernization Act of 2010, any net capital losses recognized after December 31, 2010 may be carried forward indefinitely, and their character is retained as short-term and/or long-term losses.

At August 31, 2013, the cost basis of investments for federal income tax purposes was \$873,032, and the net cash received on option contracts written was \$1,618. At August 31, 2013, gross unrealized appreciation and depreciation of investments and options for federal income tax purposes were as follows:

| | |
|---|------------|
| Gross unrealized appreciation of investments (including options) | \$ 216,880 |
| Gross unrealized depreciation of investments (including options) | (10,845) |
| Net unrealized appreciation of investments before foreign currency related translations | 206,035 |
| Unrealized depreciation on foreign currency related translations | (5) |
| Net unrealized appreciation of investments | \$ 206,030 |

5. Concentration of Risk

The Fund's investments are concentrated in the energy sector. The focus of the Fund's portfolio within the energy sector may present more risks than if the Fund's portfolio were broadly diversified across numerous sectors of the economy. A downturn in the energy sector would have a larger impact on the Fund than on an investment company that does not concentrate in energy. The performance of securities in the energy sector may lag the performance of other industries or the broader market as a whole. Additionally, to the extent that the Fund invests a relatively high percentage of its assets in the securities of a limited number of issuers, the Fund may be more susceptible than a more widely diversified investment company to any single economic, political or regulatory occurrence. At August 31, 2013, the Fund had the following investment concentrations.

| Category | Percent of Total Assets |
|--------------------------------|-------------------------------|
| Securities of energy companies | 98.7% |
| Equity securities | 86.8% |
| Debt securities | 12.3% |
| MLP securities | 24.3% |
| Largest single issuer | 8.4% |

Restricted securities

12.5%

6. Agreements and Affiliations

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

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

B. Investment Management Agreement The Fund has entered into an investment management agreement with KAFA under which KAFA, subject to the overall supervision of the Fund's Board of Directors, manages the day-to-day operations of, and provides investment advisory services to, the Fund. For providing these services, KAFA receives a management fee from the Fund. On September 25, 2013, the Fund renewed its agreement with KAFA for a period of one year, which expires on October 19, 2014. The agreement may be renewed annually upon the approval of the Fund's Board of Directors (including a majority of the Fund's directors who are not interested persons of the Fund, as such term is defined in the 1940 Act). For the nine months ended August 31, 2013, the Fund paid management fees at an annual rate of 1.25% of the average monthly total assets of the Fund.

For purposes of calculating the management fee, the average total assets for each monthly period are determined by averaging the total assets at the last business day of that month with the total assets at the last business day of the prior month. The total assets of the Fund shall be equal to its average monthly gross asset value (which includes assets attributable to or proceeds from the Fund's use of debt and preferred stock, minus the sum of the Fund's accrued and unpaid dividends and distributions on any outstanding common stock and accrued and unpaid dividends and distributions on any outstanding preferred stock and accrued liabilities (other than liabilities associated with borrowing or leverage by the Fund). Liabilities associated with borrowing or leverage include the principal amount of any debt issued by the Fund, 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 Fund.

C. Portfolio Companies From time to time, the Fund may control or may be an affiliate of one or more of its portfolio companies, as each of these terms is defined in the 1940 Act. In general, under the 1940 Act, the Fund would be presumed to control a portfolio company if the Fund and its affiliates owned 25% or more of its outstanding voting securities and would be an affiliate of a portfolio company if the Fund and its affiliates 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 Fund's investment adviser), principal underwriters and affiliates of those affiliates or underwriters.

