**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

In the Matter of the Application of Kansas Gas Service, a Division of ONE Gas, Inc. for Adjustment of its Natural Gas Rates in the State of Kansas	**))))**	**Docket No. 18-KGSG-560-RTS**

DIRECT TESTIMONY

PREPARED BY

Adam H. Gatewood

UTILITIES DIVISION

KANSAS CORPORATION COMMISSION

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Q. Would you please state your name and business address?

A. My name is Adam H. Gatewood. My business address is 1500 Southwest Arrowhead Road, Topeka, Kansas, 66604.

Q. Who is your employer and what is your title?

A. I am employed in the Utilities Division of the Kansas Corporation Commission as a Managing Financial Analyst.

Q. What is your educational and professional background?

A. I graduated from Washburn University with a B.A. in Economics and a Masters of Business Administration. I have filed testimony on cost of capital and related financial issues before the Commission in more than 120 proceedings. I have also filed testimony on cost of capital issues before the Federal Energy Regulatory Commission in natural gas pipeline and electric transmission dockets.

Q. What issues are you testifying to in this Docket?

A. I am testifying to the rate of return used to calculate Kansas Gas Service's (KGS) revenue requirement.

Executive Summary

Q. Please summarize your findings.

A. With respect to the rate of return for KGS, I recommend that the Commission adopt a rate of return of 6.81%, which incorporates 9.15% return on equity (ROE). My range for KGS's cost of equity is 9.00% to 9.50%, and I recommend the revenue calculation use 9.15% ROE. My analysis in this Docket provides substantial evidence that 9.15% is a fair and reasonable return for both shareholders and ratepayers. Further, my rate of return[1] (ROR) also incorporates a 55% equity ratio in KGS's capital structure; a downward adjustment from its filed position of 62% equity. My analysis demonstrates that a 55% equity ratio is wholly consistent with the gas LDC industry, more so than the 62% equity ratio KGS requested. I have no adjustments to the cost of debt contained in Section 7 of the

[1] The rate of return cited in my direct testimony is truncated to two decimal points. The actual rate of return (that is not truncated) applied to calculate Staff's revenue requirement appears in Staff Schedules C-1.

Application.

There are some qualifications that I need to make to fully explain Staff's position. My position of a 9.15% ROE and 6.81% ROR assume that the Commission accepts Dr. Glass' rate design methodology, thus fully decoupling KGS's revenue stream from its volumetric sales. If the Commission chooses to keep KGS's existing suite of adjustment mechanisms[2] instead of Dr. Glass' proposal, then I support a 9.25% ROE, the mid-point of my range, and a 6.86% ROR.

A careful review of Dr. Fairchild's analyses reveals that his exclusive-reliance on short-term growth estimates, which are far in excess of investors' long-term expectations, causes him to overstate investors' required return on equity capital. When Dr. Fairchild's growth rates are adjusted to reflect investors' long-term expectations, the results are very near that of my analysis. The following table summarizes my recommended ROR and the components of the calculation.

Kansas Gas Service, a Division of OneGas, Inc.
Staff Proposed Rate of Return
Test Year Ended December 31, 2017

	Weight	Cost	Weighted Cost
Long-term Debt	45.00%	3.94%	1.77%
Common Equity	55.00%	9.15%	5.03%
			6.81%

As compared to the requested rate of return in KGS's Application, which is composed of

[2] My alternative recommendation of a 9.25% ROE assumes that the Commission maintains the status quo which includes: 1) a fixed charge structure that recovers about 54% of its net margins (see: One Gas, Inc., SEC Form 10-K for 2017 filed February 22, 2017, p. 10); and 2) its existing bundle of rate adjustment mechanisms described in footnote 5.

the following components:

Kansas Gas Service, a Division of OneGas, Inc.
Proposed Rate of Return in Section 7 of Application
Test Year Ended December 31, 2017

	Weight	Cost	Weighted Cost
Long-term Debt	37.81%	3.94%	1.49%
Common Equity	62.19%	10.00%	6.22%
			7.71%

Source: 18-KGSG-560-RTS, Section 7

Setting the rate of return requires decisions on each of the components shown in these tables: the cost of debt; the cost of equity; and the weight of each in the utility's capital structure. Staff agrees with the cost of debt in KGS's Application; Staff disagrees with the allowed return on equity and the capital structure.

Q. How did you arrive at the conclusion that 9.15% is a reasonable return on equity for KGS?

A. My recommendation and the range are based on measurements from the current capital markets, an evaluation of previous Commission decisions, and a review of my analysis filed in KGS's last rate case in Docket 16-KGSG-491-RTS (16-491). To measure the current capital markets, I relied on financial models and inputs to those models that are consistent with those used in past rate cases. The results of those models are summarized in the following table. A cost of equity estimate is a range, not a specific point. As a practical matter, it is necessary to pick a specific point within that range of reasonable estimates so as to calculate a revenue requirement. My range for KGS's cost of equity is 9.00% to 9.50%, and I recommend the revenue requirement calculation use 9.15%.

Summary of Staff's Cost of Equity Estimates 18-KGSG-560-RTS			
Discounted Cash Flow Analyses	**Mean**	**Low**	**High**
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	8.47%	8.18%	8.76%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast	7.65%	6.66%	9.16%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1926 - 2017, Reported by SBBI, Duff & Phelps	9.03%	8.52%	9.55%
Based on Forecasted Return Data Published by J.P. Morgan Asset Management (2018 edition)	6.11%	5.82%	6.40%

There are also several factors that are somewhat less objective than these observation from the capital markets. It is difficult to place a specific weighting on these less objective measurements. One observation stands out and is a reason for recommending a higher allowed return in this Docket over that Staff proposed in 16-491 is that the forecasted growth rates gathered for the DCF model show a significant increase over those gathered for the analysis in my 16-491 testimony. The following table summarizes the comparison between my findings in the 16-491 Docket and my analysis for this Docket.

Comparison to 16-KGSG-491-RTS Staff Recommendations

	16-491	18-560	Increase from 16-491 to 18-560
Discounted Cash Flow Model:	7.74%	8.47%	0.73%
Results	6.68% 9.02%	7.49% 11.13%	0.81% 2.11%
Divident Yield	2.86% 2.99%	2.63% 3.20%	-0.23% 0.21%
Growth Rate	4.82%	5.56%	0.74%
Short-term Growth Rate	5.32%	6.83%	1.51%
nGDP--Long-term Growth Estimate	4.29%	4.28%	-0.01%
Internal Rate of Return (multi-stage DCF):	7.38%	7.65%	0.27%
	6.48% 8.75%	6.66% 9.16%	0.18% 0.41%
Capital Asset Pricing Model:			
Historic	9.28%	9.03%	-0.25%
Forecasted	7.90%	6.11%	-1.79%
Interest Rates:			
30 Year Treasury Yield	2.64%	2.90%	0.26%
A/A Rated Utility Bond Yields	4.03%	4.10%	0.07%
BBB/Baa Rated Utility Bond Yields	4.57%	4.41%	
OneGas, Inc. Bond Yields	4.11%	4.06%	-0.05%

Sources:
Direct Testimony of Adam H. Gatewood, 16-KGSG-491-RTS, filed 9/7/2016, p. 9, 50, 56, 61, and 62

There has been an increase in the forecasted short-term growth rates that results an increase in the results of the DCF model. The increase in forecasted growth is seen throughout the natural gas distribution industry; the result of an increase in capital investment in new plant replacing aging plant resulting in growing rate base. In the rate of return regulated utility industry, rate base growth is the key driver of growth in earnings and dividends. The table also shows a larger decrease in the forecasted capital asset pricing model (CAPM) results. Although a highly relevant measure of capital costs, I gave it less consideration because even though it is an informative model, regulators tend to give it less weight than the DCF analyses. I also found that a mid-point ROE of 9.25% allows a risk premium over the yield on One Gas (OGS) long-term debt that is consistent with that found in recent Staff recommendations and is near the level of risk premium cited by the Commission in a previous rate case. There are some changes in the rate design for KGS that warrant a reduction from that mid-point to account the reduced risk to KGS investors.

Q. What is the rate design proposal that affects your ROE recommendation?

A. Staff is proposing a change in rate design that will provide KGS greater assurance that it will recover its annual revenue requirement. Staff's proposal moves KGS from "partial-decoupling" to "full-decoupling". KGS's existing bundle of rate adjustment mechanisms results in KGS's revenues being partially-decoupled from its volumetric sales.[3] Regulatory Research Associates (RRA) describes most of the utilities in the proxy group used in Staff's analysis as "partially-decoupled". Three of the eight companies are rated as "fully-decoupled". Partial-decoupling through a combination of several pass-through or adjustment mechanisms is by far the norm in the industry. The proxy group I use to measure investor expectations fits this industry practice. Schedule AHG-1 summarizes the proxy group member's adjustment mechanisms reported by RRA.

Staff witness Dr. Glass discusses Staff's proposal that fully decouples KGS's annual revenues from its sales volumes. It is well accepted that full-decoupling reduces an LDC's risk of under-recovering its annual revenue requirement. Those dollars "lost" to under-recovery due to lower than modeled sales volumes (other than temperature related volumes which are recovered) are dollars shareholders will not ever recover. It is the shareholders that are exposed to this risk, which is virtually eliminated with a full-decoupling adjustment mechanism. I recommend the Commission adopt an ROE of 9.15%, which is at the lower end of my range of 9.0% to 9.5%, to compensate consumers for taking on this risk that is currently borne by shareholders. In arriving at this ROE, I did consider that three of the

[3] RRA Regulatory Focus Adjustment Clauses: A State-by-State Overview, S&P Global Market Intelligence, September 28, 2018, pp. 8, 23. https://ofchq.snl.com/Cache/672A391AFE395175532.PDF?KeyProductLinkType=2&CachePath=%5c%5cdmzdoc1%5cwebcache%24%5c&O=PDF&D=&T=&reqFrom=SNL3&Y=&DoNotRedirectTo3=1

eight proxy companies are ranked by RRA as fully-decoupled, so the observations of the proxy group captures some investor expectations of a similar rate design policy that Staff is recommending. I have not found a totally objective assessment or model to move a recommendation within the range or zone of reasonableness when considering issues such as this. For the Commission to consider in reaching a decision on this issue, they should be aware that Staff estimates a 10 basis point reduction from 9.25% to 9.15% is a $780,800 reduction in KGS's revenue requirement.

Q. OGS's SEC Form 10-K and Company presentations to investors reference several adjustment mechanisms or pass-through mechanisms that it is using. How is KGS using these mechanisms in Kansas?

A. The Commission has approved KGS's use of several alternative ratemaking mechanisms. In Kansas, KGS has a weather normalization adjustment (WNA), a purchased gas adjustment (PGA), a property tax surcharge, a pension/post-retirement benefit tracker, and a gas system reliability surcharge (GSRS).[4] Thus, without filing a rate case, KGS is able to adjust its rates for variations in weather, gas costs, property taxes, and infrastructure

[4] One Gas, Inc., SEC Form 10-K, filed February 22, 2018, p. 7-8.
Weather Normalization Adjustment – The WNA is set annually to reflect the over or under collection of the weather sensitive portion of KGS's revenue requirement from the previous year. Thus, if the prior year was colder than normal, KGS would return over collections to consumer through the WNA.
Purchased Gas Adjustment – The PGA changes monthly to collect the actual cost of gas from customers.
Property Tax Surcharge – The Property Tax Surcharge changes annually to reflect the changes in KGS's property tax expense.
Gas System Reliability Surcharge – The GSRS is calculated annually to collect capital costs related to gas system repairs and main replacements that meet the criteria set out in K.S.A. §66-2204. This mechanism enables KGS to recover capital costs on gas system reliability projects without filing a full rate case.
Pension and other Post-Retirement Benefits Tracker — Although it is not an annual true up of incurred expenses, it provides a mechanism to recover these costs that may differ from amounts set in rate cases.

replacement for qualifying projects. The following table shows the mechanisms that OGS is using in each of the states where it operates.[5]

REGULATORY CONSTRUCT

Recovery Mechanisms By State

COMPREHENSIVE RECOVERY MECHANISMS	OKLAHOMA	KANSAS	TEXAS*
Interim capital recovery	X	X	X
Weather normalization	X	X	X
Purchased gas riders (including gas cost portion of bad debts)	X	X	X
Energy efficiency/conservation programs	X		X
Pension and other Post-Retirement Benefits Trackers	X	X	X
Cost-of-Service Adjustment	X		X

** Six jurisdictions in Texas; not all mechanisms apply to each jurisdiction*

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ONE Gas

Q. Do these mechanisms reduce risk for the utility?

A. Yes, these mechanisms reduce KGS's risk because year-over-year, between rate cases, and across a series of rate cases, a gas distribution company with these and similar cost recovery mechanisms will experience cash flows that more closely reflect its expenses and revenue requirement than if it did not have such mechanisms in place. The following passage from an S&P Global Market Intelligence report on adjustment clauses is clear evidence that Staff's opinion is a widely held view by investors.

> "A defining characteristic of an adjustment clause is that it effectively shifts the risk associated with recovery of the expense in question from shareholders to customers, because if the clause operates as designed, the

[5] One Gas Investor Update, September 2018, p. 17.

> company is able to change its rates to recover its costs on a current basis, without any negative effect on the bottom line and without the expense and delay that accompany a rate case filing."[6]

The previously cited research from S&P shows that regulatory jurisdictions across the country have adopted some combination of these mechanisms for their electric and gas utilities. It would be unusual for a utility not to have any of these mechanisms in place. I relied on that report to assess the use of these mechanisms by the proxy group. KGS, like each of the proxy companies, is utilizing a combination of adjustment mechanisms to shift risk from its investors to consumers.

Financial theory tells us that any decrease in investors' required return due to the risk reduction associated with these mechanisms is built into investors' pricing of these companies' stocks. Thus, because I am analyzing investors' market expectations for the proxy group, any consideration of these mechanisms is already accounted for. Bond investors would apply their expectations when determining the cost of KGS's long-term debt.

Financial Health & Historic Returns of One Gas, Inc.

Q. Please provide a brief history of KGS's parent company; One Gas, Inc (OGS).

A. In 2014, ONEOK, Inc. received authority to spin-off all of its local distribution companies (LDC) to ONEOK shareholders, creating One Gas, Inc. (OGS), a publicly traded company

[6] RRA Regulatory Focus Adjustment Clauses: A State-by-State Overview, Russell Ernst, CFA, Principal Analyst, S&P Global Market Intelligence, September 28, 2018, p. 2. https://ofccolo.snl.com/Cache/672A391AFE395175532.PDF?KeyProductLinkType=2&CachePath=%5c%5cdmzdoc2%5cwebcache%24%5c&O=PDF&D=&T=&reqFrom=SNL3&Y=&DoNotRedirectTo3=1

consisting of LDC's in Texas, Oklahoma, and Kansas. OGS was capitalized with publicly traded common stock and publicly traded long-term debt. ONEOK, Inc. continues as a publicly traded company involved in natural gas gathering, mid-stream pipeline, and natural gas processing; it has no LDC assets; all of the LDC assets became part of OGS.

Q. How has OGS, Inc. performed as an investment?

A. By virtually every measure, OGS has performed very well for its bond and stock holders. OGS was spun-off from ONEOK with "A-/A2" (S&P/Moody's) bond rating; both ratings are well within the range of investment-grade. These ratings reflected OGS's financial strength at the time spin-off and enabled OGS to issue long-term debt at historically low interest rates. OGS's bond ratings are definitive indicators that its bond holders will receive the expected interest and principal payments in a timely manner.

ONE Gas, Inc.
Long-Term Credit Rating

	S&P	Moody's
Current:	A Stable 8/16/2017	A2 Negative 1/19/2018
Historic:	A- Outlook Positive 6/23/2016	
	A- Outlook Stable 1/9/2014	A2 Outlook Stable 1/13/2014

Source: S&P Market Inteligence

OGS customers have also benefited from the relatively low cost debt made possible by its investment-grade credit rating. Consumers also benefited from the unique circumstances of the spin-off, which completely recapitalized the newly created entity holding the LDC assets. Thus, the new entity OGS issued all of its long-term debt not only with an investment-grade rating but also at a time of historically low interest rates. The interest rates on that long-term debt are fixed and will benefit consumers from several decades to come.

Q. How have OGS stockholders fared since the spin-off from ONEOK?

A. Stockholders in OGS have enjoyed stellar returns relative to all relevant benchmarks. The following table summarizes the total returns earned by OGS, the proxy companies Dr. Fairchild and I rely on for our analyses, and the S&P 500 Index. Total return is the sum of both dividends and capital gains, and it is the measure of performance for any investment vehicle. The measurement period begins at February 3, 2014, when OGS stock began trading, and continues to September 28, 2018; a time span of about four and three-quarters years. During this time, OGS shareholders received a total return of 175% as compared to 101% for the Proxy Group and 84% for the S&P 500 Index.

Total Return Comparison
of OneGas, Inc. & LDC Proxy Group
February 3, 2014 Through September 28, 2018

One Gas, Inc.	**OGS**	**174.8%**
Proxy Group		
Atmos Energy, Corp.	ATO	126.8%
Chesapeake Utilities	CPK	140.2%
New Jersey Resources, Corp	NJR	137.2%
Northwest Natural Gas, Co.	NWN	91.6%
South Jersey Industries, Inc.	SJI	57.2%
Spire, Inc.	SR	90.2%
Southwest Gas Holdings, Inc.	SWX	69.9%
	Average	**101.9%**
S&P 500 Index		**84.3%**

Source: S&P Market Intelligence

By any measure, OGS's returns have been spectacular especially in light of the fact that OGS exhibits a beta coefficient of 0.65. This low beta coefficient is indicative of an investment that is significantly less volatile and less risky than the S&P 500 Index. Since the S&P 500 has a beta coefficient of 1.00, we would expect OGS's annual return to be roughly 65% of that of the S&P 500, as opposed to the reality of OGS's total return that is twice that of the broad index.

Q. Did the growth in OGS's earnings and dividends follow the same pattern?

A. Yes. The fundamental drivers of value for investors are the corporation's earnings per share and dividends per share. OGS exhibits exceptional historic and forecasted growth rates. The following table shows that OGS's historic EPS growth rate of 13% is well above the Proxy Group average growth rate of 2.40%.

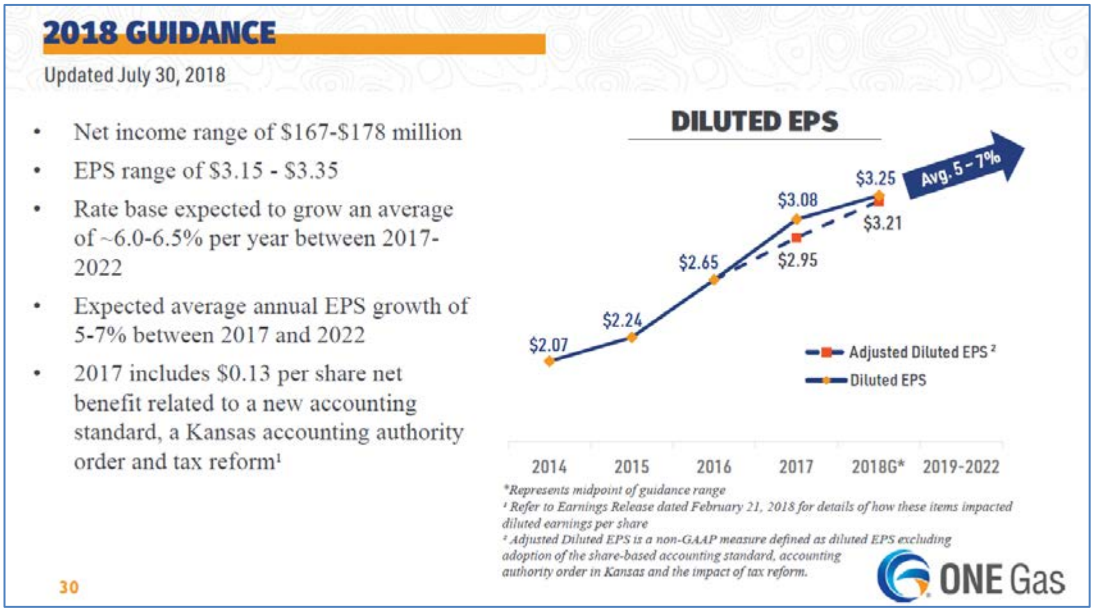
Historic Earnings Per Share 3-Year Growth Rate

		0 2014	1 2015	2 2016	3 2017	3-Yr CAGR
Atmos Energy, Corp.	ATO	$ 2.96	$ 3.09	$ 3.38	$ 3.60	6.74%
Chesapeake Utilities	CPK	$ 2.47	$ 2.68	$ 2.86	$ 2.68	2.76%
New Jersey Resources, Corp	NJR	$ 2.08	$ 1.78	$ 1.61	$ 1.73	-5.96%
Northwest Natural Gas, Co.*	NWN	$ 2.16	$ 1.96	$ 2.12	**$ 2.24**	1.22%
One Gas, Inc.	**OGS**	**$ 2.07**	**$ 2.24**	**$ 2.65**	**$ 3.02**	**13.42%**
South Jersey Industries, Inc.	SJI	$ 1.57	$ 1.44	$ 1.34	$ 1.23	-7.81%
Spire, Inc.	SR	$ 2.35	$ 3.16	$ 3.24	$ 3.43	13.43%
Southwest Gas Holdings, Inc.	SWX	$ 3.01	$ 2.92	$ 3.18	$ 3.62	6.34%
			Average excluding OneGas, Inc.			2.39%

Source:
Value-Line Investment Survey, August 31, 2018; Schedule AHG-2

**Northwest Natural Gas (NWN) EPS at 2017 reflects a loss associated with asset impairment charge. When normalized, 2017 EPS is $2.24. Reported, unnormalized EPS for 2017 is a loss of $1.94.*

OGS management is providing investors EPS guidance of 5% to 7% annual growth through 2022. This guidance was provided to investors more than six months after the Jobs Creation & Tax Reform Act was enacted, thus, it certainly encompasses all the impacts of that legislation.



Published EPS growth estimates by Value-Line are higher than OGS management's estimates and higher than all of the members of the proxy group.

