List of Attachments

Attachment A	Verified Statement of Professor J. Peter Williamson, Laurence F. Whittemore Professor of Finance, Emeritus, Amos Tuck School of Business Administration, Dartmouth College
Attachment B	Affidavit of Professor Adam B. Jaffe, Professor of Economics, Brandeis University

ATTACHMENT A

Verified Statement of
Professor J. Peter Williamson
On behalf of
Vastar Resources, Inc.

Introduction

I am J Peter Williamson, the Laurence F. Whittemore Professor of Finance, Emeritus, of the Amos Tuck School of Business Administration, Dartmouth College, Hanover, New Hampshire. My business address is 89 Main Street, West Lebanon, NH 03784. P.O. Box 5160, Hanover, NH 03755. My qualifications appear in Exhibit No.1 to this statement.

The purpose of my verified statement is to discuss two aspects of the comments of Vastar Resources, Inc. ("VRI") on the new rules proposed by the Minerals Management Service ("MMS") in the "Further Supplemental Proposed Rule Establishing Oil Value for Royalty Due on Federal Leases." Those two aspects have to do with the calculation of the wellhead value to which a royalty percentage is applied, and more specifically to the determination of the cost of transportation of the oil from the wellhead to the point at which a market price for the oil can be established.

My understanding is that the MMS has regulations that govern the calculation of the royalties on oil produced on federal lands. In certain circumstances (such as offshore production), those regulations require a so-called "netback" calculation, in which the royalty valuation at the wellhead is determined with reference to a market price downstream of the well. From that market price, the cost of transportation must be deducted to obtain a wellhead value to which the royalty percentage is applied. Where the relationship between the oil producer and the pipeline transporting the oil is at arm's length, I understand that the MMS will typically utilize the pipeline's stated tariff or contract rate as the transportation cost for purposes of the netback calculation. However, where the producer and the pipeline are not at arm's length (i.e., they

are affiliated), the MMS will frequently impute a transportation cost, one that may be different from the pipeline's stated tariff or contract rate, based on the cost factors defined in the MMS regulations.

VRI's position in its rulemaking comments, as I understand it, is that the MMS should utilize the stated tariff or contract rate for transportation, even in non-arm's length transactions, where there is a reliable, independent benchmark confirming that the stated rate is reasonable, such as rates charged in arm's length situations by other owners of the same pipeline or rates charged by a prior owner to unrelated third parties. However, if the MMS determines nonetheless to apply a methodology designed to impute a transportation cost for affiliated pipeline movements, Vastar asserts that the calculations should include all legitimate costs of transportation. As a matter of fairness and non-discrimination, those costs should be those normally recognized for rate-setting purposes by the Federal Energy Regulatory Commission ("FERC" or "the Commission") and other regulatory agencies. The FERC, in setting allowable transportation rates for pipelines, determines the cost of service for a pipeline and allows rates that can be expected to cover that cost.

The two elements of the cost of transportation that I discuss are: (1) the appropriate determination of the cost of equity capital for a pipeline carrier, and (2) the appropriate calculation of the allowance for federal and state income taxes payable by the carrier In each case, my verified statement describes both the general economic principles underlying the determination and the particular methodology by which the FERC calculates each of the two components of a pipeline's cost of service. My conclusion is that the methodology for dealing with these two cost components that is embedded in the current MMS regulations does not correspond to the FERC's approach (or to the approach of most state regulatory agencies) and is inconsistent with the applicable economic principles for properly measuring transportation costs.

Rate of Return as a Cost Element

The cost of capital is a significant element of a pipeline's cost of operating. In the unregulated world, a business normally charges prices that will cover its costs and provide a profit, a return to the owners of the business on their investment. In the regulated world, that profit is considered to be another cost – the cost of the capital provided by the owners. The cost in dollars is normally determined by multiplying a suitable rate of return by the investment. That rate of return is one found to be consistent with the cost of capital for alternative investments in companies having business and financial risk characteristics similar to those of the pipeline in question. The consistency is important in establishing a rate of return that will enable the pipeline to compete for capital in a free marketplace.