The Fund believes that there are several factors that determine whether or not a security should be considered a voting security in complex structures such as limited partnerships of the kind in which the Fund invests. The Fund also notes that the Securities and Exchange Commission (the SEC) staff has issued guidance on the circumstances under which it would consider a limited partnership interest to constitute a voting security. Under most partnership agreements, the management of the partnership is vested in the general partner, and the limited partners, individually or collectively, have no rights to manage or influence management of the partnership through such activities as participating in the selection of the managers or the board of the limited partnership or the general partner. As a result, the Fund believes that many of the limited partnership interests in which it invests should not be considered voting securities. However, it is possible that the SEC staff may consider the limited partner interests the Fund holds in certain limited partnerships to be voting securities. If such a determination were made, the Fund 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 making such a determination as to whether to treat any class of limited partnership interests the Fund holds as a voting security, the Fund considers, among other factors, whether or not the holders of such limited partnership interests have the right to elect the board of directors of the limited partnership or the general partner. If the holders of such limited partnership interests do not have the right to elect the board of directors, the Fund generally has not treated such security as a voting security. In other circumstances, based on the facts and circumstances of those partnership agreements, including the right to elect the directors of the general partner, the Fund has treated those securities as voting securities and, therefore, as affiliates. If the Fund does not consider the security to be a voting security, it will not consider such partnership to be an affiliate unless the Fund and its affiliates own more than 25% of the outstanding securities of such partnership.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

There is no assurance that the SEC staff will not consider that other limited partnership securities that the Fund owns and does not treat as voting securities are, in fact, voting securities for the purposes of Section 17 of the 1940 Act. If such determination were made, the Fund will be required to abide by the restrictions on control or affiliate transactions as proscribed in the 1940 Act. The Fund or any portfolio company that it controls, and its affiliates, may from time to time engage in certain of such joint transactions, purchases, sales and loans in reliance upon and in compliance with the conditions of certain exemptive rules promulgated by the SEC. The Fund cannot make assurances, however, that it would be able to satisfy the conditions of these rules with respect to any particular eligible transaction, or even if the Fund were allowed to engage in such a transaction, that the terms would be more or as favorable to the Fund or any company that it controls as those that could be obtained in arm's length transaction. As a result of these prohibitions, restrictions may be imposed on the size of positions that may be taken for the Fund or on the type of investments that it could make.

As of August 31, 2013, the Fund believes that MarkWest Energy Partners, L.P. and PVR Partners, L.P. meet the criteria described above and are therefore considered affiliates of the Fund.

Emerge Energy Services LP Kevin S. McCarthy is Chairman of the Board of Directors and President and Chief Executive Officer of the Fund. Mr. McCarthy also serves as a director on the board of Emerge Energy Services GP LLC (Emerge GP) the general partner of Emerge Energy Services LP (Emerge). Various affiliated funds managed by KAFA, including the Fund, own units of Emerge. The Fund believes that it is an affiliate of Emerge under the 1940 Act by virtue of Mr. McCarthy's participation on the board of Emerge GP.

Plains All American GP LLC and Plains All American Pipeline, 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 (Plains GP LLC), the general partner of Plains All American Pipeline, L.P. (PAA). Members of senior management of KACALP and KAFA and various affiliated funds managed by KACALP, including the Fund, own units of Plains GP LLC. The Fund believes that it is an affiliate of Plains GP LLC and PAA under the 1940 Act by virtue of (i) the Fund's and other affiliated Kayne Anderson funds' ownership interests in Plains GP LLC and (ii) Mr. Sinnott's participation on the board of Plains GP LLC.

7. Restricted Securities

From time to time, certain of the Fund'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 Fund's investments have restrictions such as lock-up agreements that preclude the Fund from offering these securities for public sale.

At August 31, 2013, the Fund held the following restricted investments:

| Investment | Acquisition Date | Type of Restriction | Number of Units, Principal (\$) (in 000s) | Cost Basis | Fair Value | Fair Value Per Unit | Percent of Net Assets | Percent of Total Assets |
|---|------------------|---------------------|---|------------|------------|---------------------|-----------------------|-------------------------|
| Level 3 Investments⁽¹⁾ | | | | | | | | |
| Buckeye Partners, L.P. | | | | | | | | |
| Class B Units | (2) | (3) | 328 | \$ 15,000 | \$ 22,949 | \$ 70.00 | 3.0% | 2.1% |
| Capital Products Partners L.P. | | | | | | | | |
| Class B Units | (2) | (3) | 606 | 4,654 | 5,752 | 9.49 | 0.8 | 0.5 |
| Plains All American GP LLC ⁽⁴⁾ | | | | | | | | |
| Common Units | (2) | (5) | 7 | 8,251 | 31,057 | 4,457 | 4.1 | 2.9 |

| | | | | |
|-------|-----------|-----------|------|------|
| Total | \$ 27,905 | \$ 59,758 | 7.9% | 5.5% |
|-------|-----------|-----------|------|------|