Value-Line 3 to 5 Year Forecasted Growth Rates

		EPS	DPS
Atmos Energy, Corp.	ATO	7.5%	7.0%
Chesapeake Utilities	CPK	8.5%	9.0%
New Jersey Resources, Corp	NJR	9.5%	4.0%
Northwest Natural Gas, Co.*	NWN	8.8%	2.5%
One Gas, Inc.	**OGS**	**10.5%**	**10.0%**
South Jersey Industries, Inc.	SJI	9.5%	4.0%
Spire, Inc.	SR	7.5%	4.0%
Southwest Gas Holdings, Inc.	SWX	9.0%	6.5%
Average excluding OneGas, Inc.		8.6%	5.3%

Source:
Value-Line Investment Survey, August 31, 2018; Schedule AHG-2

**Northwest Natural Gas (NWN) Value-Line EPS growth forecast reported at 30.50% reflects 2017 loss associated with asset impairment charge. When normalized, 2017 EPS is $2.24. Reported, unnormalized EPS for 2017 is a loss of $1.94. Normalized EPS results in a 3 to 5 year EPS growth rate of 8.83%.*

It is virtually the same set of facts for OGS's dividend growth rates. Historically, it is more than twice that of proxy group at a 13% compound annual growth rate compared to a 5.84% growth rate of proxy group. The comparison holds for a broader group of 15 LDCs tracked by Regulatory Research Associates (S&P Global Market Intelligence) which exhibits a historical dividend growth rate of 5.2%.[7]

Historic Dividends Per Share 3-Year Growth Rate

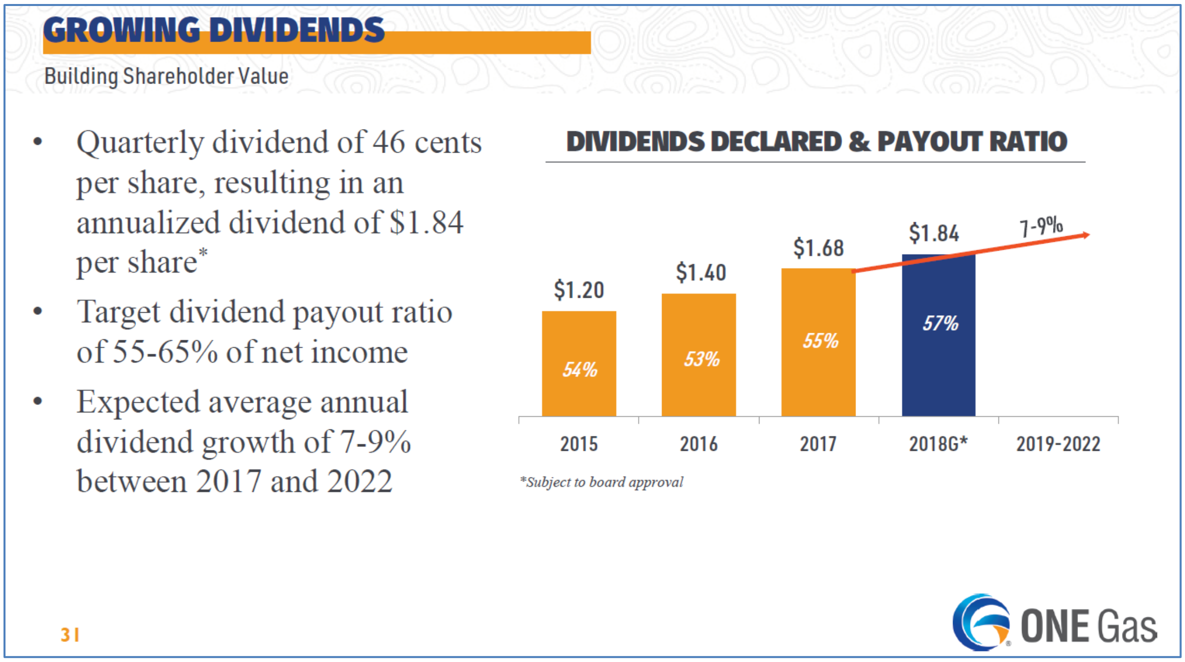
		0 2014	1 2015	2 2016	3 2017	3-Yr CAGR
Atmos Energy, Corp.	ATO	$ 1.48	$ 1.56	$ 1.68	$ 1.80	6.74%
Chesapeake Utilities	CPK	$ 1.07	$ 1.12	$ 1.19	$ 1.26	5.60%
New Jersey Resources, Corp	NJR	$ 0.86	$ 0.93	$ 0.98	$ 1.04	6.54%
Northwest Natural Gas, Co.	NWN	$ 1.85	$ 1.86	$ 1.87	$ 1.88	0.54%
One Gas, Inc.	**OGS**	**$ 1.12**	**$ 1.20**	**$ 1.40**	**$ 1.68**	**14.47%**
South Jersey Industries, Inc.	SJI	$ 0.96	$ 1.02	$ 1.06	$ 1.10	4.64%
Spire, Inc.	SR	$ 1.76	$ 1.84	$ 1.96	$ 2.10	6.06%
Southwest Gas Holdings, Inc.	SWX	$ 1.46	$ 1.62	$ 1.80	$ 1.98	10.69%
			Average excluding OneGas, Inc.			5.83%

Source:
Value-Line Investment Survey, August 31, 2018, Schedule AHG-2

Q. Does OGS expect these growth rates to continue in the future?

A. Guidance published by OGS management is not as high as its historic experience. OGS management is telling investors it is targeting a 7% to 9% annual growth in its dividends through 2022.[8] As you can see in the previous table, Value-Line's growth forecasts for OGS's dividends are, like its EPS growth projections, higher than management's guidance. Like its EPS growth expectations, Value-Line forecasts for OGS exceed that of all of the other proxy companies.

[7] RRA Financial Focus H1'18 Dividend Review, S&P Global Market Intelligence, August 30, 2018, p. 7.
[8] One Gas, Inc., Investor Update, September 2018, http://s1.q4cdn.com/589586343/files/doc_presentations/2018/09-2018-September_Investor_Update-FINAL.pdf



In summary, OGS shareholders have fared very well since 2014 and growth projections for future EPS and DPS are well above those of its peers.

Mr. Rohlfs filed testimony elaborating on his concerns about the regulatory environment in Kansas. Among his concerns are allowed returns on equity capital during the period of 2012 through 2017. Namely that, in his opinion, the allowed returns set by the Commission during the 2012 through 2017 time period show a greater divergence from the national averages than what he believed occurred in the past. He raises a concern regarding these recent ROE decisions as an exercise of regulatory discretion by the Commission that, "…seriously calls into to question whether the Commission is stacking the ratemaking deck against the utilities"[9]

Q. Do you believe that the recent ROE decisions have stacked the deck against the

[9] Rohlfs Direct, p. 13, lines 23-24, p.14, lines 1-2, 8-9.

utilities?

A. No. The returns earned by OGS shareholders and the superior financial health of OGS and other Kansas investor owned utilities does not support such a conclusion. I assume since he raised the issue as a concern for the Commission, he and KGS must be of the mindset that "the deck is stacked against the utilities" in Kansas. That is a perplexing belief given the performance of OGS over the past few years when OGS shareholders have realized total returns far above those of its peer group and the S&P 500. As a financial analyst, I believe it is likely that *if* the Commission had granted KGS a higher allowed return in the past – returns that are consistent with the level implied by Mr. Rohlfs – stockholders of OGS would likely have enjoyed a higher total return; I cannot endeavor to calculate by how much higher.

Macro-Economic Environment & Investor Expectations

Q. Is it vital for the Commission to create a forecast of the broad economy in order to determine a reasonable return for shareholders?

A. No, it is not necessary for the Commission to make a forecast of the economy's future or even adopt a specific perspective on the economy's direction or health because our focus is on the investors' required return which is a product of the investors' expectations for the economy (not the Commission's expectations). Investors' expectations for the economy are included in a Commission's cost of capital decision as long as the Commission's decision is based on market derived data such as current stock prices and interest rates. It is a well-accepted premise that our capital markets are highly efficient, where investors factor all available information into their decisions to buy and sell debt and equity securities. Those decisions establish the prices that are used in cost of capital analyses. Furthermore, rational, profit-maximizing investors are forward looking, thus, investors incorporate their own forecasts of the economy into their decisions. Consequently, the price data we rely on incorporates the investors' forecasts for the economy and those forecasts are embedded in the investors' required return that we are measuring.

Q. Do you believe commissions benefit from some discussion of the economy?

A. Yes, as it does provide some context around the market data that the Commission relies on for its cost of capital decisions.

Q. What recent issues do you find particularly noteworthy for the current economy?

A. The U.S. economy has reached a stage in the expansion where the Federal Open Markets Committee (FOMC)[10] of the U.S. Federal Reserve Board has authorized open market operations transactions to increase the Federal Funds Rate in December of 2017, March of 2018, August of 2018, and September of 2018. The current target set in September is 2.0% to 2.25%. It is widely expected that there will be continued increases authorized at future FOMC meetings until a rate of 3.0% is reached.[11] Those increases may not occur in each

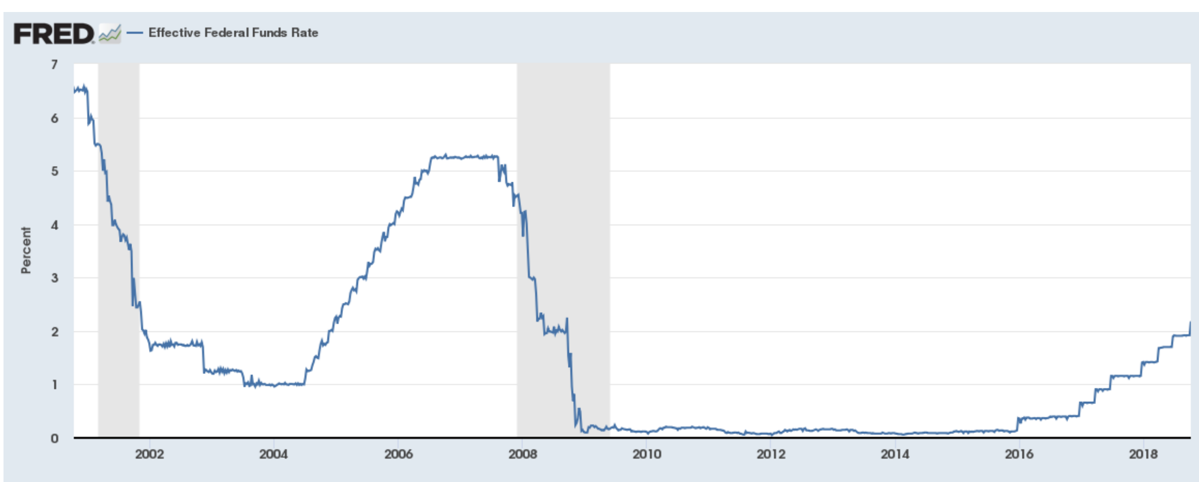
[10] The Federal Funds Rate is the rate at which funds are loaned between Federal Reserve depository institutions on an overnight basis. The Fed Funds Rate is a tool the FOMC uses to carry out its statutory objectives of achieving maximum employment, stable prices, and moderating long-term interest rates (12 U.S.C. § 225a). The first two statutory objectives are known as the "dual mandate" because of the inherent difficulty in balancing these two objectives.

[11] Economic projections of the Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, September 2018, Table 1, Projected Appropriate Policy Path—Federal funds rate: Longer-run, Median 3.0%; Central tendency 2.8% to 3.0%; Range 2.5% to 3.5%. https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20180926.pdf

successive meeting, it is dependent on the economic data at that time. This is an exercise of policy that does not directly change long-term capital costs of public utilities; rather, it is an indication that the policy makers of the FOMC believe that both the U.S. and global economies are sound and exhibiting stable growth, thus capable of withstanding gradual increases in short-term interest rates. The cost of long-term bonds and common equity are influenced by the very same indicators that the FOMC reviews. The opening paragraph of the FOMC's September statement succinctly describes its view of the economy:

> For release at 2 p.m. EDT September 26, 2018
>
> Information received since the Federal Open Market Committee met in August indicates that the labor market has continued to strengthen and that economic activity has been rising at a strong rate. Job gains have been strong, on average, in recent months, and the unemployment rate has stayed low. Household spending and business fixed investment have grown strongly. On a 12-month basis, both overall inflation and inflation for items other than food and energy remain near 2 percent. Indicators of longer-term inflation expectations are little changed, on balance.

The following graph depicts the FOMC's actions over the past two recessions.



Statements and projection material from the September meeting indicate continued long-run projections of real GDP growth in the range of 2.0% annually and a targeted inflation rate of 2.0%; both forecasts are consistent with FOMC members' forecasts from last year.[12]

Capital Structure: KGS's 62% Equity Ratio is Atypical of the Utility Industry

Q. Please discuss the capital structure that KGS proposes to use in its rate of return (ROR).

A. KGS proposes to use OGS's actual capital structure to calculate its ROR. As shown in the previous tables, KGS requests an ROR based upon an equity ratio of 62.19%.[13] Dr. Fairchild is the Applicant's primary witness for the ROR and its components. Janet Buchanan also testified supporting the capital structure component of the ROR.

Q. Do you have any adjustments to KGS's capital structure?

A. I propose setting KGS's ROR using an equity ratio of 55%, as opposed to the 62% in KGS's Application. My investigation of KGS's capital structure found that its proposed capital structure is atypical of the industry and an added cost of about $4.4 million annually for KGS customers.

Q. Why is it important for the Commission to adopt a hypothetical capital structure for OGS's ROR?

A. OGS's atypically high equity ratio unnecessarily increases the revenue requirement without demonstrating that the additional cost creates a commensurate level of benefits for

[12] Economic projections of the Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy, September 2018, Table 1. https://www.federalreserve.gov/monetarypolicy/files/fomcprojtabl20180926.pdf

[13] Section 7 of Application.

consumers. Equity capital requires a higher return than debt because equity holders bear more risk than bond holders and the cost of equity capital is grossed-up for income tax expenses. The capital ratios have a direct effect on the ROR and ultimately the revenue requirement.

Q. Please quantify for the Commission the additional cost you believe is tied to KGS's proposed capital structure.

A. The table below is an estimate of the revenue requirement impact of KGS's proposed capital structure. In this calculation, I changed the equity ratio from the 62% proposed by KGS to a 55% level that is more in line with that of the proxy companies selected by Dr. Fairchild. The change in capitalization results in a 72 basis point reduction in the ROR resulting in a $4.4 million reduction in revenue requirement.

Revenue Requirement Change Associated with Equity Ratio Change from 62% to 55%

62% Equity Ratio		
Rate Base from Application	$	1,016,084,260
KGS Proposed ROR with 62% Equity		7.71%
Operating Income	$	78,315,662
55% Equity Ratio		
Rate Base from Application	$	1,016,084,260
KGS ROR with 55% Equity Ratio		7.27%
Operating Income	$	73,889,292
Revenue Requirement Change Associated with Equity Ratio Change From 62% to 55%	$	4,426,371

Source: KGS 18-KGSG-560-RTS, Schedule 3-A, Line 5
Assumes KGS's cost of debt and equity

Although KGS witnesses discuss the benefits of its high equity ratio, at no point do they attempt to quantify those benefits nor do they discuss the additional cost borne by rate payers of having a capital structure that is significantly different then its peers.

Q. What is KGS's rationale for the capital structure?

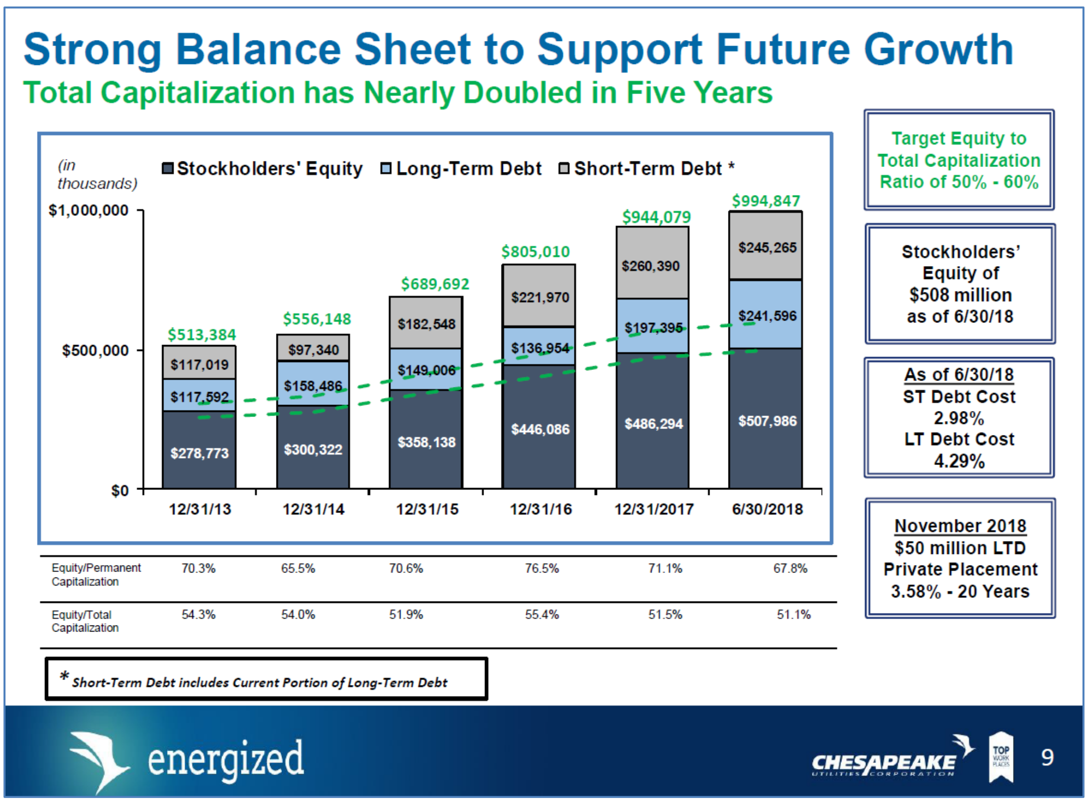
A. Two KGS witnesses testify to support its capital structure; Dr. Fairchild and Janet Buchanan. Dr. Fairchild contends that KGS's equity ratio should be used in the ROR because it is within the industry norms of gas utilities based on his evaluation of data published by the American Gas Association[14] and his LDC proxy group;[15] an argument that I will prove is incorrect. Dr. Fairchild also asserts that the 62% equity ratio is necessary to maintain OGS's financial integrity and ability to attract capital.[16] Witness Buchanan goes further and suggests that a 62% equity ratio is needed to maintain investment-quality credit metrics;[17] also an argument that I will prove is incorrect. So, in general terms, the Applicant's rationale for the 62% equity ratio is that it is within the industry norms and it is necessary to support OGS's investment-quality credit ratio.

Q. Do you agree with their rationale?

A. No. The argument that KGS's 62% equity ratio is within the industry norms is not accurate when studied beyond a superficial level of review. Schedule BHF-2 contains the capitalization ratios of Dr. Fairchild's proxy group reported by Value-Line Investment Survey. As reported by Value-Line, the proxy group has a range for equity ratios of 50% to 71.1%. There is only one outlier to this table, Chesapeake Utilities (CPK), with an equity

[14] Fairchild Direct, 18-KGSG-560-RTS, filed June 29, 2018, p15.
[15] Fairchild Direct, 18-KGSG-560-RTS, filed June 29, 2018, p15 & BHF-2.
[16] Fairchild Direct, 18-KGSG-560-RTS, filed June 29, 2018, p16, lines 11-14.
[17] Buchanan Direct, 18-KGSG-560-RTS, filed June 29, 2018, p. 26, lines 7-9.

ratio of 71%. That outlier skews the average and dramatically broadens the range of the observations. Chesapeake's equity capitalization is so far removed from the other LDCs that it warrants, or rather demands, that an analyst look deeper at that number. A review of Chesapeake's capitalization beyond merely copying down observations from Value-Line casts great doubt on Dr. Fairchild's argument. A review of Chesapeake's investor presentations reveals that its equity ratio is not 71%; rather it is 51%.[18] The following slide was produced by Chesapeake's management describing the utility's capitalization plan.



Chesapeake's management is using a combination of short-term and long-term debt as its on-going debt financing. Granted, this is not a typical approach for an LDC, but it is clearly

[18] Chesapeake Utilities: Second Quarter Earnings Conference Call, Friday August 10, 2018, Dover, DE; p. 9. http://investor.chpk.com/phoenix.zhtml?c=80276&p=quarterlyearnings

different path that is very different from the 71% equity ratio that Dr. Fairchild depends on to support his position. Chesapeake has a history of a greater reliance on short-term debt than other utilities. Additionally, Chesapeake's management clearly states that it targets an equity ratio in the range of 50% to 60%. Thus, it not accurate to view the industry range for equity ratios to be as high as 71%. In the following tables, I have corrected Dr. Fairchild's error to more accurately reflect the proxy group's capital ratios.

LDC Proxy Group Capital Structure Ratios
Schedule BHF-1; page 1 of 1

As Filed with Direct Testimony

	L.T. Debt	Com Equity
Atmos Energy	44.0%	56.0%
Chesapeake Utilities	28.9%	71.1%
New Jersey Resources	44.6%	55.4%
Northwest Natural Gas	47.9%	52.1%
South Jersey Industries	48.5%	51.5%
Southwest Gas	49.8%	50.2%
Spire	50.0%	50.0%
Average	44.8%	55.2%
Minimum	28.9%	50.0%
Maximum	50.0%	71.1%

Source:
The Value-Line Investment Survey, June 1, 2018
Schedule BHF-1, page 1 of 1

The next table contains the accurate account of Chesapeake's capitalization ratios. With this correction to Dr. Fairchild's error, the high end of the observations is 56%, 600 basis points less than KGS's proposed equity ratio of 62%.

LDC Proxy Group Capital Structure Ratios
Schedule BHF-1; page 1 of 1

Correcting to Reflect Capitalization Policy of Chesapeake Utilities

	L.T. Debt	**Com Equity**
Atmos Energy	44.0%	56.0%
Chesapeake Utilities	**49.0%**	**51.0%**
New Jersey Resources	44.6%	55.4%
Northwest Natural Gas	47.9%	52.1%
South Jersey Industries	48.5%	51.5%
Southwest Gas	49.8%	50.2%
Spire	50.0%	50.0%
Average	47.7%	52.3%
Minimum	44.0%	50.0%
Maximum	50.0%	56.0%

Source:
The Value-Line Investment Survey, June 1, 2018
Schedule BHF-1, page 1 of 1

Second Quarter Earnings Conference Call, August 10, 2018, Chesapeake Utilities, p. 9.