Investors face a wide variety of choices in investing their capital. If safety is of paramount importance they may prefer to buy U.S. Treasury securities, accepting an interest rate that is lower than those available, for example, on high quality corporate bonds that are a little more risky, because of some danger that the corporation will fail and the investor will not be paid the promised principal and interest. If that increase in risk is acceptable, the investor will choose the corporate bonds for their higher interest rate. If still higher risk is acceptable, the investor may choose lower quality corporate bonds offering yet higher interest rates, still relying on the contractual nature of the payment of principal and interest, but accepting a greater likelihood that the corporation will for some reason be unable to make the promised payments. Even greater risk, and even higher expectations of return, go with shares of stock. In this case there is no corporate promise of repayment of the investment or even of dividend payments. There is only the expectation that a well-managed corporation in a profitable industry will succeed in increasing its earnings and rewarding the investor with a rising stock price or dividends or both. The risk lies in the possibility that the corporation will perform poorly and the investor will be disappointed by a falling stock price and reduced dividends or none at all. Risk perceptions vary substantially across the range of stocks available for purchase,

with some stocks regarded as not much riskier than low quality corporate bonds and others regarded as highly speculative. Correspondingly, the expectations of investors with respect to the rate of return, or profitability, vary substantially across that range.

Whatever the importance of safety may be to an investor, it is a fundamental economic principle that investors will knowingly choose a higher risk investment over a lower risk alternative only if the former can be expected to prove more profitable, that is, to offer a greater rate of return. In a free marketplace, like the United States stock market, share prices generally reflect the expectations of the investment community with respect to rates of return and the perceptions of that community with respect to risk. Hence, to establish what rate of return a pipeline must offer to investors in its shares of stock in order to persuade those investors to buy those shares and provide needed capital, it is necessary to establish the level of risk to the pipeline investors, and the rates of return they are expecting from other investments of comparable risk. The appropriate measure of the cost of equity capital to a particular enterprise is the expected rate of return on investments of comparable risk.

MMS policy, as expressed in 30 CFR §206.105 (b)(2)(v), specifies that the rate of return applied to the capital investment in the transportation pipeline and included in the cost of transportation shall be the interest rate published in Standard & Poor's (S&P's) Bond Guide for bonds with a BBB S&P rating. S&P rates industrial bonds from AAA (best quality) down to BBB (lowest quality of investment grade), and from BB (best quality of speculative grade) down to D (lowest quality of speculative grade). For oil pipelines with S&P bond ratings, the average rating is currently around BBB to A. (See Exhibit No. 2 to this verified statement, showing S&P and Moody's bond ratings. Moody's Investors Service provides bond ratings, and its rating of Baa corresponds to the S&P rating of BBB.)

However, pipelines are not financed entirely by debt, and regulatory agencies, including the FERC, recognize this. At present, the FERC recognizes five publicly traded oil pipeline companies as the best to use for comparison

purposes in determining the cost of equity to a pipeline the shares of which are not traded in the marketplace. These are listed in Exhibit No. 2. The equity ratios in the capital structures of these companies are shown in the exhibit, and the average ratios of debt and equity are 54% and 46%, respectively. While the interest rate published by S&P for industrial BBB bonds may be a reasonable approximation of the current cost of debt for these oil pipelines, it falls far short of a reasonable approximation of the cost of equity. The procedure followed by the FERC, and to the best of my knowledge by most state regulatory agencies, is to determine an average overall cost of capital by weighting the cost of equity by the equity percentage of the total capital and by weighting the cost of debt by the debt percentage of the total, and computing the weighted average cost. That is, the weighted average cost is ((cost of equity x % equity) + (cost of debt x % debt)). The FERC practice is to use as the cost of debt not a published rate for a class of bonds (such as S&P BBB industrial bonds) but the actual cost of the pipeline's debt. The determination of the cost of equity is also specific to the particular pipeline but its determination is more complex.