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

| Investment | Acquisition Date | Type of Restriction | Number of Units, Principal (\$) (in 000s) | Cost Basis | Fair Value | Fair Value Per Unit | Percent of Net Assets | Percent of Total Assets |
|--|------------------|---------------------|--|------------|------------|---------------------|-----------------------|-------------------------|
| Level 2 Investments⁽⁶⁾ | | | | | | | | |
| Senior Notes and Secured Term Loans | | | | | | | | |
| Athlon Energy Inc. | (2) | (3) | \$ 5,600 | \$ 5,658 | \$ 5,684 | n/a | 0.7% | 0.5% |
| Aurora Oil & Gas Limited | (2) | (3) | 9,600 | 9,697 | 9,504 | n/a | 1.3 | 0.9 |
| BlackBrush Oil & Gas, L.P. | (2) | (5) | 8,688 | 8,648 | 8,819 | n/a | 1.2 | 0.8 |
| CrownRock, L.P. | (2) | (5) | 4,500 | 4,500 | 4,477 | n/a | 0.6 | 0.4 |
| Midstates Petroleum Company, Inc. | (2) | (3) | 3,850 | 4,044 | 3,908 | n/a | 0.5 | 0.3 |
| Midstates Petroleum Company, Inc. | (2) | (3) | 7,800 | 7,800 | 7,449 | n/a | 1.0 | 0.7 |
| Rex Energy Corporation | (2) | (3) | 11,000 | 11,029 | 11,440 | n/a | 1.5 | 1.1 |
| Rice Drilling B LLC | (2) | (5) | 5,591 | 5,526 | 5,479 | n/a | 0.7 | 0.5 |
| RKI Exploration & Production, LLC | 7/15/13 | (5) | 7,500 | 7,500 | 7,500 | n/a | 1.0 | 0.7 |
| Sanchez Energy Corporation | (2) | (3) | 7,750 | 7,750 | 7,634 | n/a | 1.0 | 0.7 |
| SemGroup Corporation | 6/7/13 | (3) | 4,000 | 4,000 | 4,090 | n/a | 0.5 | 0.4 |
| Total | | | | \$ 76,152 | \$ 75,984 | | 10.0% | 7.0% |
| Total of all restricted securities | | | | \$ 104,057 | \$ 135,742 | | 17.9% | 12.5% |

- (1) Securities are valued using inputs reflecting the Fund's own assumptions as more fully described in Note 2 – Significant Accounting Policies and Note 3 – Fair Value.
- (2) Security was acquired at various dates during the nine months ended August 31, 2013 and/or in prior fiscal years.
- (3) Unregistered or restricted security of a publicly-traded company.
- (4) In determining the fair value for Plains GP LLC, the Fund's valuation is based on publicly available information. Robert V. Sinnott, the CEO of KACALP, is a member of Plains GP LLC's board of directors (see Note 6 – Agreements and Affiliations). Certain private investment funds managed by KACALP may value its investment in Plains GP LLC based on non-public information, and, as a result, such valuation may be different than the Fund's valuation.
- (5) Unregistered security of a private company.
- (6) These securities have a fair market value determined by the mean of the bid and ask prices provided by an agent or 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.

8. Derivative Financial Instruments

As required by the Derivatives and Hedging Topic of the FASB Accounting Standards Codification, the following are the derivative instruments and hedging activities of the Fund. The total number of outstanding options at August 31, 2013 is indicative of the volume of this type of option activity during the period. See Note 2 Significant Accounting Policies.