With this correction, it is very apparent that OGS's equity ratio is not consistent with the industry.

Q. Does the data from the American Gas Association (AGA) support the use of KGS's equity ratio?

A. It is not possible to know if the AGA data supports OGS's equity ratio because the AGA data is aggregated. That is, it is not delineated by utility or operating company and we do not know what utilities are included in the calculation. Since it is not clear what companies are in these aggregated numbers, it is impossible to know if there are any outliers (like

Chesapeake Utilities discussed earlier) that need to be closely evaluated.[19] Given the error we just corrected and the large impact of correcting that error, it is very important to review precisely what is contained in the AGA's aggregated balances.

Q. With respect to Dr. Fairchild's arguments that industry financial data support the use of KGS's equity ratio of 62% in the ROR, what do you conclude?

A. The industry data that Dr. Fairchild presented does not support the use of KGS's 62% equity ratio. First, we cannot know if the AGA data was drawn from LDCs that are similar to KGS or OGS. Second, the capitalization data of Dr. Fairchild's proxy companies, in fact, supports using a lower equity ratio than 62%. These companies were specifically chosen by Dr. Fairchild because each one exhibits financial and operational similarities to KGS and OGS and none of them exhibit an equity ratio as high as 62%. His own proxy group supports an equity ratio of not more than 55%. Moreover, on a broad view of the industry, the recent rate cases decisions reported by RRA, the average equity ratio in rate cases has been 49.61% (27 observations for the first nine months of 2018); the highest of those observations is 56%.

Q. Is a 62% equity ratio necessary to support an "investment-grade" credit rating for OGS as alleged by KGS witnesses?

A. Undoubtedly, all other elements being equal, a higher equity ratio is beneficial to credit ratings as it results in lower fixed payments competing for the company's cash-flow. But KGS's Janet Buchanan is dramatically overstating the situation when she asserts that, "To

[19] KCC DR #175, 18-KGSG-560-RTS.

maintain investment quality credit metrics and the access to lower cost debt those metrics enable, the Company will need to maintain its existing capital structure."[20] The simple fact is that there is no evidence at all that OGS is at risk of losing an investment-grade rating nor is there any evidence that a 62% equity capital structure is necessary to maintain an investment-grade bond rating. What she fails to mention in her testimony to the Commissioners is that OGS would have to fall five notches on the credit rating scales for it to lose its investment-grade rating which is a drop from its current A/A2 to a rating of BB+/Ba1. There is no evidence that such a vast drop is expected.

The testimony of Dr. Fairchild on OGS's bond rating is somewhat more accurate than Janet Buchanan's, only in that he does not paint such a catastrophic outlook for OGS bond rating. Dr. Fairchild testifies that the 62% equity ratio *may* prevent a ratings downgrade (my emphasis).

> These capital structure ratios were designed to secure a credit rating similar to other LDCs when ONE Gas was spun-off from ONEOK and ***may*** forestall a bond rating downgrade precipitated by the recent passage of the TCJA.[21] (emphasis added)

Dr. Fairchild alludes to the fact that the passage of the Tax Cuts and Jobs Act (TCJA) has negatively affected OGS's credit rating. That is true, but not the complete picture. First, Moody's reported that even prior to the passage of the TCJA, OGS's credit metrics were weak relative to its A2 bond rating.[22] Later that month when the TCJA became law, Moody's changed the outlook of OGS *and* 23 other utility companies from stable to

[20] Direct Testimony of Janet Buchanan, 18-KGSG-560-RTS, p. 26, lines 7-10.
[21] Fairchild Direct, 18-KGSG-560-RTS, filed June 29, 2018, p. 16, lines 19-23.
[22] One Gas, Inc. Update to Credit Analysis, Credit Opinion, January 8, 2018, Moody's Investor Services, p. 2.

negative. These were not down-grades, they were changes in outlook. Three utilities in Dr. Fairchild's proxy group, in addition to OGS, also were among the 23 given negative-outlook revisions. A negative outlook does not lower the credit rating; the negative-outlook signals that downward change may be in the future. The following table illustrates OGS's ratings history since its spin-off from ONEOK in 2014.

OneGas, Inc.
Long-Term Rating History

	S&P	**Moody's**
Current Ratings:	A Outlook Stable 8/16/2017	A2 Outlook Negative 1/19/2018
Rating History:	A- Outlook Positive 6/23/2016	A2 Outlook Stable 1/13/2014
	A- Outlook Stable 1/9/2014	

Source: S&P Global Market Intelligence (a.k.a. SNL.com)

Q. With respect to OGS's credit rating, what do you believe are the important points for the Commission?

A. The key point for the Commission is that even if the negative-outlook designation becomes a down-grade, OGS's credit rating will remain well within the realm of investment-grade and similar to that of other LDCs. The table below shows the ratings scale, OGS's placement in that scale, and the placement of each of Dr. Fairchild's proxy group.

	Moody's	**S&P**	**Distribution of Bond Ratings**		
Investment Grade	Aaa	AAA			
	Aa1	AA+			
	Aa2	AA	NJR		
	Aa3	AA-			
	A1	A+	NWN		
	A2	**A**	**OGS**	ATO	
	A3	A-	NWN	SR	
	Baa1	BBB+	NJR	SWX	SWX
	Baa2	BBB	SJI	SR	
	Baa3	BBB-			
Less Than Investment Grade	Ba1	BB+			
	Ba2	BB			
	Ba3	BB-			
	B1	B+			
	B2	B			
	B3	B-			
	Caa1	CCC+			
	Caa2	CCC			
	Caa3	CCC-			
	Ca	CC			
		C+			
		C			
	C	D			

As you can see in this table, OGS is firmly in the range of investment-grade ratings. And that will continue to be true even if the negative-outlook designation by Moody's becomes a downgrade from A2 to A3.

Q. Are other regulators using a 62% equity ratio to establish the revenue requirements of OGS's LDC units?

A. No. The Oklahoma Commission is not using OGS's actual capital structure to compute its revenue requirement. Under the current rate mechanism used in Oklahoma, the capital structure began at a 60.5% equity ratio and declines by 1% per year ending at 56% for the year 2020 (the 2020 year is based on a review of 2019 financial data).[23]

[23] One Gas, Inc., SEC Form 8-K Filed September 20, 2018, One Gas, Inc. Investor Update, September 2018, p. 45. https://platform.mi.spglobal.com/web/client?auth=inherit#news/docviewer?mid=88636260&KeyProductLinkType=2

Rebuttal to Dr. Fairchild's proposed 10.00% Cost of Equity

Q. Please summarize your disagreements with Dr. Fairchild's cost of equity analysis and recommendations.

A. My primary points of disagreement revolve around Dr. Fairchild's focus on short-term growth rate forecasts that he uses in both the DCF and CAPM analyses. These short-term growth forecasts are far greater than what is expected by investors over the longer time horizon demanded of these two financial models. Second, his application of a risk-premium additive in the CAPM under the guise of OGS being a "small" company is unnecessary as it is widely refuted by financial research. These two issues serve to raise his cost of equity estimates well above the market requirements. I will demonstrate that these two errors are inconsistent with investor behavior and expectations. Correcting for these errors results in cost of equity estimates that are much lower than KGS request and supportive of my recommendation of 9.15%.

Correction to Dr. Fairchild's DCF & CAPM

Discounted Cash Flow Model (Fairchild p.32)		
Dividend Yield	2.80%	
Short-term Growth Est.	6.25%	7.25%
Long-term nGDP Growth Est.	4.28%	
Average Growth Rate	5.27%	5.77%
Required Return	8.07%	8.57%
Capital Asset Pricing Model (Schedule BHF-7)		
	Historic	Forecasted
Market Return	12.10%	12.73%
LT U.S. Gov Bond Return	5.00%	3.13%
RP	7.10%	9.60%
LDC Proxy Group Beta	0.74	0.74
Proxy Group Rp	5.25%	7.10%
Rf (yield on 30Y Bond)	3.13%	3.13%
CAPM	8.38%	10.23%
~~Size Premium~~	~~1.36%~~	~~1.36%~~
	9.74%	11.59%

Q. Explain how Dr. Fairchild estimates the expected growth rates in his financial models.

A. In his DCF analysis, Dr. Fairchild applies forecasted three to five-year earnings growth rates as the expected growth rate of future dividends. Based on the observations of these forecasts, he selects a range of 6.25% to 7.25% for the forecasted annual growth rate in his DCF model.[24] All of the observations are shown in Schedule BHF-4 comprised of a range from 5.00% to 8.40%.[25] The problem is not in the growth rate forecasts themselves; the problem lies in how Dr. Fairchild uses these growth rates. He does not use the three to five-year forecasts for just the first three to five years of the model; he incorrectly assumes that the three to five-year growth forecasts will continue into infinity. Short run growth estimates should not be projected into perpetuity because, in the long run, investors can

[24] Fairchild Direct, p. 32, lines 5-7.
[25] Fairchild Direct, Schedule BHF-4.

expect that any company's growth to be no higher than that of the overall economy frequently measured via nominal Gross Domestic Product (nGDP). My analysis combines both short and long-run growth estimates to produce a more appropriate measure of investors' expected growth rates.

Q. Is there an indicator that the three to five-year forecast should not be thought of as the growth rate into infinity?

A. Yes, it is common practice to view earnings growth forecasts of individual companies in the context of the broad economy. As I discussed later, economic growth for the U.S. nGDP is forecast to be 4.28% in the long-run. Including the long-run nGDP forecast in the DCF calculations reduces Dr. Fairchild's required return estimate by more than 100 basis points. The growth estimate has a one for one effect on the resulting cost of equity estimate; thus, Dr. Fairchild's cost of capital estimate is overstated by that same amount. Dr. Fairchild fails to even try to reconcile his 6.25% to 7.25% growth estimate with the long-run forecast of 4.28% for the nGDP.

Q. Where else in his analysis does Dr. Fairchild use overly optimistic growth forecasts?

A. Dr. Fairchild incorporates three to five-year earnings growth forecasts in his forward looking CAPM analysis. The earnings growth forecasts applied in his CAPM analysis are significantly greater than even those used in his DCF analysis. Needless to say, these estimates are unrealistic and not representative of investors' long-term expectations.

Q. Where is the growth rate applied in the CAPM?

A. In Dr. Fairchild's CAPM analysis, the three to five year annual earnings growth rate estimate is used to calculate the market-return (Rm) used in the CAPM. Thus, the growth rate forecast is a couple layers deep into the CAPM equation, but, nonetheless, it has a significant influence on the end result of the CAPM. His earnings growth rate forecast of 10.35% is used to estimate the expected return on the S&P 500 Stock Index. The expected return on the market index becomes the foundation for the calculation of the individual company or proxy group of companies. Since the foundation of the CAPM study, the expected market return (Rm), does not comport with capital market theory and realistic valuation practices, the CAPM analysis is not accurate.

Q. What is the Rm supposed to represent?

A. In the CAPM, the input Rm is the return expected by investors through an index of the stock market such as the S&P 500 Index. Dr. Fairchild estimated that the S&P 500 will return (Rm) 12.75% annually for investors in the future.[26] This forecast for the S&P 500 is his own forecast, and he does not provide any corroborating studies indicating that market participants expect returns in excess of 12%. I have not come across any analytical work that could support such a high return on common stocks for the coming decades.

Q. How does he arrive at a forecast of a 12.75% annual return from the S&P 500?

A. Dr. Fairchild performs a DCF analysis on the companies in the S&P 500 Index that pay an annual dividend. The calculation requires a dividend yield and a long-run growth rate estimate to apply to each company's dividends. His analysis incorporates expectations that

[26] Fairchild Direct, p. 35, Schedule BHF-7.

earnings of the S&P 500 Index will grow at annual rate of 10.35% - more than double the expected growth rate of the nation's economy.[27] That is an assertion that the Commission needs to reflect on before it accepts Dr. Fairchild's recommendation; his cost of capital study assumes that the 406 largest corporations will grow at a rate that is more than twice the rate of the U.S. economy. The result of Dr. Fairchild's CAPM is wholly dependent on this extra-ordinary event. Averaging forecasted annual nGDP growth into the growth rate, which is a much more realistic expectation for long-term growth, would reduce the expected market return from 12.75% to 9.70%[28] and result in a cost of equity estimate of 9.35%, rather than 11.59% argued by Dr. Fairchild. A more realistic growth estimate applied to Dr. Fairchild's CAPM analysis results in a cost of equity estimate that is consistent with Staff's range.

Q. Did you uncover any additional evidence that Dr. Fairchild's S&P 500 growth forecast does not reflect reality?

A. Yes, in his calculation of his forecasted market return for the S&P 500, Dr. Fairchild eliminated all negative growth rates from the calculation. That is to say, Dr. Fairchild only included positive earnings growth estimates. Thus, it is no wonder that his S&P 500 is so much higher than the long-term growth rate of the national economy.

[27] Fairchild Direct, p. 35, Schedule BHF-7.
[28] 10.35% forecasted earnings growth + 2.37% dividend yield (from Schedule BHF-7) = 12.75% Averaging the 10.35% short-term forecasted earnings growth with the long-run nGDP growth forecast of 4.28% lowers the forecasted market returns from 12.75% to 9.70%.

Dr. Fairchild's CAPM Adjustment for Small-Size Companies is Not Supported by Studies of the Financial Data

Q. What are Dr. Fairchild's findings from his CAPM analyses?

A. Dr. Fairchild discusses his CAPM analyses at pages 35 and 36 of his direct testimony, and the calculations appear in Schedule BHF-7. On that schedule, the cost of equity capital is in the range of 8.38% to 10.23%, prior to his small company risk premium. Dr. Fairchild adds a small company risk premium of 136 basis points to that range.

Q. What is your position on the small-size risk premium?

A. Staff has consistently opposed this type of adjustment because it is not a widely accepted premise in public utility finance (or even finance generally) that size as measured by capitalization is a determinant of risk. The data used to support the notion of a small company risk premium has shown that there is a survivorship bias. The survivorship bias stems from the fact that a larger proportion of small companies cease to exist more often than larger companies cease to exist. The studies supporting a small company premium frequently fail to measure the full extent of the loss incurred by investors in those small companies that disappear. Accurately measuring those losses has been shown to eliminate the small company premium.

Empirical research by Tyler Shumway and Vincent A. Warther concluded that no such size-premium has ever existed; rather, the data used to calculate the premium does not accurately measure the returns of small-cap stocks.[29] These researchers determined the historic data understates the negative impact of delisting a stock. Stocks are delisted from exchanges when they merge or are acquired by other companies. When delisting occurs under those circumstances, the annual return for the newly merged or acquired company continues to be calculated and continues to be tracked as part of the market indexes. These positive events do not create a problem for measuring returns, as the entity continues to exist and remains part of the market averages with pricing data reported going forward from the delisting date, just under a different name. Stocks are also delisted when their share price falls below a minimum set by the exchange where they trade or if they enter bankruptcy. When these negative events occur, those companies' stocks cease to trade on exchanges and there ceases to be pricing data that captures the full extent of the price decline that continues after delisting from the exchange. Eventually, the company may disappear, which causes a 100% loss for its investors, which is not captured in the historic data. Research found that historic returns data have not done a good job of accurately tracking or estimating the loss that investors incur with these negative events.

These negative events occur almost exclusively with small companies, thus the delisting bias has inflated the historic returns of small companies. The failure to accurately track or estimate negative events has created an appearance that small companies experience higher returns than the shareholders' actual returns. So, it is not that smaller companies have consistently earned a higher return than larger companies; the problem has been with the data used to compute the historic returns experienced by small companies.

[29] The Delisting Bias in CRSP's Nasdaq Data and Its Implications for the Size Effect, Tyler Shumway and Vincent A. Warther, The Journal of Finance, vol. LIV, No. 6, December 1999, pp. 2361-2378.

Dr. Fairchild's Risk Premium Study is Inapplicable to KGS

Q. Do you agree with Dr. Fairchild's Risk Premium?

A. No, I disagree with using this type analysis in setting allowed returns because it has several weaknesses that cast doubt on the applicability of the results to any specific utility. Although the data provides an interesting view of regulatory and economic history, I recommend the Commission disregard it in setting the allowed return because there is no screening involved to find companies of comparable risk to KGS, an integral element to any cost of capital study as noted in the Court rulings discussed later.

Q. How is the risk premium study constructed?

A. Dr. Fairchild's risk premium analysis is based on observations of allowed returns granted by state regulatory commissions to natural gas utilities in litigated cases relative to the yield on utility bonds using data from 1980 through the first quarter of 2018. Thus it is more a measure of state regulatory commissions' behavior as opposed to investor behavior.

Q. Is the reasonable return on equity for KGS equal to the return granted to other utilities in other jurisdictions over those many years?

A. We cannot know for sure because we do not know how the risk of the gas utilities in those historic rate cases compares to KGS's risk. The Commission needs to be cautious in using a risk premium study like Dr. Fairchild has proposed because it does not comport with the framework set out in the Hope and Bluefield decisions, as there is no comparison of the risk of the natural gas utilities in that historic data to the risk of KGS today.

Q. Have regulatory policies evolved since 1980 and altered the industry's risk profile?

A. Yes, I believe it has changed over this 35 year time period, and Dr. Fairchild's risk premium analysis fails to recognize these changes in the industry. Merely using an interest rate relationship to allowed returns does not measure changes in risk. For instance, rate design and trackers/riders/pass-through mechanisms have evolved over the past three decades; these mechanisms lower the risk of utilities by shifting risk to the consumer. The percentage of the revenue requirement recovered through the customer charges in Kansas has also increased over these decades resulting in a less volatile stream of revenues to the utility. These changes in risk are not addressed in Dr. Fairchild's risk premium study.

The Commission should also consider that the data was gathered from a unique period of time (1980 to 2018), a period of time when capital costs declined substantially and in a consistent manner with only a few, brief upticks during those decades. This measurement period begins with the early 1980s, an era of the highest capital costs in more than a century.

The following chart provides a long-term view of interest rates through the yield on the

Moody's Baa Corporate Bonds; the trend in interest rates on this instrument is indicative of the general trend in capital costs over the past century.

Staff recommends the Commission not place any weight on the risk premium analysis because the measurement period consists only of a unique era of declining capital costs. Furthermore, in his attempt to predict a reasonable return, Dr. Fairchild's model relies on just one variable. When in reality, an accurate estimate of a fair return demands that policy makers evaluate many other variables designed to screen for data that is relevant and consistent with KGS's risk profile.

Dr. Fairchild's Comparable Earnings Analysis is Irrelevant

Q. Dr. Fairchild presents a "comparable earnings test" as a means to estimate KGS's required return. Is this a reasonable methodology to arrive at an estimate?

A. The comparable earnings analysis is not a reasonable method of estimating investors' required return because it does not meet the Hope & Bluefield standards. The inputs to this type of analysis are not derived from financial markets or investors' transactions in markets (such as the purchase of a stock or bond at an exchange at a market determined price). Rather, this data is purely accounting or book return information based on historic levels of equity in the enterprise and the amount of earnings calculated from specific accounting rules which do not reflect the actions of investors in the capital markets as they react to changes in the economy and potential returns from alternative investments.

Q. Should stockholders expect to earn the returns forecasted by Value-Line?

A. No, as I said, the forecasted returns on equity shown in Schedule BHF-10 are book returns. The calculations incorporate the accounting record's summation of OGS's equity capital. Investors in OGS do not purchase OGS common stock at anything remotely close to the book value of OGS common equity. Rather, investors in OGS purchase its common stock at market value. OGS common stock trades at close to $79.87 per share, while its book value is $37.47.[30] Investors are paying a significant premium above book value (213%); they completely understand that they can expect to earn a market return less than that forecasted as a book return. For these reasons, I urge the Commission to ignore these comparisons to book returns. To the best of my knowledge, the Commission has never relied on this approach for setting an allowed return.

Cost of Debt

Q. Do you propose any adjustments to KGS's cost of debt?

[30] Value-Line Investment Survey, One Gas, Inc., August 31, 2018.

A. No. Staff accepts the cost of debt in Section 7 of the Application.

Staff's Cost of Equity Analysis

Q. Please summarize the results of your cost of equity analysis.

A. Staff recommends that the Commission authorize a 9.15% return on KGS's equity capital (ROE) the lower-end of a range from 9.0% to 9.5%. The following table summarizes the cost of equity estimates from my study in this Docket; the details of each financial model appears later in my testimony. I relied on a discounted cash flow (DCF) model, a variation of the DCF model known as an internal rate of return (IRR) analysis and the capital asset pricing model (CAPM). These are the models I typically use to estimate a utility's required return on equity. The results in this table are based on capital markets data from September 25, 2017, through September 17, 2018. The following table is a summary of the results from those models.

Summary of Staff's Cost of Equity Estimates
18-KGSG-560-RTS

Discounted Cash Flow Analyses	Mean	Low	High
Two-Stage Growth DCF Model: Based on the Average of Short-Term Growth Forecasts & Long-Term nGDP Forecasts	8.47%	8.18%	8.76%
Internal Rate of Return or Multi-Stage DCF Analysis: Using Short-Term Growth EPS Growth & Long-Term nGDP Forecast	7.65%	6.66%	9.16%
Capital Asset Pricing Models			
Based on Historical Return Data, gathered from 1926 - 2017, Reported by SBBI, Duff & Phelps	9.03%	8.52%	9.55%
Based on Forecasted Return Data Published by J.P. Morgan Asset Management (2018 edition)	6.11%	5.82%	6.40%

Q. For a point of comparison, please summarize return on equity decisions by this Commission and Commissions across the country?