There are several methodologies that can be used for the determination of the cost of equity, but the one most used by regulatory agencies, and relied on almost exclusively by the FERC, is the Discounted Cash Flow method. This method equates the price of a share in a company to the discounted stream of dividends the shareholder anticipates over the indefinite future. The discount rate is the rate of return expected by investors who put their money in such shares. It is this discount rate that is the cost of equity capital to the company. This is the rate that investors require if they are to buy the company's shares and so provide the company with needed equity capital. (The United States Supreme Court has stated that the tariff rates allowed a regulated utility by a regulatory agency must enable the utility to attract needed capital.) The most common formula by which the determination of the rate is determined is set out as $k = y + g$, where k is the cost of equity, y is the current dividend yield on the company's shares, and g is the growth rate in dividends expected by investors. This "market based" methodology is intended to rely on marketplace data to estimate the rate of return investors are actually requiring as the incentive to invest in the utility.

The FERC practice, when dealing with an oil pipeline, is to apply the equation above to a set of oil pipeline companies that are publicly traded (so that data are available as to the current dividend yields and expected growth rates). This calculation determines a cost of equity representative of the set of oil pipeline companies. From that cost, by comparing the risks of the subject pipeline to the risks in the set of publicly traded companies, the FERC will determine the cost of equity for the subject pipeline. Dividend yields are easily observable in the marketplace for publicly traded companies, because price data and dividend data are publicly reported. Investor growth expectations, on the other hand, are not directly observable and must be inferred. The data from which they are inferred are typically the published growth forecasts made by professional analysts or investment advisory services.

The Commission's method is actually quite conservative in that it relies not only on analysts' forecasts of earnings growth rates in determining the growth rate g, but averages analysts' forecast for the representative companies with long-term growth forecasts for Gross Domestic Product (GDP). The resulting k for pipelines is often lower than it would be if the FERC relied only on the analysts' growth forecasts as representative of investor expectations.

The most recently published FERC opinion discussing the determination of the cost of equity for an oil pipeline is Opinion No. 435, *SFPP, L.P.*, 86 FERC ¶ 61,022 (1999). In that decision the methodology to be applied in the case of an oil pipeline was set out, and the indicated cost of equity was 14.40%. An updated calculation, using the methodology set out in Opinion No. 435, yields a current cost of equity of 15.3%, as shown in Exhibit No. 2. (The FERC policy is generally to use the median cost, here 15.3%, unless the subject pipeline is of extremely high or low relative risk.) The 15.3% equity cost can be contrasted with the most recently published S&P BBB industrial yield (for November 1999) of 8.44 %.

The current MMS policy appears to assume that oil pipelines are financed entirely by debt carrying an interest rate equal to the average for S&P BBB industrial bonds. This is a quite unrealistic assumption. It may well have

originated in a wish to keep the matter of cost of capital simple, but it results in seriously understating the true cost of capital. Market determined rates, whether unregulated or established by regulation, will normally include provision for all costs, including all capital costs. I believe that the MMS should recognize an appropriate cost of equity based on the FERC methodology.

Income Tax Allowance as a Cost Element

MMS policy as set out in 30 CFR §206.105 (b)(2)(iii) does not allow the inclusion of state or federal income taxes in the transportation allowance. Yet income taxes are an ordinary and necessary cost of doing business, as the FERC and, I believe, the state regulatory agencies all recognize. Rates must include an allowance for income tax if they are to cover the costs of doing business. Income tax must be paid by a pipeline corporation on its taxable income, and the practice of the FERC, and of state regulatory agencies I believe, is to include income tax in the cost of service which is the basis for rates set by the Commission and the state agencies.