Option Contracts Transactions in option contracts for the three and nine months ended August 31, 2013 were as follows:

| Three Months Ended August 31, 2013 | Number of Contracts | Premium |
|---|--------------------------------|----------------|
| Put Options Purchased | | |
| Options outstanding at May 31, 2013 | | \$ |
| Options purchased | 60 | 1 |
| Options exercised | (60) | (1) |
| Options outstanding at August 31, 2013 | | \$ |

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

| Three Months Ended August 31, 2013 | Number of Contracts | Premium |
|---|------------------------|----------|
| Call Options Written | | |
| Options outstanding at May 31, 2013 | 20,418 | \$ 2,007 |
| Options written | 26,860 | 2,498 |
| Options subsequently repurchased ⁽¹⁾ | (13,009) | (1,392) |
| Options exercised | (6,934) | (656) |
| Options expired | (10,690) | (839) |
| Options outstanding at August 31, 2013 ⁽²⁾ | 16,645 | \$ 1,618 |

(1) The price at which the Fund subsequently repurchased the options was \$476, which resulted in net realized gains of \$916.

(2) The percentage of total investments subject to call options written was 7.3% at August 31, 2013.

| Nine Months Ended August 31, 2013 | Number of Contracts | Premium |
|---|------------------------|----------|
| Put Options Purchased | | |
| Options outstanding at November 30, 2012 | | \$ |
| Options purchased | 60 | 1 |
| Options exercised | (60) | (1) |
| Options outstanding at August 31, 2013 | | \$ |
| Call Options Written | | |
| Options outstanding at November 30, 2012 | 25,165 | \$ 2,248 |
| Options written | 82,405 | 7,997 |
| Options subsequently repurchased ⁽¹⁾ | (39,349) | (3,676) |
| Options exercised | (33,952) | (3,525) |
| Options expired | (17,624) | (1,426) |
| Options outstanding at August 31, 2013 | 16,645 | \$ 1,618 |

(1) The price at which the Fund subsequently repurchased the options was \$1,617, which resulted in net realized gains of \$2,059.

Interest Rate Swap Contracts The Fund may enter into interest rate swap contracts to partially hedge itself from increasing expense on its leverage resulting from increasing interest rates. At the time the interest rate swap contracts reach their scheduled termination, there is a risk that the Fund 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 Fund is required to terminate any swap contract early, then the Fund could be required to make a termination payment. As of August 31, 2013, the Fund did not have any interest rate swap contracts outstanding.

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During the fiscal second quarter of 2013, the Fund entered into an interest rate swap contract (\$40,000 notional amount) in anticipation of a private placement of Senior Notes. On April 17, 2013, the interest rate swap contract was terminated in conjunction with the pricing of the private placement, and resulted in a \$385 realized loss.

The following table sets forth the fair value of the Fund's derivative instruments on the Statement of Assets and Liabilities:

| Derivatives Not Accounted for as Hedging Instruments | Statement of Assets and Liabilities Location | Fair Value as of August 31, 2013 |
|---|---|---|
| Call options | Call option contracts written | \$ (1,315) |

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

The following tables set forth the effect of the Fund's derivative instruments on the Statement of Operations:

| Derivatives Not Accounted for as Hedging Instruments | Location of Gains/(Losses) on Derivatives Recognized in Income | For the Three Months Ended August 31, 2013 | |
|---|---|--|--|
| | | Net Realized Gains/(Losses) on Derivatives Recognized in Income | Change in Unrealized Gains/(Losses) on Derivatives Recognized in Income |
| Call options | Options | \$ 1,760 | \$ (260) |

| Derivatives Not Accounted for as Hedging Instruments | Location of Gains/(Losses) on Derivatives Recognized in Income | For the Nine Months Ended August 31, 2013 | |
|---|---|--|--|
| | | Net Realized Gains/(Losses) on Derivatives Recognized in Income | Change in Unrealized Gains/(Losses) on Derivatives Recognized in Income |
| Call options | Options | \$ 3,490 | \$ 858 |
| Interest rate swap contract | Interest rate swap contract | (385) | |
| | | \$ 3,105 | \$ 858 |

9. Investment Transactions

For the nine months ended August 31, 2013, the Fund purchased and sold securities in the amounts of \$433,089 and \$392,524 (excluding short-term investments and options).