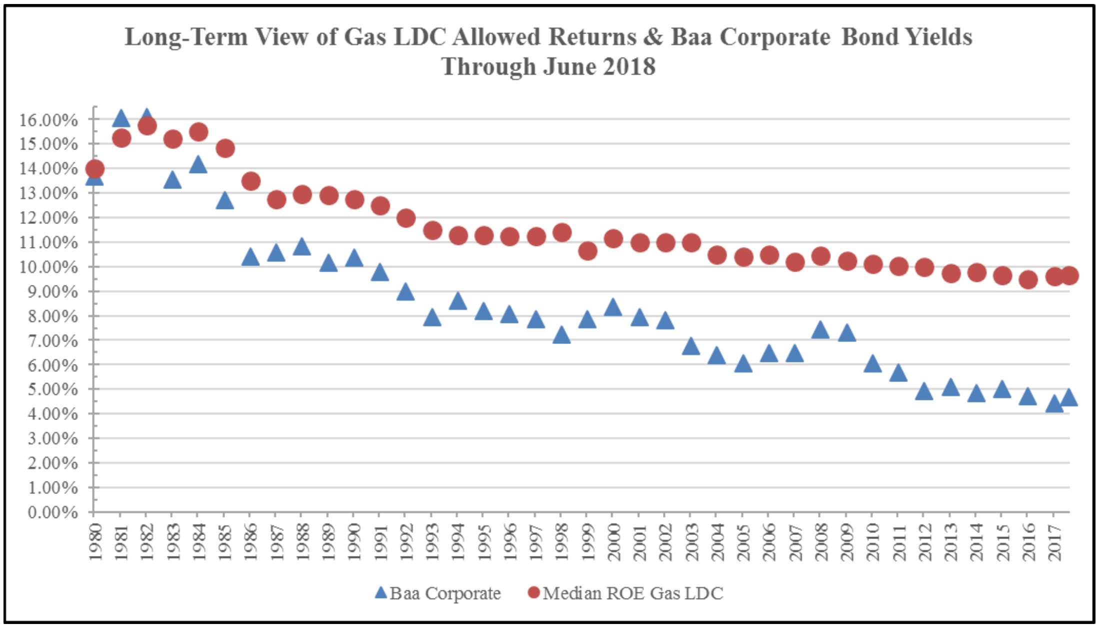
A. The first table contains allowed return on equity decisions made by this Commission in litigated rate cases. As a point of reference to the prevailing capital markets at that time, I included the yield on the Baa rated corporate bonds as of the month of the Commission's decision. In addition to these Commission determinations, in recent dockets, Staff, intervenors, and evergy, Inc. reached an agreement to set rates using a return on equity of 9.30% for Westar Energy (18-WSEE-328-RTS) and Kansas City Power & Light, Co. (18-KCPE-480-RTS). The Commission issued an Order accepting the terms of that agreement in 18-WSEE-328-RTS on September 27, 2018.

Commission Determined Allowed ROEs -- Kansas Utilities

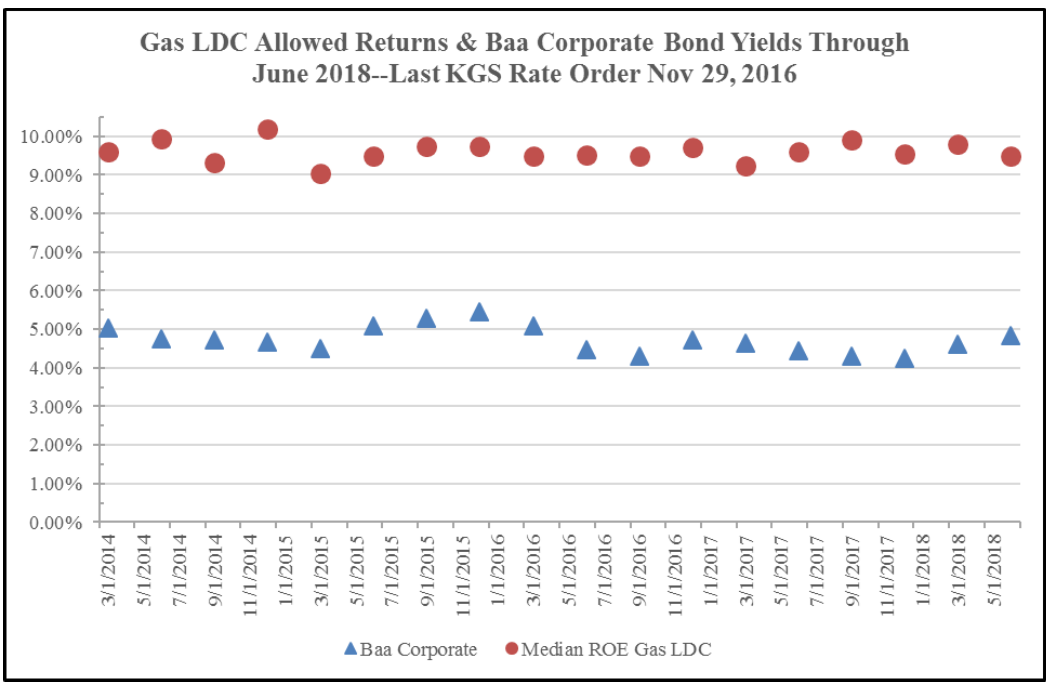
Company	Docket	Order Date	Requested ROE	Ordered ROE	Baa Bond Yield
Kansas City Power & Light	15-KCPE-116-RTS	9/10/2015	10.30%	9.30%	4.86%
Atmos Energy Corp.	14-ATMG-320-RTS	9/4/2014	10.53%	9.10%	4.89%
Kansas City Power & Light	12-KCPE-764-RTS	12/13/2012	10.40%	9.50%	4.80%
Kansas City Power & Light	10-KCPE-415-RTS	11/22/2010	10.75%	10.00%	5.56%
Westar Energy Inc.	05-WSEE-981-RTS	12/28/2005	11.50%	10.00%	6.10%
Westar Energy Inc.	01-WSRE-436-RTS	7/25/2001	12.75%	11.02%	7.97%
Kansas Gas Service Co.	193,305-U	4/15/1996	12.00%	10.50%	7.77%

Sources: SNL/RRA, Federal Reserve Bank of St. Louis, FRED

The following chart is broader in both the time period and reporting scope. It indicates the median return on equity granted in fully litigated rate cases across the nation from 1980 through June of 2018. As a point of reference to the prevailing capital markets, I included the average yield to maturity of Baa corporate bonds.



The next chart highlights a shorter time period, the last four years from early 2014 through June of 2018. Compared to the decline seen in the chart of the long-term changes, the past four years show a plateau in the median allowed return granted.



Q. How does Staff's recommendation compare to the returns available on other investments?

A. The following table shows that Staff's recommendation of a 9.25% mid-point ROE allows investors a risk premium over less risky debt investments.[31] These types of income producing securities are viewed as alternatives to investments in utility stocks because, like utility stocks, bonds offer stable valuations and higher current income, relative to the equity market. Risk premiums vary over time and across market conditions; thus, there is not a benchmark risk premium or formula that sets a reasonable return on equity at a given interest rate. The Commission has not set a definitive spread over bond yields, but the Commission's Order in 15-KCPE-115-RTS (15-116) noted that its decision allowed KCP&L a risk premium of 525 basis points over the yield on its long-term debt.[32] At that time, just as now, KCP&L and OGS have investment-grade bond ratings. In that Docket, Staff argued that the recommended ROE resulted in a 525 basis point risk premium over the bond yield and that return was reasonable as it offered stockholders a higher return than available on the lower risk debt securities. The Commission agreed and applied Staff's risk premium to arrive at an allowed return for KCP&L. The 9.25% ROE is consistent with the Commission's rationale in the 15-116 Order because it allows for a risk premium in excess of 500 basis points over the yields on OGS's long-term bonds.

[31] As discussed earlier, Staff's rate design proposal reduces the utility's risk and requires a movement downward from the mid-point.

[32] Order issued on KCP&L's Application on Rate Change, 15-KCPE-116-RTS, September 10, 2015, para. 34.

KCC Staff's Risk Premium Over Fixed Income Yields
Based on a 9.25% Return on Equity
Fixed Income Yield Observations October 2017 through September 2018
18-KGSG-560-RTS

	30 Year (1) Treasury Bond	Utility Bonds (2) A/A	Utility Bonds (2) Baa/BBB	OneGas (3) Bonds YTM
Oct-18	3.10%	4.33%	4.70%	4.32%
Nov-18	3.05%	4.23%	4.57%	4.18%
Dec-18	3.00%	4.23%	4.56%	4.19%
Jan-19	3.04%	4.25%	4.60%	4.28%
Feb-19	3.15%	4.27%	4.62%	4.23%
Mar-19	3.07%	4.15%	4.48%	4.11%
Apr-19	3.10%	4.12%	4.45%	4.04%
May-19	3.11%	4.14%	4.42%	4.04%
Jun-19	2.86%	3.87%	4.14%	3.84%
Jul-19	2.77%	3.80%	4.08%	3.72%
Aug-19	2.81%	3.84%	4.11%	3.87%
Sep-19	2.88%	3.92%	4.21%	3.95%
Average	2.99%	4.10%	4.41%	4.06%

KCC Staff's Recommended ROE	9.25%
Average Yield on 30 Year Treasury Bond	2.99%
Equity Risk Premium Over the 30-Year Treasury Bond Yield	**6.26%**
KCC Staff's Recommended ROE	9.25%
Average Yield on "A" Rated Utility Bonds	4.10%
Equity Risk Premium Over "A" Utility Bond Yield	**5.15%**
KCC Staff's Recommended ROE	9.25%
Average Yield on "BBB/Baa" Rated Utility Bonds	4.41%
Equity Risk Premium Over "Baa/BBB" Utility Bond Yield	**4.84%**
KCC Staff's Recommended ROE	9.25%
Average Yield to Maturity on OneGas 4.658 2044 Bond	4.06%
Premium over Yield on ONE Gas, Inc. Bonds	**5.19%**

1) Board of Governors of the Federal Reserve System, 30-Year Treasury Constant Maturity (Federal Reserve Bank of St. Louis, Release H.15)
2) Yield on A and BBB/Baa Rated Public Utility Bonds 25 to 30 Maturity Reported weekly in Value-Line Investment Survey, Selection & Opinion Section
3) Monthly Average yield to maturity reported by FINRA on ONE Gas 4.658 2044

Standards for a Just & Reasonable Rate of Return

Q. What standards should commissions consider when authorizing a rate of return?

A. The standards for setting a just and reasonable rate of return require that, to be reasonable, the allowed return must reflect the risks associated with an equity investment in the utility.

For the allowed return to be in that reasonable range, it must compensate for those added risks while capturing a fair proportion of benefits for consumers. The allowed ROE is best described as the forward-looking discount rate that is necessary to induce equity investors to commit their capital to the enterprise. Standards used to gauge the fairness and reasonableness of an allowed ROE have been stated by courts, as the result of appeals of decisions issued by regulatory agencies. Financial analysts and policy-makers rely on the courts' decisions as a guide in estimating the appropriate cost of capital. The opinions do not articulate precisely how to estimate or model a reasonable cost of capital. Instead, the decisions provide critical questions for policy makers and analysts to consider in determining a reasonable return for a regulated utility.

In general, United States Supreme Court decisions state that returns granted to regulated public utilities should: 1) be commensurate with returns on investments of similar risk; 2) be sufficient to assure the financial integrity of the utility under efficient economic management; and 3) change over time with changes in the money market and business conditions.[33] An important take-away from these decisions is that the Supreme Court of the United States has afforded regulatory agencies a significant amount of latitude in establishing an appropriate ROR and ROE for a utility. The Kansas Supreme Court has recognized and follows this body of law.[34] This Commission has noted this fact in Orders issued in previous dockets.[35]

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[33] *Smyth v. Ames*, 169 U.S. 466 (1898); *Wilcox v. Consolidated Gas Co*., 212 U.S. 19, 48-49 (1909); *Bluefield Water Works & Improvement Company v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-3 (1923); *Federal Power Commission v. Hope Natural Gas Company*, 320 U.S. 591, 603 (1944).

[34] *Kansas Gas & Elec. Co. v. State Corp. Comm'n*, 239 Kan. 483, 491, 720 P. 2d 1063, 1072 (1986).

[35] Order: 1) Addressing Prudence; 2) Approving Application, in Part; & 3) Ruling on Pending Requests, Docket No. 10-KCPE-415-RTS, November 22, 2010, 37-38.

Q. Discuss how financial analysts apply the standards established by the Court.

A. For an allowed ROE to meet the legal standards, the return should be as specific as possible to the utility in question. Financial analysts achieve this goal by analyzing not only the utility in question, when it is possible to do so, but also a proxy group of similarly situated utilities.

There are several court cases that, as a group, are viewed as the keystone to measuring the adequacy of a utility's allowed return. The earliest of these decisions go back to an era when it was not only the "rate of return" at issue but also the fundamental measurement of the investment in the utility enterprise, commonly referred to as rate base. This is less of an issue today as regulators, utility management, and investors readily accept actual historic-depreciated value as the measure of investment to estimate the value of a utility's rate base (as opposed to reproduction cost or market value). The Court's decision in *Bluefield* addressed both rate base and ROR.[36] Treatises on rate of return for public utilities, such as The Cost of Capital – A Practitioner's Guide, agree that *Bluefield* lays out the four standards for a fair return.

> *1) Comparable Earnings* – a utility is entitled to a return similar to that being earned by other enterprises with similar risks, but not as high as those earned by highly profitable or speculative ventures;
>
> *2) Financial Integrity* – a utility is entitled to a return level reasonably sufficient to assure financial soundness;
>
> *3) Capital Attraction* – a utility is entitled to a return sufficient to support its credit and raise capital; and
>
> 4) *Changing Level of Returns* – a fair return can change along with

[36] *Bluefield Water Works & Improvement Co. v. Pub. Svc. Comm'n of West Virginia*, 262 U.S. 679, 692-3 (1923).

economic conditions and capital markets.[37]

As a financial analyst formulating rate of return analyses for our state commission, I take from *Bluefield* that the Court requires a rate Order that allows a utility an opportunity to earn a return consistent with the utility's risk profile and consistent with observations in the capital markets. The Court's decision in *Hope,*[38] like that in *Bluefield,* dealt with both valuation of rate base, as well as rate of return on that rate base. With respect to the rate of return, the Court in *Hope* affirmed the four standards set out in *Bluefield.*

Proxy Group of Natural Gas Distribution Companies

Q. How did you select a proxy group for your cost of equity analysis?

A. Using the following parameters, I evaluated the natural gas distribution companies followed by Value-Line Investment Survey and specifically reviewed the proxy group selected by Dr. Fairchild. I determined his proxy group to be an acceptable group for my analysis. His proxy group is acceptable as it meets the following criteria:

- Has publicly traded common stock;
- Is a public utility followed by Value-Line Investment Survey as a natural gas

[37] The Cost of Capital – A Practitioner's Guide by David C. Parcell, Prepared for the Society of Utility and Regulatory Financial Analysts, 1997, pp. 3-13 to 3-14.

[38] *Federal Power Comm'n. v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944). **"**The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus, we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view, it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard, the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint."

distribution company;

- No recent spin-offs, mergers or distressed assets;
- Exhibits stable dividends—No recent dividend cuts;
- Possesses an investment-grade bond rating or similar level of financial strength rating from Value-Line

Stock-price data is critical to a cost of equity analysis as that price data encapsulates the market participants' valuation of the company and the economy. Selecting companies that investment research companies like Value-Line categorize as natural gas distribution utilities focuses the analysis on companies facing similar types of business risks and opportunities and ensures that publically available financial data is available. As a starting point, this parameter is important as it assures us the companies generally derive their earnings in this industry. The following table contains all of the natural gas utilities followed by Value-Line. The bold and boxed cells indicate the primary reason for rejection from the proxy group.

Proxy Group Selection Process
Natural Gas Distribution Companies Followed by Value-Line Investment Survey

1	2	3	4	5	6	7	8	9
		Bond Rating		Value-Line Financial Strength	No Announced Merger	Dividends No Planned Reductions	Positive EPS/DPS Growth	LDC Revs as % of Total
		Moody's	S&P					
Atmos Energy, Corp.	ATO	A2	A	A+	x	x	x	96.0%
Chesapeake Utilities	CPK	no ratings		B++	x	x	x	51.3%
NiSource, Inc.	NI	Baa2	BBB+	B+	x	x	x	63.6%
New Jersey Resources, Corp	NJR	Aa2	BBB+	A+	x	x	x	30.7%
Northwest Natural Gas, Co.	NWN	A3	A+	A	x	x	x	96.1%
One Gas, Inc.	OGS	A2	A	A	x	x	x	100.0%
South Jersey Industries, Inc.	SJI		BBB	A	x	x	x	41.6%
Spire, Inc.	SR	Baa2	A-	B++	x	x	x	95.8%
Southwest Gas Holdings, Inc.	SWX	Baa1	BBB+	B++	x	x	x	51.1%
UGI, Corp.	UGI	A2		B++	x	x	x	14.5%

1) Natural Gas Distribution utilities followed by Value-Line Investment Survey (U.S. companies)
2) Ticker symbol
3) Moody's credit rating (LTR) data from S&P Global Market Intelligence
4) S&P credit rating (LTR) data from S&P Global Market Intelligence
5) Value-Line Investment Survey Financial Strength Ratings
6) No merger, acquistion, or sale of assets (Value-Line & S&P Global Market Intelligence)
7) No forecasted dividend reduction (Value-Line)
8) No recent dividend reduction (Value-Line & S&P Global Market Intelligence)
9) Revenues from natural gas distribuion operations as a percentage of total revenues (S&P Global Market Intelligence)

Initially, I would have also included NiSource in the proxy group, but recent events have caused large fluctuations in its stock price and trading volume. Those aberrations caused me to question whether data of that utility is applicable to KGS. Granted this issue was not present in the historic data, but if there is a need to capture additional, updated market data, it would be present. UGI is eliminated due to the low percentage of its total revenues derived from its regulated utility business. Removing NiSource and UGI results in the same proxy group as that used by Dr. Fairchild.

Return on Equity Analysis

Q. How did you perform the cost of equity analysis?

A. I am using discounted cash flow (DCF) models and capital asset pricing models (CAPM); identical to the methods used in recent rate cases before the Commission.

Q. Does the DCF model meet the legal standards discussed earlier in your testimony?

A. Yes, a cost of equity estimate derived from the DCF model meets the legal standards discussed above if the model incorporates current information from the capital markets via current stock prices and accurate data that investors use to establish their discount rate. This market-based information ensures the cost of equity estimates evaluate investors' required rate of return or discount rate that reflects the current economic environment.

The DCF model is a valuation model used by investors to value different types of investments such as real estate, bonds, and equity securities. The DCF model is a useful tool to value any investment that involves regular, periodic cash flows. The notion of discounting a future receipt of cash back to the present so as to place a price or value on an investment goes back centuries.[39] The premise of the DCF model in the valuation of common stock is that investors determine the value of a company's common stock by discounting its future dividend payments back to the present. The foundation of the DCF model is the process of discounting those future cash flows back to the present at the investors' required return. An investor's required rate of return is risk-sensitive and sensitive to the returns available on investments of comparable risk throughout the global capital markets. In other words, as the risk of the investment increases, so will the investors' required return. A higher required rate of return decreases the present value of the stream of dividends that equates to the price of the stock. So, all other variables being equal, investors price the riskier of two common stocks lower because the cash flows or

[39] The formal presentation of the DCF model as we use it today dates back to the 1930's in Irving Fisher's book: The Theory of Interest and John Burr Williams' 1938 text: The Theory of Investment Value. These two authors expressed the DCF model in modern economic terms.

dividends are discounted back to the present at a higher rate.

The form of the DCF model that regulatory agencies are accustomed to seeing is often referred to as the Gordon Growth Model, which is a model that values the security at the present value of a stream of cash flows (dividends) growing at a constant rate into perpetuity. The basic form of this DCF equation is:

$$P_0 = \frac{D_0(1+g)}{(Ke-g)}$$

where:

P_0 = the value of the common stock or asset

D_0 = the current dividend of the stock or annual cash flow from the asset

g = the annual growth rate of the dividend or cash flow forever

Ke = cost of equity or required rate of return for the stockholders

Or

Stock Price = Annual Dividend / (Req’d Rate of Return – Dividend Growth Rate)

This is the form of the equation commonly found in texts regarding finance, investments, and asset valuation. Such texts are inclusive of both theory and practical application of the DCF model in utility regulatory settings.

Regulatory agencies responsible for setting rates and revenue requirements want to know the investors’ required rate of return or Ke in the equation. So, we solve the equation for that variable. The equation below shows the algebraic isolation of the investors’ required rate of return. By isolating investors’ required rate of return in the equation, we can estimate it by knowing the stock’s dividend yield and the annual dividend growth rate expected by investors. That form of the equation is:

$$Ke = \frac{D_0(1+g)}{P_0} + g$$

This equation is frequently written out as:

Req'd Rate of Return = (Dividend/Current Stock Price) + Dividend Growth Rate

or

Required Rate of Return = Dividend Yield + Dividend Growth Rate

Or as commonly abbreviated by regulatory agencies

Ke = y + g

Where: y = Dividend Yield

g = Expected Dividend Growth

Through a handful of inputs, the DCF model distills down to an equation, a complex cognitive process performed by investors to arrive at a discount rate and valuation of the security. As with any equation that attempts to model behavior, there are a host of assumptions that come along with it. Those assumptions are:

- Ke corresponds only to the specific stream of future dividends, rather than earnings, and that constitutes the source of value;
- The discount rate (Ke) must exceed the growth rate (g);
- The constant growth rate will continue for an indefinite future;
- Investors require the same discount rate (Ke) each year; and
- There is no external financing.

Q. Why is it reasonable to accept these assumptions?

A. The DCF model is attempting to emulate investors' behavior; distilling human behavior into a handful of inputs demands simplifying assumptions. The question becomes whether the assumptions are so contrary to investors' behavior in the real-world that the model output becomes meaningless or illogical. I do not believe the assumptions of the DCF model are contrary to investor behavior. And I do not know of any regulatory agency that has dismissed the DCF as being contrary to human behavior. Moreover, there are methods I use to evaluate whether an output falls outside of the realm of reality. For example, the output can be compared with the returns available on other investments such as long-term corporate bonds. There were no observations eliminated using this screen.[40]

Discounted Cash Flow Model

Q. How did you calculate the dividend yield (y) component of the DCF model?

A. The dividend yield (y) is the easier of the two components to measure as it is easily observable in daily stock price reports. It is calculated by dividing the stock's annual dividend payment per share by its market price per share.