The common procedure, followed by the FERC in the case of an incorporated pipeline, is to calculate the income tax, at corporate tax rates, corresponding to the dollar return on equity that is included in the cost of service. It is important to note that the "cost of equity" determined as described above, is always the after-tax cost, that is, the return to the investors after the income taxes of the corporation have been paid. Thus, if the dollars of return on equity for the pipeline operation are E, and the tax rate is T, then the allowance for income tax is (E/(1-T) – E). Adding the return E to the tax allowance gives E/(1-T) as the required earnings before tax and E as the earnings after tax. (The FERC departs from this approach only in the case of pipelines organized as partnerships with some partners that are not themselves corporations, where the allowance is reduced to the percentage of net income attributable to the corporate owners.)

The result of the procedure described above is to include in the cost of service both the justifiable return on equity and the associated income tax for the

pipeline operation. I believe it is the appropriate procedure for the determination of cost of service for purposes of determining the transportation element of the royalty valuation determination.

If there is no allowance for income tax in the determination of the transportation cost, the result is an understatement of the true transportation cost. In effect, a portion of the appropriate equity return is taken away from the pipeline's investors and used to pay the corporation's income taxes. Assume, for example, that the investors' required rate of return (the cost of equity capital) is 15% on an investment base of $10,000. If the net taxable income of the corporation is $2,500 subject to federal and state income taxes at 40%, the taxes are $1,000, leaving $1,500, the correct return to the shareholders. If the company were allowed to earn net taxable income of only $1,500, rather than the $2,500, the income tax would be $600, leaving only $900 for the shareholders. The rate of return would then be only 9%, not the 15% cost of equity. Only by allowing the $1,000 income tax expense and bringing the net taxable income to $2,500, will the shareholders be able to earn their required 15%.

The result of failure to include an allowance for income tax expense is an understatement of the true transportation cost that is both unfair and discriminatory. It is unfair in that it simply understates the true transportation cost, something that I believe would not be permissible in the setting of tariffs by a regulatory agency. It is discriminatory in that transportation costs in the case of an arm's length pipeline whether regulated or unregulated, will normally cover the pipeline's income tax, while rates that are based on transportation costs excluding income taxes will not. The result is that investment in OCS pipelines is discouraged, contrary to the goal of developing offshore oil resources in a responsible manner.

To achieve fairness and avoid discrimination, the MMS should allow the inclusion of income taxes in the determination of transportation costs for purposes of establishing royalties.

EDUCATION, TEACHING, RESEARCH AND PROFESSIONAL EXPERIENCE OF J. PETER WILLIAMSON

Education

University of Toronto, B.A. in 1952, Mathematics, Physics & Chemistry; Harvard Business School, MBA in 1954, DBA in 1961; Harvard Law School LL.B. in 1957.

Teaching and Research

From 1957 to 1961, Assistant Professor of Business Administration at the Harvard Business School. In 1961 joined the faculty of the Amos Tuck School of Business Administration at Dartmouth College as Associate Professor. On the Amos Tuck School faculty since 1961 and Professor since 1966 (except for one year on the faculty of the University of Toronto Law School). Currently the Laurence F. Whittemore Professor of Finance at the Amos Tuck School.

Teaching at the Amos Tuck School includes courses in corporation finance, financial institutions, investments and federal taxation. Research in these fields has led to a dozen or so books and monographs and to articles in the *Journal of Finance*, the *Financial Analysts Journal*, the *Journal of the Eastern Financial Association*, the *Journal of Bank Research*, the *Journal of Portfolio Management* and other professional journals.

Consulting and Research

Consulting activity, in addition to work for regulated utilities, has included valuations of banks and other businesses, advice on investment portfolios and specifically on investment expectations; and several publications have been specifically concerned with investment strategies, risk and likely rates of return. Author of four books that are largely concerned with this subject and a number of articles.