10. Credit Facility

At August 31, 2013, the Fund had a \$100,000 unsecured revolving credit facility (the "Credit Facility") with a syndicate of banks. The Credit Facility has a three-year commitment maturing on January 20, 2014. The interest rate varies between LIBOR plus 1.75% and LIBOR plus 2.25%, depending on the Fund's asset coverage ratios. Outstanding loan balances accrue interest daily at a rate equal to one-month LIBOR plus 1.75%, based on current asset coverage ratios. The Fund pays a fee of 0.35% per annum on any unused amounts of the Credit Facility. See Financial Highlights for the Fund's asset coverage ratios under the 1940 Act.

For the nine months ended August 31, 2013, the average amount outstanding under the Credit Facility was \$45,255 with a weighted average interest rate of 2.10%. As of August 31, 2013, the Fund had \$53,000 outstanding under the Credit Facility at an interest rate of 1.94%.

11. Senior Unsecured Notes

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At August 31, 2013, the Fund had \$205,000 aggregate principal amount of Senior Notes. On May 1, 2013, the Fund completed a private placement with an institutional investor of \$40,000 of Senior Notes with an interest rate of 3.34% and a ten-year term. Net proceeds from the private placement were used to repay borrowings under the Fund's Credit Facility, to make additional portfolio investments and for general corporate purposes.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

NOTES TO FINANCIAL STATEMENTS

(amount in 000 s, except number of option contracts, share and per share)

(UNAUDITED)

The table below sets forth the key terms of each series of the Senior Notes at August 31, 2013.

| Series | Principal Outstanding, November 30, 2012 | Principal Issued | Principal Outstanding, August 31, 2013 | Estimated Fair Value August 31, 2013 | Fixed Interest Rate | Maturity Date |
|--------|--|------------------|--|--------------------------------------|---------------------|---------------|
| A | \$ 55,000 | \$ | \$ 55,000 | \$ 58,400 | 3.93% | 3/3/16 |
| B | 60,000 | | 60,000 | 65,500 | 4.62% | 3/3/18 |
| C | 50,000 | | 50,000 | 50,800 | 4.00% | 3/22/22 |
| D | | 40,000 | 40,000 | 37,600 | 3.34% | 5/1/23 |
| | \$ 165,000 | \$ 40,000 | \$ 205,000 | \$ 212,300 | | |

Holders of the Senior Notes are entitled to receive cash interest payments semi-annually (on September 3 and March 3) at the fixed rate. During the nine months ended August 31, 2013, the weighted average interest rate on the outstanding Senior Notes was 4.12%.

As of August 31, 2013, each series of Senior Notes were rate AAA by FitchRatings. In the event the credit rating on any series of Senior Notes falls below A-, the interest rate on such series will increase by 1% during the period of time such series is rated below A-. The Fund is required to maintain a current rating from one rating agency with respect to each series of Senior Notes.

The Senior Notes were issued in private placement offerings to institutional investors and are not listed on any exchange or automated quotation system. The Senior Notes contain various covenants related to other indebtedness, liens and limits on the Fund's overall leverage. Under the 1940 Act and the terms of the Senior Notes, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to the outstanding Senior Notes would be less than 300%.

The Senior Notes are redeemable in certain circumstances at the option of the Fund. The Senior Notes are also subject to a mandatory redemption to the extent needed to satisfy certain requirements if the Fund 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 Fund's rating agency guidelines in a timely manner.

The Senior Notes are unsecured obligations of the Fund and, upon liquidation, dissolution or winding up of the Fund, will rank: (1) senior to all of the Fund's outstanding preferred shares; (2) senior to all of the Fund's outstanding common shares; (3) on a parity with any unsecured creditors of the Fund and any unsecured senior securities representing indebtedness of the Fund; and (4) junior to any secured creditors of the Fund.

At August 31, 2013, the Fund was in compliance with all covenants under the agreements of the Senior Notes.

12. Preferred Stock

At August 31, 2013, the Fund had 2,600,000 shares of mandatory redeemable preferred stock outstanding, with a total liquidation value of \$65,000 (\$25.00 per share).