Q. What is the source of the dividend information?

A. Historic and current dividend information is easily obtained from public subscription services such as Value-Line and non-subscription services such as YahooFinance. The DCF model requires a forward-looking dividend payment which is often the current year's

[40] Staff applies this screen using the interest rates of Baa Utility Bonds and the yields on utility-specific debt shown in the Risk Premium Table. Staff adds 100 basis points to these yields as a minimum risk premium test. Cost of equity observations below this level are eliminated from the average. FERC proceedings apply a similar test for outliers.
At September of 2018, the Baa Utility Bond Yield was 4.70% + 1.00% minimum risk premium =5.70% threshold. (see table on page 45 for Baa Utility Bond Yield)

dividend payment increased by the forecasted growth rate for next year. In lieu of forecasting, I obtained the 2019 forecasted dividend per share information from Value-Line Investment Survey. The Value-Line reports for each of the proxy companies are attached as Schedule AHG-2. I obtained the stock prices for the dividend yields from YahooFinance. For this analysis, I used weekly stock price observations taken from September 25, 2017, through September 17, 2018; roughly a full year of pricing observations. The stock prices for each of the proxy companies appears on Schedule AHG-3.

Dividend Yields Based on Prices from September 25, 2017, through September 17, 2018
18-KGSG-560-RTS

		1	2	3	4	5	6
		DPS	Stock Prices			Dividend Yield	
		2019	Min	Max	Mean	Max.	Min.
Atmos Energy, Corp.	ATO	$ 2.08	$ 92.19	$ 80.87	$ 87.09	2.57%	2.26%
Chesapeake Utilities	CPK	$ 1.54	$ 87.30	$ 69.45	$ 78.34	2.22%	1.76%
New Jersey Resources, Corp	NJR	$ 1.12	$ 45.95	$ 38.60	$ 42.58	2.90%	2.44%
Northwest Natural Gas, Co.	NWN	$ 2.00	$ 67.45	$ 55.15	$ 61.87	3.63%	2.97%
One Gas, Inc.	OGS	$ 2.00	$ 80.03	$ 64.95	$ 73.12	3.08%	2.50%
South Jersey Industries, Inc.	SJI	$ 1.20	$ 35.28	$ 27.39	$ 31.67	4.38%	3.40%
Spire, Inc.	SR	$ 2.40	$ 79.45	$ 66.30	$ 72.70	3.62%	3.02%
Southwest Gas Holdings, Inc.	SWX	$ 2.18	$ 81.81	$ 68.50	$ 76.15	3.18%	2.66%
					Range:	2.22%	3.40%

1) 2019 Dividends per Share Forecasted by Value-Line Investment Survey, August 31, 2018, Schedule AHG-2
2) Minimum 12 month price observed from September 25, 2017, through September 17, 2018
3) Maximum 12 month price observed from September 25, 2017, through September 17, 2018
4) Mean price for the time period of September 25, 2017, through September 17, 2018 (weekly observations)
5) Maximum dividend yield available from time period
6) Minimum dividend yield available from time period

Forecasted Growth Rates for the DCF Model

Q. Please discuss the importance of the second component, the growth rate (g), in the DCF equation.

A. The "g" represents the anticipated annual growth rate in cash-flows that investors expect to receive through dividends from the stock. This is a challenging and contentious issue in a DCF analysis for two reasons. First, it is a key element in the DCF model or any form of a discounted cash flow analysis because the growth rate has a one-for-one effect on the required return produced by the model. All other factors being equal, a higher growth rate results in an equally higher return on equity for the utility. Second, it is highly subjective due to the uncertainty about future earnings and dividends, as well as the economy.

Q. How did you estimate the growth rate in the DCF model?

A. I relied on a combination of short-term and long-term growth forecasts, the same growth forecasts that investors apply to value common stocks. The appropriate growth estimate to use in the DCF model is that which is expected by the market and factored into investors' analyses to estimate stock prices. Earnings per share growth forecasts are commonly incorporated into the DCF model. Investment firms that publish growth forecasts typically publish three to five-year annual growth estimates for earnings. Value-Line Investment Survey also provides dividend growth rate forecasts; it is the only firm that I am aware of that does so. Three to five years is as far into the future as analysts forecast for a specific company. There are several sources for these estimates. My analysis incorporates short-term forecasts published by Value-Line Investment Survey, FactSet as reported through S&P Market Intelligence, and Thomson-Reuters reported through Yahoo Finance.

Q. How do investors estimate the dividend growth rate beyond the three to five-year horizon of the short-term growth forecasts?

A. For the long-term perspective of potential growth, investors rely on forecasts of the broad economy as measured by annual changes forecasted for the nation's gross domestic product (GDP). There are sources for long-term growth estimates of this country's GDP that extend out more than 20 years. Academic texts and investment professionals use these forecasts in DCF models as a forecast of potential long-term growth of corporate dividend payments.

GDP refers to the market value of all final goods and services produced within a country in a given period. Nominal GDP (nGDP) is that measure of goods and services which *includes* effects of price changes - better known as inflation. Inflation must be included for our forecast because the DCF analysis is interested in the nominal required return. That is to say, investors' expectations of inflation are contained in their required return. Keep in mind that the "headline" GDP reported in the media is *real* GDP, which is GDP *less* the inflation experienced over the measurement period.

Q. Is it a widely accepted practice in securities valuation to use nGDP growth estimates in the DCF model?

A. Yes, in the federal regulatory arena, similar to the responsibilities of the KCC, the Federal Energy Regulatory Commission (FERC) uses nGDP to estimate the cost of equity because it is consistent with investor behavior. FERC has reviewed the issue of long-term growth estimates used in DCF models. It took comments from stakeholders that included state commissions, customers, investment bankers, and interstate pipeline companies.[41] Testimony from these parties made it clear that long-term estimates of nGDP are a common component of valuation analyses conducted by investment professionals. From that

[41] Transcript from Technical Conference held on January 23, 2008, FERC Docket PL07-2-000.

proceeding, FERC concluded that long-term growth estimates of nGDP should be the estimate of long-term growth in the DCF models used to estimate required returns for interstate pipeline companies because that is consistent with investor behavior.[42] In June of 2014, FERC concluded that the same methodology should be used in setting the required returns for electric transmission companies.[43] Although the Commission has never explicitly endorsed long-run nGDP growth as an input, it is clear that the growth estimate used by Staff in the 15-116 Docket was considered credible by the Commission.[44] In that analysis, I relied on the same sources for long-term nGDP growth as I am using in this analysis. These are also sources that FERC relies on for long-run nGDP estimates.

Q. Is there academic support for this issue?

A. Yes, academic research has shown that nGDP growth forecasts are an important input to valuation studies because the analyst has to consider whether a company's annual earnings can grow as fast as, or even faster than, the broad economy. In two of his books devoted to the subject of asset valuation, Dr. Aswath Damodaran discusses the nature of a stable growth rate for DCF models.[45] He argues for viewing nominal economic growth as the absolute maximum when using a stable-growth model, such as the DCF model we are using.

> "The stable growth rate cannot exceed the growth rate of the economy in which a firm operates, but it can be lower. There is nothing that prevents us from assuming that mature firms will

[42] Policy Statement, FERC Docket PL07-2-000 (April 17, 2008); FERC Opinion No. 486, FERC Docket RP04-274 (Oct. 19, 2006).
[43] Opinion No. 531, June 19, 2014, 147 FERC 61,234, para 36.
[44] Order issued September 10, 2015, Docket 15-KCPE-116-RTS, para. 34; p. 15-16.
[45] Investment Valuation: Tools and Techniques for Determining the Value of Any Asset, 2nd Edition and Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd Edition.

> become a smaller part of the economy and it may, in fact, be the more reasonable assumption to make. Note that the growth rate of an economy reflects the contributions of both young, higher growth firms and mature, stable growth firms. If the former grow at a rate much higher than the growth rate of the economy, the latter have to grow at a rate that is lower." (Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Aswath Damodaran, p. 148)

> "The growth rate of a company cannot be greater than that of the economy but it can be less. Firms can become smaller over time relative to the economy. Thus, even though the cap on the growth rate may be the nominal growth rate of the economy, analysts may use growth rates much lower than this value for individual companies." (Damodaran on Valuation: Security Analysis for Investment and Corporate Finance, 2nd edition, Aswath Damodaran, p.159)

It is worth noting that Professor Damodaran cites the nGDP growth projection as a *ceiling* for long-term growth in most valuation studies. Certainly, there are industries that will exceed the average for a period of time, but even for those industries, rapid growth cannot continue forever.

Q. Does the view that nGDP growth is a ceiling on long-term earnings growth exist outside of academia?

A. Yes, valuation analysts carefully consider the long-run growth rates used to value assets very carefully because using an incorrect growth estimate will lead to incorrectly valuing an asset. Institutions directly involved in asset valuation and asset management that apply valuation models to analyze potential acquisition and merger transactions recognize that estimates of firm-specific growth are a driver to the value of an asset; overstating growth would cause a model to overestimate the value of the asset which would result in an economic loss to the investor. These experts also warn of a ceiling to earnings growth rates as being no more than that of broad economic growth.

> "Growth rate: Few companies can be expected to grow faster than the economy for long periods. The best estimate is probably the expected long-term rate of consumption growth for the industry's products, plus inflation." (Valuation: Measuring and Managing the Value of Companies, Tim Koller, Mark Goedhart, and David Wessels, McKinsey & Co; 4th ed, p. 275.)

The following quote from J.P. Morgan Asset Management (JPMAM) addresses the macro or economy-wide measures of profits, and it is consistent with the firm-specific view expressed by asset valuation experts in that analysts must be aware of the forecasted growth rates applied in valuation models and how those growth forecasts comport with broad measures of forecasted economic growth.

> "One common mistake is to assume that earnings and dividends received by investors can grow in line with—or even in excess of—overall economic growth (GDP) in perpetuity. Granted, it is almost a truism that aggregate earnings must grow at the same pace as the overall economy in the very long run; otherwise, profits would eventually outstrip the size of the entire economy or dwindle to an insignificant share of it. But not all of this earnings growth accrues to existing shareholders. On the contrary, a large portion of economic growth comes from the birth of new enterprises. Some commentators suggest (for example, Bernstein and Arnott, 2003; Cornell, 2010) that new enterprises account for more than half of GDP growth in the U.S., while in some rapidly developing economies new enterprises may account for the lion's share of overall economic growth."[46]

Peter L. Bernstein and Robert D. Arnott, referenced in the quote, have both published in peer-reviewed academic journals and books on investment strategy, as well as building

[46] Long-term Capital Market Return Assumptions: 2015 Estimates and Thinking Behind the Numbers, J.P. Morgan Asset Management, p. 25, https://am.jpmorgan.com/us/institutional/ltcmra

careers in the field of asset management and investment strategy. Their research suggests that relying on GDP as the long-run growth estimate could actually be overly optimistic. Research by Bernstein and Arnott warns practitioners that a portion of nGDP growth is created by new enterprises and that portion of nGDP growth does not contribute to the earnings growth of existing enterprises.[47]

Q. Do you believe this evidence justifies incorporating long-run nGDP growth forecasts into cost of equity analyses of utility companies?

A. Yes, because we have to ascertain the discount rate investors apply to the future cash flows from an investment in these utilities. Therefore, the Commission should emulate investors' analytical practices as closely as possible to determine investors' discount rate or required return. As noted above, investment professionals include a long-run growth forecast for the general economy (in addition to company-specific short-run growth estimates) when applying the DCF and capital asset pricing model, and that measure of macro-economic growth serves as the upper bounds of a firm-specific analysis. Therefore, the Commission should consider the same information when estimating a utility's required return.

Q. How did you estimate long-run nominal GDP growth?

A. I averaged the long-run nGDP forecasts of the Energy Information Agency (EIA) and the Social Security Administration (SSA). The average of these two forecasts composes the long-run growth estimate in the DCF analysis. The nGDP growth forecasts published by EIA and SSA are the same sources that I have relied on over the past decade. FERC also

[47] Earnings Growth: The Two Percent Dilution, William J. Bernstein and Robert D. Arnot, Financial Analysts Journal, September/October 2003, pp 47-55.

uses these two sources for nGDP estimates.

Nominal GDP Estimates

Energy Information Agency (EIA) 2015 - 2050	4.18%
Social Security Administration (SSA) OADSI Trustees Report 2017 - 2095	4.38%
Average	4.28%

Sources:
EIA Annual Energy Outlook 2018, Table B4

Forecasted Nominal GDP, 2018, OADSI Trustees Report Office of the Chief Actuary, Table V.B1.—Principal Economic Assumptions Table V.B2.—Additional Economic Factors

Q. Are these two the only two sources for long-run GDP forecasts?

A. There are other source shown in the table and they are wholly consistent with the EIA and SSA forecasts.

Additional GDP Estimates

Exxon-Mobile 2018 Outlook for Energy 2016 - 2040 2.2% Real GDP + 2.2 GDP Deflator from SSA	4.40%
Congressional Budget Office Nominal GDP Forecast	4.50%
Federal Reserve Open Market Committee Long-run Forecast 2.0% Real GDP + 2.0 PCE Inflation	4.00%

Sources:
ExxonMobile 2018 Outlook for Energy: A View to 2040, p. 60

An Update to the Economic Outlook: 2018-2028, Congressional Budget Office, August 2018

Economic Projections of Ferderal Reserve Board Members & Bank Presidents Under Their Individual Assessment of Projected Appropriate Monetary Policy, June 2018

DCF Results

A. Please discuss the results of your DCF analysis.

Q. The results of my DCF analysis appear in the following table. The results seen in this DCF analysis are higher than those found in my analysis performed in KGS's previous rate case, 16-KGSG-491-RTS, primarily due to higher short-term growth forecasts for the proxy group. As I have set out the foundations for the DCF analysis in the previous pages, in this section, I will discuss the specific information that I relied on for the DCF model and interpret the results.

Discounted Cash Flow (DCF) Analysis
18-KGSG-560-RTS

		1	2	3	4	5
		Dividend Yields		Growth	DCF Estimated	
		Max.	Min.	Rate	Required Return	
Atmos Energy, Corp.	ATO	2.57%	2.26%	5.57%	7.83%	8.14%
Chesapeake Utilities	CPK	2.22%	1.76%	6.12%	7.88%	8.34%
New Jersey Resources, Corp	NJR	2.90%	2.44%	5.51%	7.94%	8.41%
Northwest Natural Gas, Co.	NWN	3.63%	2.97%	4.66%	7.63%	8.29%
One Gas, Inc.	OGS	3.08%	2.50%	6.12%	8.61%	9.19%
South Jersey Industries, Inc.	SJI	4.38%	3.40%	6.75%	10.15%	11.13%
Spire, Inc.	SR	3.62%	3.02%	4.47%	7.49%	8.08%
Southwest Gas Holdings, Inc.	SWX	3.18%	2.66%	5.28%	7.94%	8.46%
				Average of each column	8.18%	8.76%
				Average of all observations	8.47%	

1) Dividend divided by maximum price observed from September 25, 2017, through September 17, 2018
2) Dividend divided by minimum price observed September 25, 2017, through September 17, 2018
3) Forecasted EPS growth
4) Low-end estimate = col 1 + col 3
5) High-end estimate = col 2 + col 3

Pricing data was gathered from YahooFinance for each of the proxy companies from the time period of September 25, 2017, through September 17, 2018, on a weekly basis. The low dividend yield is computed using the projected 2019 dividend divided by the average of the weekly high prices while the high dividend yield is computed using the average weekly low prices.

Q. How did you arrive at a growth rate for each proxy company?

A. The growth rate is the average of the short-term growth rates[48] and the long-run forecast of nGDP of 4.28%. The following table summarizes all of the observed growth forecasts, both historical and forecasted.

Growth Rate Summary
18-KGSG-560-RTS

		1	2	3	4	5	6	7	8	9	10	11
		Value-Line Historic Data				Forecasted Growth Rates						DCF
		Earnings Growth		Dividend Growth		Value Line		IBES	FactSet	Short-run	Long-term	Growth
		10 Year	5 Year	10 Year	5 Year	EPS	DPS	EPS	EPS	Average	nGDP	Rate
Atmos Energy, Corp.	ATO	6.00%	9.00%	3.00%	4.50%	7.50%	7.00%	6.95%	6.00%	6.86%	4.28%	5.57%
Chesapeake Utilities	CPK	8.50%	7.50%	4.50%	5.50%	8.50%	9.00%	6.00%	8.33%	7.96%	4.28%	6.12%
New Jersey Resources, Corp	NJR	7.00%	5.50%	7.50%	6.50%	9.50%	4.00%	7.10%	6.33%	6.73%	4.28%	5.51%
Northwest Natural Gas, Co.*	NWN	-11.50%	-22.00%	3.00%	1.50%	*8.83%*	2.50%	4.50%	4.33%	5.04%	4.28%	4.66%
One Gas, Inc.	OGS	0.00%	0.00%	0.00%	0.00%	10.50%	10.00%	5.50%	5.80%	7.95%	4.28%	6.12%
South Jersey Industries, Inc.	SJI	2.50%	-1.50%	8.50%	7.00%	9.50%	4.00%	12.00%	11.35%	9.21%	4.28%	6.75%
Spire, Inc.	SR	4.00%	4.00%	3.50%	4.00%	7.50%	4.00%	3.53%	3.57%	4.65%	4.28%	4.47%
Southwest Gas Holdings, Inc.	SWX	6.50%	5.00%	8.00%	11.00%	9.00%	6.50%	4.00%	5.60%	6.28%	4.28%	5.28%
	Min	-11.50%	-22.00%	0.00%	0.00%	7.50%	2.50%	3.53%	3.57%	4.65%		4.47%
	Max	8.50%	9.00%	8.50%	11.00%	10.50%	10.00%	12.00%	11.35%	9.21%		6.75%
	Mean	2.88%	0.94%	4.75%	5.00%	8.85%	5.88%	6.20%	6.41%	6.83%		5.56%

Columns: 1) - 6) Historic 5 & 10 Year & Forecasted 2021 - 2023 growth rates as reported by Value-Line in August 31, 2018, Schedule AHG-2.
7) 5-year forecasted annual earnings per share growth rate. Consensus forecasts gatherd by Thomson-Reuters (aka I/B/E/S) and reported at YahooFinance on September 24, 2018.
8) Long-term forecasted annual earnings per share growth rate. Consensus forecasts gathered by FactSet and reported at S&P Global Market Intelligence (fka: SNL Financial) on September 24, 2018.
9) Average of 3 to 5-year forecasted annual growth rates (colunms 5 through 9).
10) Long-term forecasted nominal GDP growth rate. Average of long-term forecasts by the U.S. Energy Information Agency and Social Security Administration Office of the Chief Actuary.
11) Average of short-term and long-term growth rates.

*Northwest Natural Gas (NWN) Value-Line EPS growth forecast reported at 30.50% reflects 2017 loss associated with asset impairment charge.
When normalized, 2017 EPS is $2.24. Reported, unnormalized EPS for 2017 is a loss of $1.94. Normalized EPS results in a 3 to 5 year EPS growth rate of 8.83%.

Q. How is the long-run nGDP forecast applied in your DCF analysis?

[48] For each proxy company, I gathered three short-run, three to five-year growth forecasts for earnings and dividend from Value-Line Investment Survey; as well as analysts' earnings growth projections by Thomson Financial Network (I/B/E/S) reported by YahooFinance. I/B/E/S aggregates analysts' earnings forecasts and reports the mean of those estimates. FactSet is a service similar to I/B/E/S in that it aggregates analysts' forecasts and publishes the mean and median of estimates. FactSet data was obtained through S&P Global Market Intelligence.

A. The long-run nGDP growth forecast of 4.28% is averaged with the short-run growth forecasts. In my DCF analysis, I give equal weight to short-run and long-run growth forecasts. The weighting is certainly debatable because we cannot know precisely how investors weight the two forecast horizons. At FERC, in both natural gas pipeline and electric transmission rate cases, the short-run growth is afforded a two-thirds weighting and the nGDP forecast a one-third weighting. Whatever the weighting an analyst applies between the short-term and long-term growth forecasts, the analysis needs to be constructed in a manner that distinguishes between the growth potential of each time horizon. Dr. Fairchild's analysis failed to include *any* long-run growth forecast.

Q. What are your observations of the short-run growth forecasts?

A. The average of the short-run growth forecasts for the proxy group is 6.83% with a range of 4.65% to 9.21%. All of the short-term growth forecasts in this table are as reported in the publications except for one. Northwest Natural Gas (NWN) Value-Line three to five-year EPS growth forecast reported at 30.50%. The three to five-year growth estimate is abnormally high because the base year is 2017 and reflects a loss associated with an asset impairment charge. The reported EPS for 2017 is a loss of $1.94.[49] When NWN management removes that impairment charge, the normalized 2017 EPS is $2.24. Because this impairment charge is not expected to recur, I used the company's cited normalized-EPS for 2017 as the base year for the growth rate calculation. Using the normalized EPS

[49] Northwest Natural Gas, Inc., Midwest Investor Meetings, September 2018, slide 33. http://platform.mi.spglobal.com/Cache/1500113066.PDF?O=PDF&T=&Y=&D=&FID=1500113066&iid=4057132

results in a three to five-year EPS growth rate of 8.83%.

Internal Rate of Return (IRR) Analysis

Q. Please discuss the internal rate of return (IRR) analysis that you performed.

A. An IRR analysis of an investment is a form of a discounted cash flow analysis, only with a more complex equation than the Gordon Growth Model that we applied in the previous section. In the IRR analysis, we are able to apply the five-year growth forecasts to only the intended next five years of dividends, with the remaining years growing at the long-run nGDP forecasted growth rate. In the age of spreadsheets, the IRR equation is not that much harder to manage than the basic dividend yield plus growth DCF model (a.k.a. Gordon Growth Model) and, as the IRR model allows us to apply the growth forecasts to their respective forecast periods, the IRR model provides important information to policy makers because it recognizes the respective time spans of both the short-run (three to five-year earnings growth) and long-run (nGDP growth rate) forecasts. The full output of the IRR calculations appears in Schedule AHG-4; the following table summarizes the results.