The book, *Performance Measurement and Investment Objectives for Educational Endowment Funds*, was published by the Common Fund in 1972. The book, *Funds for the Future*, published by the Twentieth Century Fund in 1975, consists chiefly of a discussion of investment of college and university endowment funds, including investment risk and expected rates of return. A revised and updated edition of this book, entitled *Funds for the Future: College Endowment Management for the 1990s*, was published by the Common Fund in 1993. The book,

Spending Policy for Educational Endowments, co-authored with Richard Ennis of Ennis, Knupp & Gold, Inc., was published by the Common Fund in 1976. It deals with the relationship between spending plans and expectations of risk and return. Author of chapters in *The Handbook of Financial Markets and Institutions* (6th ed. 1986) and in *The Investment Manager's Handbook* (1980) entitled, respectively, "Performance Measurement" and "Educational Endowment Funds." Editor of, and author of two chapters in the *Investment Banking Handbook* published by John Wiley & Sons in 1988. Author of a chapter in the *Handbook of Modern Finance*, published by Warren Gorham Lamont in 1993.

Trustee of the Common Fund 1978-90, and Chairman of its Short-term Fund Committee. Participated as a trustee in the hiring, reviewing and replacement of over thirty investment managers who managed 5.5 billion dollars invested long-term. Worked more closely with three managers who managed another 4.5 billion dollar short-term funds of the Common Fund.

In 1966-67 and 1977-79, retained by the Canadian Government's Department of Consumer and Corporate Affairs to consider appropriate federal regulation of securities markets in Canada. One of four authors of *Proposals for a Securities Market Law for Canada* (1979) and the author of two working papers published as part of the *Proposals*: "Canadian Capital Markets" and "Canadian Financial Institutions."

Regulatory Proceedings

Has testified on behalf of a number of utilities and on behalf of several consumer representatives. Testified in 1980 on behalf of the Public Service Company of New Hampshire before the New Hampshire Board of Taxation in connection with the franchise tax paid by utilities in New Hampshire. Testified over the past 15 years in electric utility rate cases before the Vermont Public Service Board at the request of the Counsel for the Public, the Department of Public Service and the Public Service Board in connection with applications for rate increases filed by Green Mountain Power Corporation (Dockets 3642, 3758, 4418, 4503/4537, 4570, 4661, 4796, 4865, 5013 and 5125), Central Vermont Public Service Corporation (Dockets 3744, 3991, 4230, 4634 and 5030) and Vermont Electric Cooperative (Dockets 5009/5112 and 5630/5632), and on behalf of Green Mountain Power (Dockets 5282, 5370, 5428, and 5780).

Testified, at the request of the Vermont Public Service Board, on a proposed amendment by Central Vermont Public Service Corporation to its first mortgage bond indenture (Docket

4206), and on the proposals by Green Mountain Power and Central Vermont to purchase participations in the Seabrook nuclear plant in the summer of 1979. Also testified before the Board at the request of the Department of Public Service on a proposal by Central Vermont Public Service corporation to sell its participation in the Seabrook plant (Docket 5045). Testified at the request of Central Vermont Public Service Corporation on a proposal to classify its Board of Directors (Docket 5103), and at the request of the Vermont Electric Cooperative on a proposed restructuring of its debt (Docket 5630/5632.

Testified before the Rhode Island Public Utilities Commission at the request of the Rhode Island Division of Public Utilities and Carriers in connection with an application for rate relief made by Narragansett Electric Company (Docket 1288).

Testified before the New Hampshire Public Utilities Commission at the request of the New Hampshire Electric Cooperative in rate cases (Dockets DR 77-83, DR 78-24, DR 79-178, DR 80-189 and DR 81-340) and in a financing case (Docket DF 83-360). Also testified before the New Hampshire PUC at the request of the Consumer Advocate on a petition for rate relief filed by Public Service Company of New Hampshire (Docket DR 79-187), at the request of Public Service Company of New Hampshire on its petitions for rate relief (Dockets DR 81-6, DR 81-87, DR 82-150, DR 82-333, DR 86-122 and DR 87-151), and at the request of EnergyNorth Natural Gas in its petition for rate relief (Docket DR91-212).