The table below sets forth the key terms of each series of the mandatory redeemable preferred stock at August 31, 2013.

| Series | Liquidation Value August 31, 2013 | Estimated Fair Value, August 31, 2013 | Rate | Mandatory Redemption Date |
|---------------|--|--|-------------|--------------------------------------|
| A | \$ 35,000 | \$ 37,300 | 5.32% | 3/3/18 |
| B | 30,000 | 30,200 | 4.50% | 3/22/20 |
| | \$ 65,000 | \$ 67,500 | | |

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.**NOTES TO FINANCIAL STATEMENTS****(amount in 000 s, except number of option contracts, share and per share)****(UNAUDITED)**

Holders of the mandatory redeemable preferred stock are entitled to receive cumulative cash dividend payments on the first business day following each quarterly period (February 28, May 31, August 31 and November 30).

As of August 31, 2013, each series of the Fund's mandatory redeemable preferred stock was rated AA by FitchRatings. The dividend rate on the Fund's mandatory redeemable preferred stock will increase between 0.5% and 4.0% if the credit rating is downgraded below A by FitchRatings. Further, the annual dividend for all series of mandatory redeemable preferred stock rate will increase by 4.0% if no ratings are maintained, and the annual dividend rate will increase by 5.0% if the Fund fails to make quarterly dividend or certain other payments. The Fund is required to maintain a current rating from one rating agency with respect to each series of mandatory redeemable preferred stock.

The mandatory redeemable preferred stock ranks senior to all of the Fund's outstanding common shares and on parity with any other preferred stock. The mandatory redeemable preferred stock is redeemable in certain circumstances at the option of the Fund and is also subject to a mandatory redemption if the Fund fails to meet a total leverage (debt and preferred stock) asset coverage ratio of 225% or fails to maintain its basic maintenance amount as stated in the Fund's rating agency guidelines.

Under the terms of the mandatory redeemable preferred stock, the Fund may not declare dividends or make other distributions on shares of its common stock or make purchases of such shares if, at any time of the declaration, distribution or purchase, asset coverage with respect to total leverage would be less than 225%.

The holders of the mandatory redeemable preferred stock 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 mandatory redeemable preferred stock or the holders of common stock. The holders of the mandatory redeemable preferred stock, voting separately as a single class, have the right to elect at least two directors of the Fund.

At August 31, 2013, the Fund was in compliance with the asset coverage and basic maintenance requirements of its mandatory redeemable preferred stock.

13. Common Stock

At August 31, 2013, the Fund had 197,400,000 shares of common stock authorized and 22,005,876 shares outstanding. As of that date, Kafa owned 4,000 shares. Transactions in common shares for the nine months ended August 31, 2013 were as follows:

| | |
|---|------------|
| Shares outstanding at November 30, 2012 | 21,895,242 |
| Shares issued through reinvestment of distributions | 110,634 |
| Shares outstanding at August 31, 2013 | 22,005,876 |

14. Subsequent Events

On September 25, 2013, the Fund declared its quarterly distribution of \$0.46 per common share for the fiscal third quarter of 2013 for a total of \$10,123. The distribution will be paid on October 18, 2013 to common stockholders of record on October 11, 2013. Of this total, pursuant to the Fund's dividend reinvestment plan, \$1,156 was reinvested into the Fund through the issuance of 38,169 shares of common stock.

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On October 21, 2013, Plains GP Holdings, L.P. (Plains GP) completed its initial public offering (IPO) and trades on the New York Stock Exchange (NYSE) under the ticker PAGP . Plains GP was formed to own a portion of the general partner of Plains All American Pipeline, L.P. All of the Fund 's holdings in Plains All American GP LLC are exchangeable into shares of Plains GP on a one-for-one basis at the Fund 's option. As part of the IPO, the Fund agreed to a 15-month lock-up on its Plains GP shares (lock up expires on January 21, 2015).

The Fund has performed an evaluation of subsequent events through the date the financial statements were issued and has determined that no additional items require recognition or disclosure.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

GLOSSARY OF KEY TERMS

(UNAUDITED)

This glossary contains definitions of certain key terms, as they are used in our investment objective and policies and as described in this Quarterly Report. These definitions may not correspond to standard sector definitions.

Energy Assets means assets that are used in the energy sector, including assets used in exploring, developing, producing, generating, transporting, transmitting, storing, gathering, processing, refining, distributing, mining or marketing of natural gas, natural gas liquids, crude oil, refined products, coal or electricity.