Internal Rate of Return (IRR) 18-KGSG-560-RTS	
Atmos Energy, Corp.	7.08%
Chesapeake Utilities	6.66%
New Jersey Resources, Corp	7.36%
Northwest Natural Gas, Co.	7.86%
One Gas, Inc.	7.63%
South Jersey Industries, Inc.	9.16%
Spire, Inc.	7.89%
Southwest Gas Holdings, Inc.	7.58%
Mean	7.65%
Min	6.66%
Max	9.16%

In the IRR model, short-term growth forecasts are given much less weight than in the DCF analysis; five years of a several hundred year time horizon or five percent as opposed to a weighting of 50 percent that I applied in the two-stage DCF model. As a result of the greater weighting of the long-term growth estimate, the average for the proxy group in the IRR analysis is 80 basis points lower than the two-stage DCF results. In this instance, as is usually the case with public utilities, there is not a wide difference between the short-term growth rates and long-term nGDP growth, therefore, the difference in weighting of the two growth rates between the DCF and IRR analyses do not cause a large difference in results.

Capital Asset Pricing Model (CAPM) Analysis

Q. Please describe the capital asset pricing model (CAPM).

A. The CAPM offers an explanation of the positive relationship between risk and ROR required by investors.[50] It is appealing to regulators because it meets the legal standards I discussed above, as it can be structured to incorporate current data from the financial markets and the unique risks of the utility in question.

Ke = Rf + Beta (Rm - Rf) or

Ke = Rf + Beta (Rp)

Where:

Ke =	required return on equity
Rf =	return on a risk-free security
Rm =	an expected return from the market as a whole
Rp =	risk premium available to investors through purchasing common stocks instead of risk-free securities often calculated as Rm - Rf
Beta =	volatility of the security's or portfolio's return relative to the volatility of the market's return with the market beta equal to 1.0

Rf

The Rf estimate is the interest rate investors believe represents a riskless return. Although it is a simple concept, the answer is not universally agreed upon. It is widely accepted that a debt instrument issued by the U.S. Government is a risk-free instrument. An investment in U.S. Treasury Bonds is a risk-free investment, if the investor plans to hold it until maturity. The risk-free instrument chosen will have an effect on the results of the CAPM analysis. Whichever instrument is selected, it should be used consistently in the equation.

Beta

[50] The theoretical support for the CAPM is the work done by Harry Markowitz ("Portfolio Selection," Journal of Finance, March, 1952). W.F. Sharpe added the concept of a risk-free rate of return to the Markowitz model ("A Simplified Model of Portfolio Analysis," Management Science, January, 1963).

The beta coefficient measures the volatility of the return earned by the utility's stock relative to the volatility of the returns earned by the broader equity market. The broad equity market is frequently measured using the S&P 500 Index. This measure provides a look at the risk and volatility of a stock relative to other investments. A stock with a beta of 1 is equally as volatile as the market as a whole. A stock with a beta of 0.5 is half as volatile as the market. Value-Line reports that OGS has a beta coefficient of 0.65. These are similar to the average for the proxy group of 0.68.

Rm

Rm is the expected return on the stock market as measured by a broad market index such as the S&P 500. This represents the total return consisting of the price change of the index plus dividends earned for the year.

Rp

The risk premium is the difference between investors' expected return from the stock market and their expected return from the risk-free investment over the same time period. The risk premium is written as Rm-Rf. The market return and the risk-free return should be taken from the same time period so as to accurately measure the additional return required by investors to take on the risk of common stocks over the risk-free investment over that forecasted or historic time period.

Q. Please discuss your CAPM analysis.

A. I took two distinct approaches to the CAPM analysis that are commonly found in both cost of capital studies in the regulatory arenas and in asset valuations. I performed one analysis using purely historic measures of returns from the stock and bond markets. The second analysis incorporates forecasted returns as opposed to historic returns. The results using historic returns are drastically higher, 9.03%, when compared to results using forecasted returns of 6.11% reflecting the overwhelming evidence that future returns on debt and equity investments will be lower than those experienced over the past century.

Both forms of my CAPM analysis incorporate the high and low beta coefficients observed in the proxy group. The proxy group average beta is 0.68. This average beta indicates that the volatility of the proxy group is about 68% of that exhibited by the broad market. The beta coefficient for OGS is nearly the same at 0.65. This is a clear indication that public utility companies like Applicant and the proxy group are less volatile (and less risky) than the broad stock market, and investors expect a return lower than that expected of the market. Reviewing the high and low beta coefficients observed in the proxy group provides a picture of the range that the new company could exhibit in the future.

Proxy Group Beta Coefficients
18-KGSG-560-RTS

Atmos Energy, Corp.	ATO	0.60
Chesapeake Utilities	CPK	0.70
New Jersey Resources, Corp	NJR	0.70
Northwest Natural Gas, Co.	NWN	0.65
One Gas, Inc.	OGS	0.65
South Jersey Industries, Inc.	SJI	0.75
Spire, Inc.	SR	0.65
Southwest Gas Holdings, Inc.	SWX	0.75
	Min	0.60
	Max	0.75
	Mean	0.68

Source: Value-Line Investment Survey, August 31, 2018

Q. Please describe the forecasted CAPM analysis.

A. For the forecasted CAPM, I relied on the expected returns published by J.P. Morgan Asset Management (JPMAM) to establish the expected return for the market.[51] JPMAM publishes 10 to 15-year forecasts of expected returns on dozens of investment asset classes in its annual publication, the Long Term Capital Market Return Assumptions (LTCMRA). JPMAM forecasts an annual return on common stocks of 6.93%. The JPMAM's forecasted returns on common stocks has declined over the past two years; generally a product of the increase in stock prices over the past two years.

Following the calculations and inputs through the CAPM equation in line 2 of the following table, the forecasted return on a risk-free investment, 10-Year U.S. Treasury Bonds, is subtracted from the expected return on common stocks resulting in a risk premium of 3.86%. This risk premium is the additional return necessary to induce investors to take on the added risk associated with common stocks over the risk-free investment. The beta coefficient is applied to the risk premium to ascertain how much of a risk premium is necessary for investors to take on risks of investing in utility stocks as opposed to the risk free U.S. Treasury Bond.

[51] J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2018 Edition, J.P. Morgan Asset Management (published October of 2017). www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

Capital Asset Pricing Model -- Forecasted Risk Premium
Using Forecasted Market Returns & Treasury Bond Yields
18-KGSG-560-RTS

		Low Beta	High Beta	OneGas, Inc. Beta
1) Forecasted Returns on Common Stocks		6.93%	6.93%	6.93%
2) Forecasted Total Return on 10-Year T-Bonds	-	3.07%	3.07%	3.07%
3) Resulting Risk Premium		3.86%	3.86%	3.86%
4) Beta Coefficient	**X**	0.60	0.75	0.65
5) Risk Premium		2.32%	2.90%	2.51%
6) Forecasted Yield on 10-Year T-Bonds	+	3.50%	3.50%	3.50%
7) For Cost of Equity		5.82%	6.40%	6.01%
		6.11%		

1) Forecasted 10 to 15-year annual arithmetic return on stocks for mid-sized companies by J.P. Morgan Asset Management, 2018 Edition.
2) Forecasted 10 to 15-year annual arithmetic return on intermediate term U.S. Government bonds by J.P. Morgan Asset Management, 2018 Edition.
3) Resulting risk premium (1-2).
4) Beta coefficient range of proxy group reported by Value-Line.
5) Row 3 x Row 4 = asset specific risk premium.
6) Forecasted yield on 10-Year U.S. Treasury bonds forecasted by J.P. Morgan Asset Management, 2018 Edition (page 55).
7) Forecasted cost of equity capital row 5 + row 6.

Sources:
J.P. Morgan Asset Management, Long-term Capital Market Return Assumptions, 2018 Edition, J.P. Morgan Asset Management (published October of 2017).
www.jpmorganinstitutional.com/pages/jpmorgan/am/ia/research_and_publications/long-term_capital_market

The expected risk-free yield of 3.50% forecasted by JPMAM is added to the beta specific risk premium to arrive at the cost of equity for the given beta coefficients of 0.60 to 0.75. These results appear low by historic measures of the past 40 years. The results are in line with the returns offered on other investments in the current capital markets. For instance, investors in Applicants' long-term bonds are purchasing bonds with the expectation for returns of less than 4.30%.[52]

Q. Please discuss the historical CAPM analysis.

[52] The yield to maturity on OneGas bonds shown on in the table on p. 45 is 4.32% in October of 2018 and an average of 4.06% over the one-year time period.

A. I performed a CAPM analysis incorporating historic data of returns earned from 1926 through 2017. The process is the same as that applied in the Forecasted CAPM.

Capital Asset Pricing Model -- Historic Risk Premium
Based on Historic Risk Premiums from 1926 to 2017
18-KGSG-560-RTS

		Low Beta	High Beta	OneGas, Inc. Beta
1) Total Returns on Common Stocks		12.10%	12.10%	12.10%
2) Total Return on Government Bonds	-	5.20%	5.20%	5.20%
3) Resulting Risk Premium		6.90%	6.90%	6.90%
4) Beta Coefficient	X	0.60	0.75	0.65
5) Risk Premium		4.14%	5.18%	4.49%
6) Historic Yield on Government Bonds	+	4.38%	4.38%	4.38%
7) Forecasted Cost of Equity Based on Historic Returns		8.52%	9.55%	8.86%
		9.03%		

1) Historic returns on common stocks 1926-2017 (SBBI; Exhibit 2-3)
2) Historic returns on intermediate-term government bonds 1926-2017
3) Resulting risk premium (1-2)
4) Beta coefficient of the proxy group (Reported by Value-Line)
5) Row 3 x Row 4 = Asset Specific Risk Premium
6) Historic year-end yield on intermediate-term government bonds 1926-2017
7) Forecasted cost of equity capital, row 5 + row 6

Sources:
Ibbotson SBBI: 2018 Classic Yearbook (Duff & Phelps) & Value-Line Investment Survey.

If we rely on purely historic data, we have to assume that certain trends observed in the past 80 years will continue in the future. Most notably, we would be assuming that the returns observed on common stocks from decades past will continue in the future, which of course assumes this historical data accurately measures the past returns. There is strong evidence that these frequently-quoted returns do not present a complete picture of historic returns.[53] The simple step of beginning the measurement period in 1926 brings questions as to whether the time period represents all of the modern-era securities trading. Whether or not 1926 is the best point in time to begin measuring historic returns, these historic

[53] McQuarrie, Edward F, "The Myth of 1926: How Much Do We Know Long-Term Returns on U.S. Stocks?", The Journal of Investing; Winter 2009, p. 96.

returns are widely reported and frequently referred to in discussions of the capital markets and potential returns. There are well regarded financial publications that focus solely on this type of historic data and how to apply it in cost of capital studies. Thus, measurements from this time period likely influence expectations despite warnings that surround historic economic growth rates and market returns. I have to agree that the historic data is often cited and is part of the cost of capital universe, but I believe it has significant limitations and policy makers should give it only light consideration in their final decision.

Q. Does that conclude your testimony?

A. Yes, thank you.

Schedule AHG - 1
18-KGSG-560-RTS

Natural Gas LDC Proxy Group Adjustment Clauses
18-KGSG-560-RTS

Value-Line: Gas Distribution Utilities			Fuel	Conservation	Decoupling Full	Decoupling Partial	Infrastr.	Other
Atmos Energy, Corp.	ATO	KS	X			X	X	Bad debts; WNA Adj; Abrev. rate filing; taxes & franchise fees
		KY	X	X		X	X	WNA Adj; EE (lost rev); taxes & franchise fees
		LA	X			X	X	WNA Adj;
		MS	X	X		X	X	WNA; EE (costs & lost contribution to fixed costs)
		TN	X			X		WNA; shared loss of margins from negotiated contracts
		TX	X			X	X	WNA; GRIP; bad debts (commodity cost)
Chesapeake Utilities	CPK	DE	X					taxes & franchise fees
		FL	X	X			X	annual adjustment for repl of obselet pipe; taxes & franchise fees
New Jersey Resources, Corp	NJR	NJ	X	X	X		X	manuf gas remed; taxes & franch fees; low-inc asst;
Northwest Natural Gas, Co.	NWN	OR	X	X		X		WNA; Conservation Adj; manuf gas remediation
		WA	X	X			X	
One Gas, Inc.	OGS	KS	X			X	X	taxes & franchise fees; WNA Adj; Abrev. rate filing
		OK	X	X		X		WNA; Conservation & EE costs; taxes & franchise fees, security
		TX	X			X	X	WNA;
South Jersey Industries, Inc.	SJI	NJ	X	X	X		X	manuf gas remed; taxes & franch fees; low-inc asst;
Spire, Inc.	SR	AL	X			X		WNA; Adj. to compete with alternative fuels-no loss of earnings margins
		MO	X			X	X	taxes & franch fees; low-inc asst;
Southwest Gas Holdings, Inc.	SWX	AZ	X	X		X	X	allows for a delivery charge form of decoupling; Dist-pipe replacement program; taxes & franchise fees
		CA	X		X			
		NV	X		X	X	X	infra-structure replacement program; true-up adjustment for bad-debts costs

Source: S&P Global Market Intelligence, RRA Regulatory Focus Adjustment Clauses, September 28, 2018
The following passage from page 2 of the report provides RRA's definitions of "Full" and "Partial" decoupling.

> Another type of adjustment clause, a decoupling mechanism, enables utilities to offset the effect on revenues of fluctuations in sales caused by customer participation in energy efficiency programs, deviations from “normal” temperature patterns, or economic conditions. Regulatory Research Associates, an offering of S&P Global Market Intelligence, considers a decoupling mechanism that adjusts for all three of these factors to be a “full” decoupling mechanism and designates those that address only one or two of these factors as “partial” decoupling mechanisms. RRA also assigns a partial decoupling tag to those mechanisms that include rate caps or other limitations.

Stocks within *Value Line's* Natural Gas Utility Industry have continued to increase in price in 2018. We believe these movements stem partially from better profits, compared to last year's tallies. Contributing factors include new rates, customer growth, and heightened consumption levels. Another plus here is the generous dividends, which are well covered by corporate earnings. At the time of this writing, no equities were ranked to outpace the market in the year ahead. But that comes as no surprise, since historical price movements of this typically defensive group have tended to be steady.

Weather Conditions

Weather is a factor that affects the demand for natural gas, especially from small commercial businesses and consumers. Not surprisingly, earnings for utilities are vulnerable to seasonal temperature patterns, with consumption normally at its peak during the winter heating months. Unseasonably warm or cold weather can cause substantial volatility in quarterly operating results. Nevertheless, some companies strive to counteract this exposure through temperature-adjusted rate mechanisms, which are available in a number of states. Thus, investors interested in utilities with more-stable profits from one year to the next are advised to look for companies that are able to hedge this risk.

Natural Gas Prices

Natural gas quotations are nowhere close to the highs achieved late last decade, and the picture might not brighten too much for some time. Even though that situation does not augur well for companies that produce this commodity, regulated utility units generally benefit. That's partially because lower gas pricing tends to lead to diminished prices for customers, which may bring down bad-debt expense. Furthermore, there is an increased possibility that homeowners will convert from alternative fuel sources, such as oil or propane, to natural gas. (At the current time, it's estimated that more than 50% of all households within the United States use natural gas.) It is important to state, however, that companies in our category also possess nonregulated operations (see below), which tend to underperform when gas prices are at subdued levels.

Nonregulated Segments

Some of the companies in our group have devoted considerable resources to the nonregulated arena, including pipelines and energy marketing & trading, and we believe that trend will persist in the future. Indeed, these businesses offer opportunities for utilities to diversify their revenue streams. What's more, the fact that nonregulated units can provide potential upside to earnings per share is notable, given that the return on equity is established by the regulatory state commissions (generally in the 10%-12% range) on the regulated divisions. The Tax Cuts and Jobs Act has had a positive impact there, too.

Business Prospects Out To 2021-2023

We are generally upbeat about the sector's operating performance during the coming three to five years. Natural gas should continue to be abundant in the United States, made possible partly by new technologies, so a shortage does not appear probable anytime soon. Furthermore, there are limited alternatives for the services the companies in this category offer. Too, it's a challenge for new entrants in the market, given such factors as the size of existing competitors and the substantial initial capital outlays that are required. Finally, the country's population (now numbering over 320 million) ought to stay on a steady, upward trajectory, which augurs well for future demand for utility services.

INDUSTRY TIMELINESS: 79 (of 97)

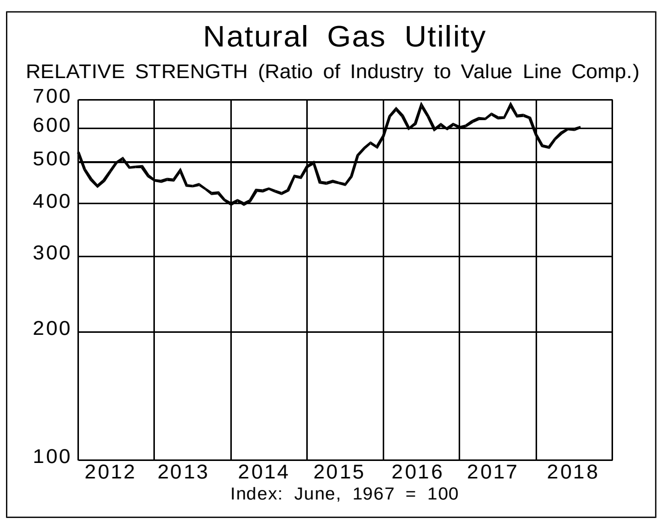
Generous Payouts

The primary attraction of utility equities is their dividend income, which tends to be well covered by corporate earnings. (It's important to mention that the Financial Strength ratings for the 10 companies in our universe continue to be no lower than B+.) At the time of this industry review, the average yield for the group was 2.6%, relative to the *Value Line* median of 2.0%. Standouts include *South Jersey Industries*, *Northwest Natural Gas*, *Spire Inc.*, and *NiSource Inc.* When the financial markets face heightened volatility (which seems to be more often the case lately), solid dividend yields tend to provide a measure of stability.

Conclusion

Stocks within *Value Line's* Natural Gas Utility Industry should draw the attention of income-seeking investors with a conservative bent, since these good-yielding issues boast high marks for Price Stability and most are ranked 1 (Highest) or 2 (Above Average) for Safety. It's important to keep in mind that companies possessing more-established nonregulated operations might offer a higher potential for returns, but profits could be more volatile than for firms with a greater emphasis on the more stable utility segment. As always, our subscribers are advised to carefully examine the following reports before committing funds.

Frederick L. Harris, III



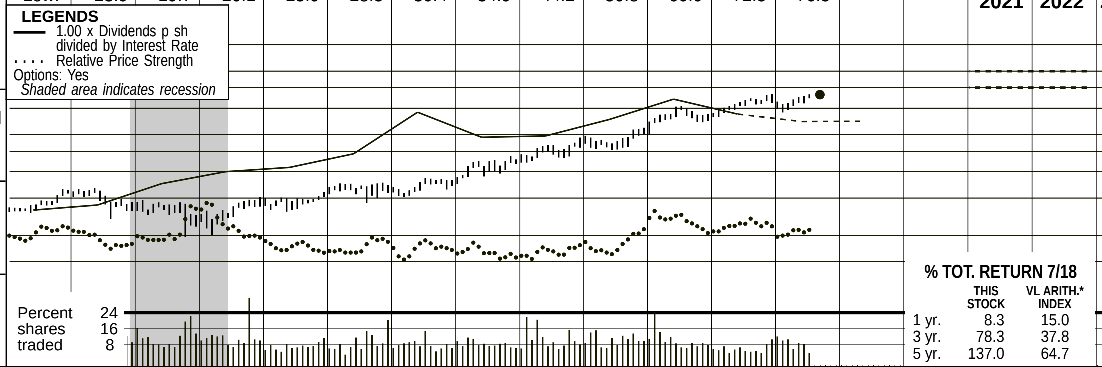
ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE	92.90	P/E RATIO	22.7 (Trailing: 23.5; Median: 16.0)	RELATIVE P/E RATIO	1.22	DIV'D YLD	2.2%	VALUE LINE

TIMELINESS 4 Lowered 6/1/18
SAFETY 1 Raised 6/6/14
TECHNICAL 3 Lowered 8/24/18
BETA .60 (1.00 = Market)

High:	33.5	29.3	30.3	32.0	35.6	37.3	47.4	58.2	64.8	82.0	93.6	94.9
Low:	23.9	19.7	20.1	25.9	28.5	30.4	34.9	44.2	50.8	60.0	72.5	76.5

Target Price Range 2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+30%)	9%
Low	100	(+10%)	4%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	2	8	0	2	0	0	2	7	1
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	181	166	181
to Sell	148	147	192
Hld's(000)	83020	79750	81917

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.3	15.0
3 yr.	78.3	37.8
5 yr.	137.0	64.7

Atmos Energy's history dates back to 1906 in the Texas Panhandle. Over the years, through various mergers, it became part of Pioneer Corporation, and, in 1981, Pioneer named its gas distribution division Energas. In 1983, Pioneer organized Energas as a separate subsidiary and distributed the outstanding shares of Energas to Pioneer shareholders. Energas changed its name to Atmos in 1988. Atmos acquired Trans Louisiana Gas in 1986, Western Kentucky Gas Utility in 1987, Greeley Gas in 1993, United Cities Gas in 1997, and others.