Testified before the Federal Energy Regulatory Commission at the request of Public Service Company of New Hampshire in support of its rate increases (Docket Nos. ER81-659 and ER82-141). Also testified before the FERC at the request of Tennessee Gas Pipeline Co. (Docket Nos. RP80-97 and RP81-54), Midwestern Gas Transmission Co. (Docket Nos. RP81-17 and RP81-57), Tarpon Transmission Company (Docket No. RP84-82-000), Mountain Fuel Resources, Inc (Docket No. RP86-7-000), Alabama-Tennessee Natural Gas Company (Docket No. RP87-41-000), Kern River Gas Transmission Company (Docket No. CP85-437-000), ANR Pipeline Company (Docket No. RP89-161), Tarpon Transmission Company (Docket No. RP84-82-004), Lakehead Pipeline Company L.P. (Docket No. IS92-27-000), Kern River Gas Transmission Company (Docket No. RP92-226-000), Wyoming Interstate Company, Ltd. (Docket No. RP85-39-000), Ozark Gas Transmission System (Docket No. RP94-105-000), Williams Natural Gas Company (Docket No. RP93-109-000), and Southern Natural Gas Company (Docket No. RP93-15-000).

Testified before the Public Service Commission of Utah in Mountain Fuel Supply (Case No. 89-057-15).

Prepared and filed testimony in rate cases before the FERC that have not involved hearings either because of settlements or because hearings have not yet been scheduled in: United Gas Pipe Line Company (Docket No. RP88-92), Questar Pipeline Company (Docket No. RP88-93), Natural Gas Pipeline Company of America (Docket No. RP88-209), Tennessee Gas Pipeline Company (Docket No. RP88-228), High Island Offshore System (Docket No. RP89-37), U-T Offshore System (Docket No. RP89-38), Southern Natural Gas Company (Docket Nos. RP89-224 and 90-139), South Georgia Natural Gas Company (Docket No. RP89-225), Alabama-Tennessee Natural Gas Company (Docket No. RP89-251), Transcontinental Gas Pipe Line (Docket No. RP90 8), Colorado Interstate Gas Company (Docket No. RP90 69), East Tennessee Natural Gas Company (Docket No. RP90-111), New England Hydro-Transmission Electric Company Inc., New England Hydro-Transmission Corporation (Docket No. ER90-450), New England Power Co. (Docket No. ER90-525), United Gas Pipe Line Company (Docket No. RP91-126), Questar Pipeline Company (Docket No. RP91-140-000), Williams Natural Gas Company (Docket No. RP-91-152-000), Ocean State Power II (Docket No. ER89-563), New England Power Co. (Docket No. ER91-565-000), Midwestern Gas Transmission Company (Docket No. RP91-189-000), Tennessee Gas Pipeline Co. (Docket No. RP91-203-000), East Tennessee Natural Gas Company (Docket No. RP91-204-000), High Island Offshore System (Docket No. RP92-50-000), U-T Offshore System (Docket No. RP92-47-000), Viking Gas Transmission Company (Docket No. RP92-48-000), South Georgia Natural Gas Co. (Docket No. RP92-74-000), Southern Natural Gas (Docket No. RP92-134-000), New England Power Co. (Docket No. ER92-764-000), Kern River Gas Transmission Company (Docket No. RP92-226-000), Tennesee Gas Pipeline Company (Docket Nos. RP91-203-000 and RP92-226-000), United Gas Pipe Line Company (Docket No. RP92-235-000), Alabama-Tennessee Natural Gas Company (Docket No. RP92-237-000), Natural Gas Pipeline Company of America (Docket No. RP93-36-000), U-T Offshore System (Docket No. RP93-59-000), High Island Offshore System (Docket No. RP93-61-000), Trailblazer Pipeline Company (Docket No. RP93-55-000), Colorado Interstate Gas Company (Docket No. RP93-99-000), Texas Gas Transmission Company (Docket No. RP93-106-001), New England Power Company (Docket No. ER93-920-000), Lakehead Pipeline Company (Docket No. IS93-33), Massachusetts Electric Company (Docket No. ER94-129), ANR Pipeline Company (Docket No. RP94-43-000), U-T Offshore System (Docket No. RP93-61-000), High Island Offshore System (Docket No. RP93-59-000), Overthrust Pipeline Co. (Docket No. RP94-104-000), U-T Offshore