Energy Companies means companies that own and operate Energy Assets or provide energy-related services. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenues or operating income from operating Energy Assets or providing services for the operation of such Energy Assets or (ii) have Energy Assets that represent the majority of their assets.

General Partner MLPs means Master Limited Partnerships whose assets consist of ownership interests of an affiliated Master Limited Partnership (which may include general partnership interests, incentive distribution rights, common units and subordinated units).

Master Limited Partnerships means limited partnerships and limited liability companies that are publicly traded and are treated as partnerships for federal income tax purposes.

Midstream Assets means assets used in energy logistics, including, but not limited to, assets used in transporting, storing, gathering, processing, distributing, or marketing of natural gas, natural gas liquids, crude oil or refined products.

Midstream Companies means companies, other than Midstream MLPs, that own and operate Midstream Assets and are taxed as corporations for federal income tax purposes. This includes companies structured like MLPs, but not treated as a publicly-traded partnership for RIC qualification purposes. For purposes of this definition, this includes companies that (i) derive at least 50% of their revenue or operating income from operating Midstream Assets or (ii) have Midstream Assets that represent the majority of their assets.

Midstream/Energy Sector consists of (a) Midstream MLPs, (b) Midstream Companies, (c) Other MLPs and (d) Other Energy Companies.

Midstream Sector consists of (a) Midstream MLPs and (b) Midstream Companies.

Midstream MLPs means MLPs that principally own and operate Midstream Assets. Midstream MLPs also include (a) MLPs that provide transportation and distribution services of energy related products through the ownership of marine transportation vessels, (b) General Partner MLPs whose assets consist of ownership interests of an affiliated Midstream MLP and (c) MLP Affiliates of Midstream MLPs.

MLPs means entities that are structured as Master Limited Partnerships and their affiliates and includes Midstream MLPs, Other MLPs and MLP Affiliates.

MLP Affiliates means affiliates of Master Limited Partnerships, substantially all of whose assets consist of i-units. MLP Affiliates are not treated as partnerships for federal income tax purposes.

Other Energy Companies means Energy Companies, excluding MLPs and Midstream Companies.

Other MLPs consists of (a) upstream MLPs, (b) coal MLPs, (c) propane MLPs and (d) MLPs that operate other energy assets or provide energy-related services.

KAYNE ANDERSON MIDSTREAM/ENERGY FUND, INC.

REPURCHASE DISCLOSURE

(UNAUDITED)

Notice is hereby given in accordance with Section 23(c) of the 1940 Act, that the Fund may from time to time purchase shares of its common and preferred stock and its Senior Notes in the open market or in a privately negotiated transactions.

Directors and Corporate Officers

| | |
|---------------------|--|
| Kevin S. McCarthy | Chairman of the Board of Directors, President and Chief Executive Officer |
| William R. Cordes | Director |
| Barry R. Pearl | Director |
| Albert L. Richey | Director |
| William L. Thacker | Director |
| Terry A. Hart | Chief Financial Officer and Treasurer |
| David J. Shladovsky | Chief Compliance Officer and Secretary |
| J.C. Frey | Executive Vice President, Assistant Secretary and Assistant Treasurer |
| James C. Baker | Executive Vice President |
| Ron M. Logan, Jr. | Senior Vice President |
| Jody C. Meraz | Vice President |

Investment Adviser

KA Fund Advisors, LLC
811 Main Street, 14th Floor
Houston, TX 77002

1800 Avenue of the Stars, Third Floor
Los Angeles, CA 90067

Administrator

Ultimus Fund Solutions, LLC
225 Pictoria Drive, Suite 450
Cincinnati, OH 45246

Stock Transfer Agent and Registrar

American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219

Custodian

JPMorgan Chase Bank, N.A.
14201 North Dallas Parkway, Second Floor
Dallas, TX 75254

Independent Registered Public Accounting Firm

PricewaterhouseCoopers LLP
601 S. Figueroa Street, Suite 900
Los Angeles, CA 90017

Legal Counsel

Paul Hastings LLP
55 Second Street, 24th Floor
San Francisco, CA 94105

Please visit us on the web at <http://www.kaynefunds.com> or call us toll-free at 1-877-657-3863.

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