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
79.52	53.69	53.12	48.15	38.10	42.88	49.22	40.82	32.23	26.01	*28.50*	*30.15*	Revenues per sh A	*42.30*
4.19	4.29	4.64	4.72	4.76	5.14	5.42	5.81	6.19	6.62	*7.15*	*7.65*	"Cash Flow" per sh	*8.60*
2.00	1.97	2.16	2.26	2.10	2.50	2.96	3.09	3.38	3.60	*3.95*	*4.20*	Earnings per sh AB	*5.15*
1.30	1.32	1.34	1.36	1.38	1.40	1.48	1.56	1.68	1.80	*1.94*	*2.08*	Div'ds Decl'd per sh C■	*2.50*
5.20	5.51	6.02	6.90	8.12	9.32	8.32	9.61	10.46	10.72	*12.55*	*12.65*	Cap'l Spending per sh	*14.20*
22.60	23.52	24.16	24.98	26.14	28.47	30.74	31.48	33.32	36.74	*42.90*	*41.40*	Book Value per sh	*46.55*
90.81	92.55	90.16	90.30	90.24	90.64	100.39	101.48	103.93	106.10	*111.50*	*116.00*	Common Shs Outst'g D	*130.00*
13.6	12.5	13.2	14.4	15.9	15.9	16.1	17.5	20.8	22.0	*Bold figures are*		Avg Ann'l P/E Ratio	*21.5*
.82	.83	.84	.90	1.01	.89	.85	.88	1.09	1.08	*Value Line*		Relative P/E Ratio	*1.20*
4.8%	5.3%	4.7%	4.2%	4.1%	3.5%	3.1%	2.9%	2.4%	2.3%	*estimates*		Avg Ann'l Div'd Yield	*2.3%*
7221.3	4969.1	4789.7	4347.6	3438.5	3886.3	4940.9	4142.1	3349.9	2759.7	*3180*	*3500*	Revenues ($mill) A	*5500*
180.3	179.7	201.2	199.3	192.2	230.7	289.8	315.1	350.1	382.7	*440*	*485*	Net Profit ($mill)	*670*
38.4%	34.4%	38.5%	36.4%	33.8%	38.2%	39.2%	38.3%	36.4%	36.7%	*27.0%*	*24.5%*	Income Tax Rate	*24.5%*
2.5%	3.6%	4.2%	4.6%	5.6%	5.9%	5.9%	7.6%	10.5%	13.9%	*13.8%*	*13.9%*	Net Profit Margin	*12.2%*
50.8%	49.9%	45.4%	49.4%	45.3%	48.8%	44.3%	43.5%	38.7%	44.0%	*35.5%*	*40.0%*	Long-Term Debt Ratio	*45.0%*
49.2%	50.1%	54.6%	50.6%	54.7%	51.2%	55.7%	56.5%	61.3%	56.0%	*64.5%*	*60.0%*	Common Equity Ratio	*55.0%*
4172.3	4346.2	3987.9	4461.5	4315.5	5036.1	5542.2	5650.2	5651.8	6965.7	*7415*	*8000*	Total Capital ($mill)	*11000*
4136.9	4439.1	4793.1	5147.9	5475.6	6030.7	6725.9	7430.6	8280.5	9259.2	*10400*	*11300*	Net Plant ($mill)	*14700*
5.9%	5.9%	6.9%	6.1%	6.1%	5.9%	6.4%	6.6%	7.2%	6.4%	*7.0%*	*7.5%*	Return on Total Cap'l	*7.5%*
8.8%	8.3%	9.2%	8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	*9.0%*	*10.0%*	Return on Shr. Equity	*11.0%*
8.8%	8.3%	9.2%	8.8%	8.1%	8.9%	9.4%	9.9%	10.1%	9.8%	*9.0%*	*10.0%*	Return on Com Equity	*11.0%*
3.1%	2.7%	3.5%	3.3%	2.8%	4.0%	4.7%	4.9%	5.1%	4.9%	*4.5%*	*5.0%*	Retained to Com Eq	*5.5%*
65%	68%	62%	62%	65%	56%	50%	51%	50%	50%	*49%*	*50%*	All Div'ds to Net Prof	*49%*

CAPITAL STRUCTURE as of 6/30/18
Total Debt $3312.7 mill. **Due in 5 Yrs** $990.0 mill.
LT Debt $2617.9 mill. **LT Interest** $160.0 mill.
(LT interest earned: 6.0x; total interest coverage: 6.0x)
Leases, Uncapitalized Annual rentals $17.2 mill.
Pfd Stock None
Pension Assets-9/17 $508.2 mill.
Oblig. $533.5 mill.
Common Stock 111,200,632 shs.
as of 8/3/18
MARKET CAP: $10.3 billion (Large Cap)

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	47.5	26.4	20.9
Other	634.2	513.2	432.0
Current Assets	681.7	539.6	452.9
Accts Payable	259.4	233.0	198.2
Debt Due	1079.8	447.7	694.8
Other	449.1	332.7	573.0
Current Liab.	1788.3	1013.4	1466.0
Fix. Chg. Cov.	768%	805%	790%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-7.0%	-6.5%	*4.0%*
"Cash Flow"	4.0%	5.5%	*5.5%*
Earnings	6.0%	9.0%	*7.5%*
Dividends	3.0%	4.5%	*7.0%*
Book Value	5.0%	6.0%	*5.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	1258.8	1540.1	686.4	656.8	4142.1
2016	906.2	1132.3	632.9	678.5	3349.9
2017	780.2	988.2	526.5	464.8	2759.7
2018	889.2	1219.4	562.2	*509.2*	*3180*
2019	*950*	*1285*	*665*	*600*	*3500*

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	.96	1.35	.55	.23	3.09
2016	1.00	1.38	.69	.33	3.38
2017	1.08	1.52	.67	.34	3.60
2018	1.40	1.57	.64	*.34*	*3.95*
2019	*1.48*	*1.63*	*.71*	*.38*	*4.20*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.37	.37	.37	.39	1.50
2015	.39	.39	.39	.42	1.59
2016	.42	.42	.42	.45	1.71
2017	.45	.45	.45	.485	1.84
2018	.485	.485	.485		

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to over three million customers through six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Gas sales breakdown for fiscal 2017: 65%, residential; 28%, commercial; 5%, industrial; and 2% other. The company sold Atmos Energy Marketing, 1/17. Officers and directors own approximately 1.4% of common stock (12/17 Proxy). President and Chief Executive Officer: Michael E. Haefner. Inc.: Texas. Address: Three Lincoln Centre, Suite 1800, 5430 LBJ Freeway, Dallas, Texas 75240. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Atmos Energy is about to close the books on a solid fiscal 2018. (Years end September 30th.) Through the first nine months, earnings per share advanced around 10%, to $3.61, compared to the year-earlier tally of $3.27. That was brought about partly by the natural gas distribution division, which benefited from increased rates in the Texas, Mississippi, and Kentucky/Mid-States units. (During the period, it completed 16 rate-case proceedings, resulting in a $10.8 million rise in annual operating income, and other ratemaking efforts were in progress seeking nearly $36 million of annual operating income.) Too, the natural gas distribution segment enjoyed higher net consumption, due mainly to weather that was 36% cooler than the first nine months of fiscal 2017. Meanwhile, results of the pipeline & storage business received a lift in revenues from the Atmos Pipeline-Texas rate case and the Gas Reliability Infrastructure Program filings approved last December and May. Since we think there will be no unpleasant surprises during the fourth quarter, the Dallas-based company's bottom line stands to climb roughly 10%, to $3.95 a share, for the whole year. Assuming that business trends cooperate, fiscal 2019 share net might well grow another 6% or so, to $4.20.

It now appears that capital expenditures for the fiscal year will fall around $1.4 billion. (Management's initial guidance was between $1.3 billion and $1.4 billion.) This would be some 23% higher than the previous year's figure. Similar to fiscal 2017, a considerable portion of the resources, derived primarily from operating cash flows, is being utilized to enhance the safety and reliability of the natural gas distribution and transmission systems.

These shares have been riding high lately. We believe the price action can be traced, to some degree, to Atmos' good profits in the soon-to-conclude fiscal year. Consider, also, the current dividend and possibility of additional steady hikes in the payout (which is well covered). Other pluses are the top Safety rank, lower-than-market Beta coefficient, and high grade for Price Stability. But the stock is a Below Average (4) choice for Timeliness.

Frederick L. Harris, III *August 31, 2018*

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '07, d2¢; '09, 12¢; '10, 5¢; '11, (1¢); Q1 '18, $1.49; Q2, 3¢. Excludes discontinued operations: '11, 10¢; '12, 27¢; '13, 14¢; '17, 13¢. Next egs. rpt. due early Nov.
(C) Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail.
(D) In millions.
(E) Qtrs may not add due to change in shrs outstanding.

Company's Financial Strength	A+
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	95

CHESAPEAKE UTIL. NYSE-CPK

RECENT PRICE **85.00** | P/E RATIO **26.9** (Trailing: 26.8 / Median: 16.0) | RELATIVE P/E RATIO **1.45** | DIV'D YLD **1.8%** | VALUE LINE

TIMELINESS 3 Lowered 3/16/18
SAFETY 2 New 6/5/15
TECHNICAL 2 Raised 8/17/18
BETA .70 (1.00 = Market)

High:	24.8	23.2	23.3	28.1	29.7	32.6	40.8	52.7	61.1	70.0	86.4	87.3
Low:	18.7	14.6	14.7	18.7	24.0	26.6	30.6	37.5	44.4	52.3	63.0	66.4

Target Price Range
2021 | 2022 | 2023

LEGENDS
— 1.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 9/14
Options: Yes
Shaded area indicates recession

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	120	(+40%)	*11%*
Low	90	(+5%)	*4%*

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	6	0	0	9	1
to Sell	0	0	0	1	0	0	1	0	1

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	64	58	86
to Sell	67	48	66
Hld's(000)	11125	10462	10472

Percent shares traded 15 10 5

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	10.5	15.0
3 yr.	72.7	37.8
5 yr.	136.0	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
17.12	19.11	20.70	26.02	23.05	25.41	28.46	19.07	29.93	29.13	27.26	30.73	34.19	30.07	30.60	37.79	*41.45*	*44.00*	Revenues per sh	*55.00*
1.93	2.42	2.26	2.35	2.18	2.52	2.50	2.15	3.50	3.69	3.95	4.35	4.73	5.05	5.16	5.42	*6.10*	*6.45*	"Cash Flow" per sh	*8.25*
.69	1.17	1.09	1.18	1.15	1.29	1.39	1.43	1.82	1.91	1.99	2.26	2.47	2.68	2.86	2.68	*3.15*	*3.35*	Earnings per sh A	*4.50*
.73	.73	.75	.76	.77	.78	.81	.83	.87	.91	.96	1.01	1.07	1.12	1.19	1.26	*1.39*	*1.54*	Div'ds Decl'd per sh B■	*2.00*
1.77	1.39	2.07	3.74	4.87	3.08	3.00	1.89	3.18	3.28	5.00	6.72	6.66	9.47	10.42	10.73	*12.75*	*10.80*	Cap'l Spending per sh	*11.80*
8.03	8.59	9.07	9.60	11.08	11.76	12.02	14.89	15.84	16.78	17.82	19.28	20.59	23.45	27.36	29.75	*31.80*	*34.95*	Book Value per sh	*45.50*
8.31	8.49	8.60	8.82	10.03	10.17	10.24	14.09	14.29	14.35	14.40	14.46	14.59	15.27	16.30	16.34	*17.00*	*17.50*	Common Shs Outst'g C	*20.00*
18.6	12.7	15.0	16.8	17.9	16.7	14.2	14.2	12.2	14.2	14.8	15.6	17.7	19.1	21.8	27.8	*Bold figures are*		Avg Ann'l P/E Ratio	*23.5*
1.02	.72	.79	.89	.97	.89	.85	.95	.78	.89	.94	.88	.93	.96	1.16	1.40	*Value Line*		Relative P/E Ratio	*1.30*
5.7%	4.9%	4.6%	3.8%	3.8%	3.6%	4.1%	4.1%	3.9%	3.4%	3.3%	2.9%	2.4%	2.2%	1.9%	1.7%	*estimates*		Avg Ann'l Div'd Yield	*1.9%*

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
291.4	268.8	427.5	418.0	392.5	444.3	498.8	459.2	498.9	617.6	*705*	*770*	Revenues ($mill)	*1150*
14.4	15.9	26.1	27.6	28.9	32.8	36.1	40.2	44.7	43.8	*55.0*	*60.0*	Net Profit ($mill)	*90.0*
39.1%	41.8%	39.7%	39.4%	40.1%	40.2%	39.9%	39.5%	38.8%	39.5%	*27.5%*	*27.5%*	Income Tax Rate	*27.5%*
4.9%	5.9%	6.1%	6.6%	7.4%	7.4%	7.2%	8.8%	9.0%	7.1%	*7.8%*	*7.8%*	Net Profit Margin	*7.8%*
41.3%	32.0%	28.4%	31.4%	28.4%	29.7%	34.5%	29.4%	23.5%	28.9%	*32.0%*	*32.0%*	Long-Term Debt Ratio	*30.0%*
58.7%	68.0%	71.6%	68.6%	71.6%	70.3%	65.5%	70.6%	76.5%	71.1%	*68.0%*	*68.0%*	Common Equity Ratio	*70.0%*
209.5	308.6	315.9	351.1	358.5	396.4	458.8	507.5	583.0	683.7	*795*	*900*	Total Capital ($mill)	*1300*
280.7	436.4	462.8	487.7	541.8	631.2	689.8	855.0	986.7	1126.0	*1345*	*1455*	Net Plant ($mill)	*1900*
7.9%	6.1%	9.1%	8.9%	8.8%	8.8%	8.5%	8.9%	8.6%	7.3%	*8.0%*	*7.5%*	Return on Total Cap'l	*8.0%*
11.7%	7.6%	11.5%	11.5%	11.2%	11.8%	12.0%	11.2%	10.0%	9.0%	*10.0%*	*10.0%*	Return on Shr. Equity	*10.0%*
11.7%	7.6%	11.5%	11.5%	11.2%	11.8%	12.0%	11.2%	10.0%	9.0%	*10.0%*	*10.0%*	Return on Com Equity	*10.0%*
5.2%	3.8%	6.6%	6.6%	6.4%	7.1%	7.4%	6.8%	6.1%	4.9%	*6.0%*	*5.5%*	Retained to Com Eq	*5.5%*
55%	50%	42%	42%	43%	40%	38%	40%	39%	45%	*43%*	*45%*	All Div'ds to Net Prof	*45%*

CAPITAL STRUCTURE as of 6/30/18
Total Debt $486.9 mill. **Due in 5 Yrs** $325.0 mill.
LT Debt $241.6 mill. **LT Interest** $11.0 mill.
(LT interest earned: 6.7x; total interest coverage: 6.7x) (32% of Cap'l)
Leases, Uncapitalized Annual rentals $2.7 mill.
Pfd Stock None
Pension Assets-12/17 $57.7 mill. **Oblig.** $76.1 mill.
Common Stock 16,378,545 shs. as of 7/31/18

MARKET CAP: $1.4 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	4.2	5.6	4.5
Other	137.0	173.0	111.5
Current Assets	141.2	178.6	116.0
Accts Payable	56.9	74.7	60.8
Debt Due	222.0	260.4	245.3
Other	55.2	77.9	82.4
Current Liab.	334.1	413.0	388.5
Fix. Chg. Cov.	859%	749%	820%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	3.0%	2.5%	*9.0%*
"Cash Flow"	8.5%	7.0%	*8.0%*
Earnings	8.5%	7.5%	*8.5%*
Dividends	4.5%	5.5%	*9.0%*
Book Value	9.5%	10.0%	*9.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	170.1	92.7	91.9	104.5	459.2
2016	146.3	102.3	108.3	142.0	498.9
2017	185.2	125.1	126.9	180.4	617.6
2018	239.4	136.7	*143.3*	*185.6*	*705*
2019	*260*	*155*	*160*	*195*	*770*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1.44	.35	.33	.56	2.68
2016	1.33	.52	.29	.73	2.86
2017	1.17	.37	.42	.72	2.68
2018	1.64	.39	*.40*	*.72*	*3.15*
2019	*1.65*	*.50*	*.45*	*.75*	*3.35*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.257	.257	.27	.27	1.05
2015	.27	.27	.288	.288	1.12
2016	.288	.288	.305	.305	1.19
2017	.305	.305	.325	.325	1.26
2018	.325	.325	.37		

BUSINESS: Chesapeake Utilities Corporation consists of two units: Regulated Energy and Unregulated Energy. The Regulated Energy segment (50% of 2017 revenues) distributes natural gas in Delaware, Maryland, and Florida; distributes electricity in Florida; and transmits natural gas on the Delmarva Peninsula and in Florida. The Unregulated Energy operation (50% of 2017 revenues) wholesales and distributes propane; markets natural gas; and provides other unregulated energy services, including midstream services in Ohio. Officers and directors own 4.2% of common stock; T. Rowe Price, 12.3; BlackRock, 6.2% (4/18 Proxy). CEO: Michael P. McMasters. Inc.: Delaware. Address: 909 Silver Lake Boulevard, Dover, DE 19904. Tel.: (302) 734-6799. Internet: www.chpk.com.

Chesapeake Utilities is enjoying a prosperous 2018. Indeed, through the first half, the bottom line soared nearly 32%, to $2.03 a share, relative to the year-ago tally of $1.54. That was made possible by better showings from both the Regulated Energy division and Unregulated Energy unit. Another positive was a diminished effective income tax rate. At this juncture, we look for 2018 share net to surge around 18%, to $3.15. Concerning next year, $3.35 a share seems plausible (a 6% or so increase), assuming further expansion of operating margins.

This year's expected capital spending budget was boosted nearly 20%, from $181.6 million to $216.4 million. (That's around 23% above the 2017 level of $175.3 million.) Leadership stated that the adjustment reflects additional profitable opportunities identified across the company. In any case, roughly 85% of the expenditures are still dedicated to the Regulated Energy segment, with a focus on the natural gas transmission and distribution businesses. Chesapeake's balance sheet (greater detail below) is sufficient to support those and other initiatives.

Finances are in solid shape. Through the first six months of 2018, cash and equivalents stood at $4.5 million. Long-term debt was only 32% of total capital, while short-term commitments did not appear to pose a major problem. The company also possessed five unsecured bank credit facilities aggregating $220 million. Finally, it has access to $150 million of short-term debt under a revolver that's available until October, 2020. All told, we believe Chesapeake is well positioned to satisfy, for a while, its capital requirements, including investments in new plants and equipment and dividends.

The stock has been trading at relatively high prices these days. That comes as no surprise, given the company's strong earnings thus far in 2018. Consider, too, the 2 (Above Average) Safety rank, below-market Beta coefficient, and decent grade for Price Stability. But the dividend yield is not spectacular, when stacked against those of other equities in *Value Line's* Natural Gas Utility Industry. Meanwhile, the Timeliness rank sits at 3 (Average).

Frederick L. Harris, III *August 31, 2018*

(A) Diluted shrs. Excludes nonrecurring items: '02, d23¢; '08, d7¢; '15, 6¢; '17, 87¢. Excludes discontinued operations: '03, d9¢; '04, d1¢. Next earnings report due early Nov.

(B) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan. Direct stock purchase plan available.

(C) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	75
Price Growth Persistence	85
Earnings Predictability	90

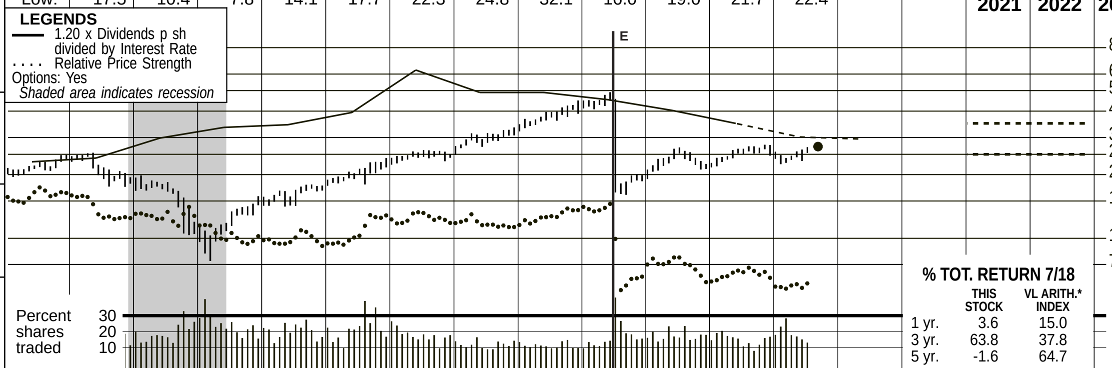
NISOURCE INC. NYSE-NI

RECENT PRICE **27.17** | P/E RATIO **21.9** (Trailing: 35.8, Median: 20.0) | RELATIVE P/E RATIO **1.18** | DIV'D YLD **2.9%** | VALUE LINE

TIMELINESS 4 Lowered 8/10/18
SAFETY 3 New 9/4/15
TECHNICAL 3 Lowered 8/31/18
BETA .55 (1.00 = Market)

High:	25.4	19.8	15.8	18.0	24.0	26.2	33.5	44.9	49.2	26.9	27.8	27.8
Low:	17.5	10.4	7.8	14.1	17.7	22.3	24.8	32.1	16.0	19.0	21.7	22.4

Target Price Range 2021 | 2022 | 2023



% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.6	15.0
3 yr.	63.8	37.8
5 yr.	-1.6	64.7

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	35	(+30%)	10%
Low	25	(-10%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	2	0
Options	0	0	0	11	0	0	0	9	0
to Sell	0	1	0	0	0	0	0	1	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	219	204	193
to Sell	181	146	223
Hld's(000)	300315	294960	301424

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
26.09	23.78	24.63	28.97	27.37	28.96	32.36	24.02	22.99	21.33	16.31	18.04	20.47	14.58	13.90	14.46	**15.05**	**15.65**	Revenues per sh	**17.75**
3.94	3.47	3.47	3.14	3.18	3.20	3.32	2.96	3.19	2.98	3.13	3.41	3.60	2.27	2.71	2.07	**3.00**	**3.00**	"Cash Flow" per sh	**3.45**
1.91	1.59	1.62	1.08	1.14	1.14	1.34	.84	1.06	1.05	1.37	1.57	1.67	.63	1.00	.39	**1.35**	**1.40**	Earnings per sh A	**1.80**
1.16	1.10	.92	.92	.92	.92	.92	.92	.92	.92	.94	.98	1.02	.83	.64	.70	**.78**	**.86**	Div'd Decl'd per sh B ■	**1.20**
2.50	2.19	1.91	2.17	2.33	2.88	3.54	2.81	2.88	3.99	4.83	5.99	6.42	4.26	4.57	5.03	**4.95**	**5.20**	Cap'l Spending per sh	**5.70**
16.78	16.81	17.69	18.09	18.32	18.52	17.24	17.54	17.63	17.71	17.90	18.77	19.54	12.04	12.60	12.82	**14.15**	**14.90**	Book Value per sh C	**15.00**
248.86	262.63	270.63	272.62	273.65	274.18	274.26	276.79	279.30	282.18	310.28	313.68	316.04	319.11	323.16	337.02	**365.00**	**367.00**	Common Shs Outst'g D	**350.00**
10.8	12.2	13.0	21.4	19.2	18.8	12.1	14.3	15.3	19.4	17.9	18.9	22.7	37.3	23.2	NMF	*Bold figures are*		Avg Ann'l P/E Ratio	**16.0**
.59	.70	.69	1.14	1.04	1.00	.73	.95	.97	1.22	1.14	1.06	1.19	1.88	1.22	NMF	*Value Line*		Relative P/E Ratio	**.90**
5.6%	5.7%	4.4%	4.0%	4.2%	4.3%	5.7%	7.6%	5.7%	4.5%	3.8%	3.3%	2.7%	3.5%	2.8%	2.8%	*estimates*		Avg Ann'l Div'd Yield	**4.0%**

CAPITAL STRUCTURE as of 6/30/18
Total Debt $8290.2 mill. **Due in 5 Yrs** $2598.8 mill.
LT Debt $7092.5 mill. **LT Interest** $400 mill.
(Interest cov. earned: 2.5x) (60% of Cap'l)

Leases, Uncapitalized Annual rentals $13.8 mill.
Pension Assets-12/17 $2.75 bill. **Oblig.** $2.42 bill.