System (Docket No. RP94-161-000), High Island Offshore System (Docket No. RP94-162), Wyoming Interstate Co., Ltd. (Docket No. RP94-267-000), Vermont Yankee Nuclear Power (Docket No. ER94-), New England Power Company (Docket No. ER94-), Stingray Pipeline Company (Docket No. RP94-301-000), Texas Gas Transmission (Docket No. 94-423-000), Florida Gas Transmission Company (Docket No. 95-103-000), Tennessee Gas Pipeline Company (Docket No. RP95-112-000), and Williams Natural Gas Company (Docket No. RP95-136-000).

Testified three times before the Ontario Securities Commission, once in July 1982 in hearings on diversification in the Canadian securities industry, again in June 1983 in hearings on the entry of banks into the brokerage business, and again in December 1984 in hearings on ownership of securities firms.

Exhibit No. 2

Cost of Equity for Five Oil Pipelines using the FERC Method

OLPRI99L

Company	Tkr Symbol	Unit Prices at Monthly Close								
		Jul 99	Aug 99	Sep 99	Oct 99	Nov 99	Dec 99	Avg Price	Ann Div Distr	Distrn Yield
Buckeye Partners LP	BPL	29.1250	27.5000	27.0000	26.1250	27.3750	26.0000	27.1875	2.20	8.09%
Kaneb Pipe Partners LP	KPP	30.0000	29.6250	28.8750	27.6250	25.3750	24.6875	27.6979	2.80	10.11%
Kinder Morgan Energy Partners	KMP	40.8750	44.0000	43.3125	42.6875	40.4375	41.4375	42.1250	2.90	6.88%
Lakehead Pipe Line Partners LP	LHP	43.0000	44.6875	42.6250	38.8125	35.0625	34.8125	39.8333	3.50	8.79%
Teppco Partners LP	TPP	25.8125	25.6250	20.0000	19.2500	18.3750	19.3125	21.3958	1.90	8.88%

Yield Plus Growth Using IBES Earnings Growth and GDP Growth Forecasts

		Yield	IBES Median	GDP Growth	Wtd Avg Growth	Adjusted Yield	Yield Plus Growth	S&P Bond Rating	Moody's Bond Rating	Equity Ratio
Buckeye Partners LP	BPL	8.09%	5.00%	4.90%	4.97%	8.29%	13.26%	A-		54%
Kaneb Pipe Partners LP	KPP	10.11%	5.00%	4.90%	4.97%	10.36%	15.33%			33%
Kinder Morgan Energy Partners	KMP	6.88%	15.00%	4.90%	11.63%	7.28%	18.92%	BBB+	Baa1	63%
Lakehead Pipe Line Partners LP	LHP	8.79%	7.00%	4.90%	6.30%	9.06%	15.36%		A3	44%
Teppco Partners LP	TPP	8.88%	6.00%	4.90%	5.63%	9.13%	14.76%			34%
Average		8.55%	7.60%		6.70%		15.53%			46%
Median							15.33%			
High							18.92%			
Low							13.26%			

IBES Growth Rates from IBES Report of 12/16/99

GDP Growth Forecast from EIA, McGraw-Hill/DRI and WEFA

VERIFICATION

State of New Hampshire)
) ss:
County of Grafton)

J. Peter Williamson, being first duly sworn, deposes and says that he has read the foregoing verified statement and that it is true and correct to the best of his knowledge, understanding and belief.

J. Peter Williamson

Subscribed and sworn to before me this 27th day of January, 2000.

Notary Public

My Commission expires:

DORISANN D. ROSS, Notary Public
My Commission Expires October 27 2004