Pfd Stock None

Common Stock 363,036,685 shs.
as of 7/24/18
MARKET CAP: $9.9 billion (Large Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
8874.2	6649.4	6422.0	6019.1	5061.2	5657.3	6470.6	4651.8	4492.5	4874.6	**5500**	**5750**	Revenues ($mill)	**6650**
369.8	231.2	294.6	303.8	410.6	490.9	530.7	198.6	328.1	128.6	**495**	**515**	Net Profit ($mill)	**675**
33.4%	41.8%	32.4%	35.0%	34.4%	34.8%	36.9%	41.6%	35.7%	71.0%	**21.0%**	**21.0%**	Income Tax Rate	**21.0%**
- -	- -	- -	- -	- -	- -	- -	- -	2.9%	2.0%	**2.0%**	**2.0%**	AFUDC % to Net Profit	**2.0%**
55.7%	55.1%	54.7%	55.6%	55.1%	56.3%	56.9%	60.7%	59.8%	63.5%	**59.0%**	**59.0%**	Long-Term Debt Ratio	**61.0%**
44.3%	44.9%	45.3%	44.4%	44.9%	43.7%	43.1%	39.3%	40.2%	36.5%	**41.0%**	**41.0%**	Common Equity Ratio	**39.0%**
10673	10819	10859	11264	12373	13480	14331	9792.0	10129	11832	**12675**	**13351**	Total Capital ($mill)	**15005**
10276	10592	11097	11800	12916	14365	16017	12112	13068	14360	**15077**	**15680**	Net Plant ($mill)	**17135**
5.2%	4.0%	4.5%	4.4%	5.0%	5.2%	5.3%	4.0%	5.0%	2.6%	**5.5%**	**5.0%**	Return on Total Cap'l	**6.0%**
7.8%	4.8%	6.0%	6.1%	7.4%	8.3%	8.6%	5.2%	8.1%	3.0%	**9.5%**	**9.5%**	Return on Shr. Equity	**11.5%**
7.8%	4.8%	6.0%	6.1%	7.4%	8.3%	8.6%	5.2%	8.1%	3.0%	**9.5%**	**9.5%**	Return on Com Equity	**11.5%**
2.5%	NMF	.8%	.9%	2.5%	3.1%	3.4%	NMF	3.0%	NMF	**4.0%**	**3.5%**	Retained to Com Eq	**4.0%**
68%	110%	87%	85%	67%	62%	61%	NMF	63%	NMF	**58%**	**61%**	All Div'ds to Net Prof	**67%**

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	26.4	29.0	68.2
Other	1735.7	1734.3	1247.5
Current Assets	1762.1	1763.3	1315.7
Accts Payable	539.4	625.6	455.0
Debt Due	1851.1	1490.0	1197.7
Other	1061.7	1062.8	907.7
Current Liab.	3452.2	3178.4	2560.4
Fix. Chg. Cov.	245%	259%	246%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-6.5%	-6.5%	3.5%
"Cash Flow"	-3.0%	-5.5%	6.5%
Earnings	-5.0%	-10.5%	18.0%
Dividends	-2.5%	-5.0%	9.0%
Book Value	-4.0%	-7.0%	3.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1852.2	884.6	817.2	1097.8	4651.8
2016	1436.6	897.6	861.3	1297.0	4492.5
2017	1598.6	990.7	917.0	1368.3	4874.6
2018	1750.8	1007.0	**1042.2**	**1700**	**5500**
2019	**1900**	**1050**	**1000**	**1800**	**5750**

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.61	d.23	.05	.20	.63
2016	.58	.09	.07	.27	1.01
2017	.65	d.14	.04	d.16	.39
2018	.81	.07	**.07**	**.40**	**1.35**
2019	**.70**	**.15**	**.10**	**.45**	**1.40**

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.25	.25	.26	.26	1.02
2015	.26	.26	.155	.155	.83
2016	.155	.155	.165	.165	.64
2017	.175	.175	.175	.175	.70
2018	.195	.195	.195		

BUSINESS: NiSource Inc. is a holding company for Northern Indiana Public Service Company (NIPSCO), which supplies electricity and gas to the northern third of Indiana. Customers: 461,000 electric in Indiana, 3.4 million gas in Indiana, Ohio, Pennsylvania, Kentucky, Virginia, Maryland, Massachusetts through its Columbia subsidiaries. Revenue breakdown, 2017: electrical, 36%; gas, 63%; other, less than 1%. Generating sources, 2017: coal, 65.2%; purchased & other, 34.8%. 2017 reported depreciation rates: 3.4% electric, 2.1% gas. Has 8,175 employees. Chairman: Richard L. Thompson. President & Chief Executive Officer: Joseph Hamrock. Incorporated: Indiana. Address: 801 East 86th Ave., Merrillville, Indiana 46410. Tel.: 877-647-5990. Internet: www.nisource.com.

NiSource recorded improved second-quarter performance. Revenues expanded 2% year over year to $1.0 billion, aided by higher income allowed from recent rate cases. New rates were settled in Maryland, and other decisions helped bring up the take. However, the cost of sales rose, as a lower margin on transmission was earned. Meantime, a much-lower loss on the early extinguishment of debt was recorded, which allowed earnings to rebound to $0.07 per share. The company is poised for solid second-half results, as approval for a few additional infrastructure repalcement trackers was already received. Too, other decisions on some of its cases are pending, including one for its Indiana Gas business, which would allow $107 million in new revenues, if approved. Meantime, fourth-quarter decisions are likely, concerning its Pennsylvania and Ohio dockets; the latter would allow up to $207 million in new revenues. Still, we have inched down our full-year share-net estimate by a nickel, to $1.35.

Long-term outcomes ought to benefit from a few rate cases. NiSource has received several rulings that will lead to a higher top line, while allowing for better system reliability. Too, it placed two major electric projects into service, which should increase access to wind and solar while lowering costs for consumers. These will reduce coal use for power generation by around 50% by 2023. These factors ought to allow earnings to reach $1.40 in 2019, and $1.80 by the 2021-2023 period.

The company has stirred up its financing mix. It sold around 25 million shares in May for $600 million, $400 million of preferred stock in June, and $350 million of five-year notes. These funds were used to buy back $760 million in debt through tender options. NiSource will likely raise further capital, as management expects to spend between $1.6 billion and $1.8 billion annually on capital projects.

Untimely shares of NiSource are not attractive at the recent quotation. They are trading within our long-term Target Price Range, and the dividend yield does not stand out for a utility. In addition, financial leverage is still higher than others in the industry. Investors would be best served waiting for a price dip.

John E. Seibert III *August 31, 2018*

(A) Dil. EPS. Excl. nonrec. gains (losses): '05, (4¢); gains (losses) on disc. ops.: '05, 10¢; '06, (11¢); '07, 3¢; '08, ($1.14); '15, (30¢). Next egs. report due late October. Qtl'y egs. may not sum to total due to rounding.
(B) Div'ds historically paid in mid-Feb., May, Aug., Nov. ■ Div'd reinv. avail.
(C) Incl. intang in '17: $1922.4 million, $5.70/sh.
(D) In mill.
(E) Spun off Columbia Pipeline Group (7/15)

Company's Financial Strength	B+
Stock's Price Stability	95
Price Growth Persistence	NMF
Earnings Predictability	45

NEW JERSEY RES. NYSE-NJR

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	VALUE LINE
46.35	19.9	(Trailing: 15.7) (Median: 16.0)	1.07	2.4%	

TIMELINESS	3	Lowered 8/17/18
SAFETY	1	Raised 9/15/06
TECHNICAL	3	Lowered 8/31/18

BETA .70 (1.00 = Market)

High:	18.8	20.6	21.2	22.0	25.2	25.1	23.8	32.1	34.1	38.9	45.4	47.6
Low:	15.2	12.3	15.0	16.7	19.8	19.3	19.5	21.9	26.8	30.5	33.7	35.6

Target Price Range

2021	2022	2023

2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+20%)	7%
Low	45	(-5%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	6	8	1	7	1	1	1	1	1
to Sell	0	2	1	1	1	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	113	109	126
to Sell	91	80	115
Hld's(000)	66473	56723	57945

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	12.7	15.0
3 yr.	74.1	37.8
5 yr.	140.6	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
22.06	31.14	30.44	38.10	39.81	36.31	45.37	31.17	32.05	36.30	27.08	38.38	44.40	32.09	21.90	26.28	**32.95**	**30.35**	Revenues per sh A	**33.15**
1.07	1.19	1.25	1.31	1.37	1.22	1.81	1.58	1.63	1.70	1.86	1.93	2.73	2.52	2.46	2.68	**3.65**	**3.80**	"Cash Flow" per sh	**4.20**
.70	.79	.85	.88	.93	.78	1.35	1.20	1.23	1.29	1.36	1.37	2.08	1.78	1.61	1.73	**2.65**	**2.75**	Earnings per sh B	**2.95**
.40	.41	.43	.45	.48	.51	.56	.62	.68	.72	.77	.81	.86	.93	.98	1.04	**1.10**	**1.12**	Div'ds Decl'd per sh C■	**1.24**
.51	.57	.72	.64	.64	.73	.86	.90	1.05	1.13	1.26	1.33	1.52	3.76	4.15	3.80	**2.20**	**2.25**	Cap'l Spending per sh	**2.35**
4.35	5.13	5.62	5.30	7.50	7.75	8.64	8.29	8.81	9.36	9.80	10.65	11.48	12.99	13.58	14.33	**15.95**	**17.60**	Book Value per sh D	**22.70**
83.00	81.70	83.22	82.64	82.88	83.22	84.12	83.17	82.35	82.89	83.05	83.32	84.20	85.19	85.88	86.32	**86.50**	**86.50**	Common Shs Outst'g E	**86.50**
14.7	14.0	15.3	16.8	16.1	21.6	12.3	14.9	15.0	16.8	16.8	16.0	11.7	16.6	21.3	22.4	*Bold figures are*		Avg Ann'l P/E Ratio	**17.0**
.80	.80	.81	.89	.87	1.15	.74	.99	.95	1.05	1.07	.90	.62	.84	1.12	1.09	*Value Line*		Relative P/E Ratio	**.95**
3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	3.3%	3.5%	3.7%	3.3%	3.4%	3.7%	3.5%	3.1%	2.9%	2.7%	*estimates*		Avg Ann'l Div'd Yield	**2.5%**

CAPITAL STRUCTURE as of 6/30/18
Total Debt $1317.8 mill. **Due in 5 Yrs** $694.5 mill.
LT Debt $1220.2 mill. **LT Interest** $44.9 mill.
Incl. $39.7 mill. capitalized leases.
(LT interest earned: 5.0x; total interest coverage: 5.0x)
Pension Assets-9/17 $343.3 mill.
Oblig. $472.9 mill.
Pfd Stock None

Common Stock 88,276,811 shs.
as of 8/3/18
MARKET CAP: $4.1 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
3816.2	2592.5	2639.3	3009.2	2248.9	3198.1	3738.1	2734.0	1880.9	2268.6	**2850**	**2625**	Revenues ($mill) A	**2870**
113.9	101.0	101.8	106.5	112.4	113.7	176.9	153.7	138.1	149.4	**230**	**240**	Net Profit ($mill)	**260**
37.8%	27.1%	41.4%	30.2%	7.1%	25.4%	30.2%	26.3%	15.5%	17.2%	**16.5%**	**15.0%**	Income Tax Rate	**15.0%**
3.0%	3.9%	3.9%	3.5%	5.0%	3.6%	4.7%	5.6%	7.3%	6.6%	**8.1%**	**9.1%**	Net Profit Margin	**9.0%**
38.5%	39.8%	37.2%	35.5%	39.2%	36.6%	38.2%	43.2%	47.7%	44.6%	**44.5%**	**42.5%**	Long-Term Debt Ratio	**38.0%**
61.5%	60.2%	62.8%	64.5%	60.8%	63.4%	61.8%	56.8%	52.3%	55.4%	**55.5%**	**57.5%**	Common Equity Ratio	**62.0%**
1182.1	1144.8	1154.4	1203.1	1339.0	1400.3	1564.4	1950.6	2230.1	2233.7	**2480**	**2645**	Total Capital ($mill)	**3160**
1017.3	1064.4	1135.7	1295.9	1484.9	1643.1	1884.1	2128.3	2407.7	2609.7	**2660**	**2715**	Net Plant ($mill)	**2880**
10.7%	9.7%	9.7%	9.7%	9.2%	9.0%	12.1%	8.6%	6.9%	7.7%	**10.5%**	**10.0%**	Return on Total Cap'l	**9.0%**
15.7%	14.6%	14.0%	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	**16.5%**	**15.5%**	Return on Shr. Equity	**13.0%**
15.7%	14.6%	14.0%	13.7%	13.8%	12.8%	18.3%	13.9%	11.8%	12.1%	**16.5%**	**15.5%**	Return on Com Equity	**13.0%**
9.5%	7.2%	6.7%	6.2%	6.2%	5.2%	11.0%	7.0%	4.8%	5.0%	**10.0%**	**9.5%**	Retained to Com Eq	**7.5%**
40%	50%	52%	55%	55%	59%	40%	50%	60%	59%	**41%**	**40%**	All Div'ds to Net Prof	**42%**

CURRENT POSITION ($MILL.)

	2016	2017	6/30/18
Cash Assets	37.5	2.2	1.1
Other	569.8	577.2	735.8
Current Assets	607.3	579.4	736.9
Accts Payable	269.8	280.6	311.2
Debt Due	183.2	431.4	97.6
Other	118.6	90.9	98.1
Current Liab.	571.6	802.9	506.9
Fix. Chg. Cov.	669%	543%	550%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-3.5%	-3.5%	*3.5%*
"Cash Flow"	7.0%	8.0%	*8.5%*
Earnings	7.0%	5.5%	*9.5%*
Dividends	7.5%	6.5%	*4.0%*
Book Value	7.0%	8.0%	*9.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	824.1	1013.1	458.5	438.3	2734.0
2016	444.3	574.2	393.2	469.2	1880.9
2017	541.1	733.5	457.5	536.5	2268.6
2018	705.3	1019.0	543.4	***582.3***	***2850***
2019	***725***	***785***	***520***	***595***	***2625***

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	.65	1.16	.03	d.06	1.78
2016	.58	.91	.13	d.02	1.61
2017	.47	1.21	.20	d.14	1.73
2018	1.56	1.62	d.09	***d.44***	***2.65***
2019	***1.59***	***1.27***	***.23***	***d.34***	***2.75***

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.21	.21	.21	.23	.86
2015	.23	.23	.23	.24	.93
2016	.24	.24	.24	.255	.98
2017	.255	.255	.255	.273	1.04
2018	.273	.273	.273		

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in NJ, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had 529,810 cust. at 9/30/17 in Monmouth and Ocean and other N.J. counties. Fiscal 2017 volume: 297 bill. cu. ft. (19% interruptible, 21% res., commercial & elec. utility, 60% incentive programs). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2017 dep. rate: 2.7%. Has 1,052 empls. Off./dir. own 1.5% of common; BlackRock, 13.0%; Vanguard, 8.9% (12/17 Proxy). Chrmn., CEO & Pres.: Laurence M. Downes. Inc.: NJ Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-938-1480. Web: www.njresources.com.

Since our June review, shares of New Jersey Resources have continued to climb higher. Indeed, over that interim, the stock's price has advanced approximately 7%.

Meanwhile, the company posted mixed June-period financial results. On the upside, the top line rose almost 19%, to $543.4 million. This largely reflected commodity fluctuations, which resulted in a more than 30% rise in non utility volumes, to $438.9 million. Alternatively, revenue contributions from the utility segment fell roughly 14%, to $104.5 million. On the profitability front, total expenses rose 10.8% as a percentage of the top line, due to more costly nonutility gas purchases and rising operating & maintenance expenses. On balance, the uptick in costs far outweighed the top line growth, and these factors equated to a sharp drop in the bottom line, which fell markedly into negative territory, to a loss of $0.09 a share. This was well below our call for earnings of $0.15. However, a better-than-expected first half may well keep NJR on track for healthy overall gains this year.

At this time, we have left our 2018 bottom-line estimate unchanged at $2.65 a share. New Jersey Resources appears poised to register a revenue advance of more than 25% this year, to $2.85 billion. This ought to largely stem from volume gains at the nonutility business, coupled with new customer accounts at the New Jersey Natural Gas (NJNG) regulated utility operations. NJNG added 6,936 new customer meters during the first nine months of this year. What's more, the company anticipates adding 27,000-29,000 additional accounts from 2018-2020. In sum, NJR's share net is on pace to grow more than 50% this year, which falls in line with management's recently released guidance range of $2.60-$2.70 a share.

These top-quality shares have a dividend yield that is low for a utility. They are ranked 3 (Average) for Timeliness. Additionally, the equity offers unexciting 3- to 5-year capital gains potential. Indeed, NJR's steadily rising quotation places it inside our Target Price Range.

Bryan J. Fong *August 31, 2018*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Qtly egs may not sum to total due to change in shares outstanding. Next earnings report due late Oct.
(C) Dividends historically paid in early Jan., April, July, and October. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2017: $375.9 million, $4.36/share.
(E) In millions, adjusted for splits.

Company's Financial Strength	A+
Stock's Price Stability	80
Price Growth Persistence	50
Earnings Predictability	50

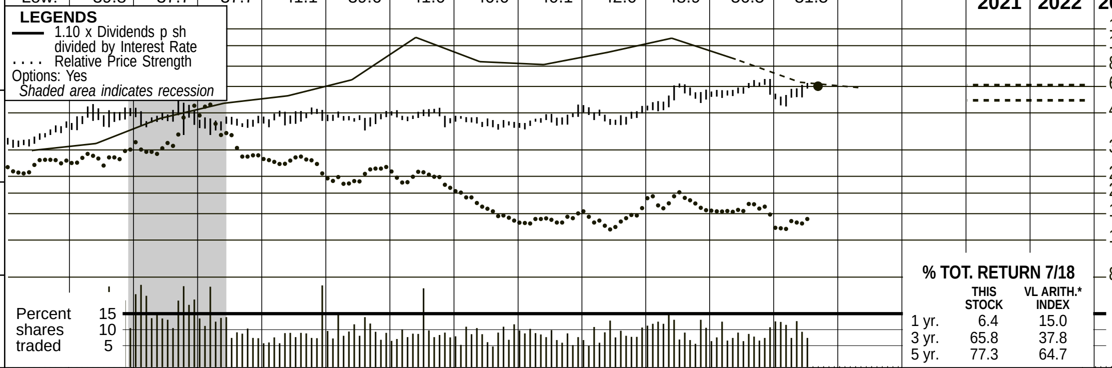
N.W. NAT'L GAS NYSE-NWN

RECENT PRICE 64.30 | P/E RATIO 27.8 (Trailing: NMF / Median: 20.0) | RELATIVE P/E RATIO 1.49 | DIV'D YLD 2.9% | VALUE LINE

TIMELINESS 5 Lowered 8/17/18
SAFETY 1 Raised 3/18/05
TECHNICAL 2 Lowered 8/31/18
BETA .65 (1.00 = Market)

High:	52.8	55.2	46.5	50.9	49.0	50.8	46.6	52.6	52.3	66.2	69.5	66.6
Low:	39.8	37.7	37.7	41.1	39.6	41.0	40.0	40.1	42.0	48.9	56.5	51.5

Target Price Range
2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(Nil)	4%
Low	55	(-15%)	Nil

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	1	0	0	0	0
Options	0	0	0	0	12	0	0	4	0
to Sell	0	0	0	0	2	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	101	91	94
to Sell	83	70	106
Hld's(000)	21966	19201	19492

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	6.4	15.0
3 yr.	65.8	37.8
5 yr.	77.3	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
25.07	23.57	25.69	33.01	37.20	39.13	39.16	38.17	30.56	31.72	27.14	28.02	27.64	26.39	23.61	26.52	***26.10***	***27.65***	Revenues per sh	***28.45***
3.65	3.85	3.92	4.34	4.76	5.41	5.31	5.20	5.18	5.00	4.94	5.04	5.05	4.91	4.93	1.04	***4.85***	***5.65***	"Cash Flow" per sh	***6.35***
1.62	1.76	1.86	2.11	2.35	2.76	2.57	2.83	2.73	2.39	2.22	2.24	2.16	1.96	2.12	d1.94	***2.25***	***2.45***	Earnings per sh A	***3.50***
1.26	1.27	1.30	1.32	1.39	1.44	1.52	1.60	1.68	1.75	1.79	1.83	1.85	1.86	1.87	1.88	***1.89***	***2.00***	Div'ds Decl'd per sh B■	***2.20***
3.11	4.90	5.52	3.48	3.56	4.48	3.92	5.09	9.35	3.76	4.91	5.13	4.40	4.37	4.87	7.43	***6.80***	***6.65***	Cap'l Spending per sh	***6.25***
18.88	19.52	20.64	21.28	22.01	22.52	23.71	24.88	26.08	26.70	27.23	27.77	28.12	28.47	29.71	25.85	***26.35***	***27.30***	Book Value per sh D	***29.40***
25.59	25.94	27.55	27.58	27.24	26.41	26.50	26.53	26.58	26.76	26.92	27.08	27.28	27.43	28.63	28.74	***29.50***	***30.00***	Common Shs Outst'g C	***32.00***
17.2	15.8	16.7	17.0	15.9	16.7	18.1	15.2	17.0	19.0	21.1	19.4	20.7	23.7	26.9	NMF	*Bold figures are*		Avg Ann'l P/E Ratio	***17.0***
.94	.90	.88	.91	.86	.89	1.09	1.01	1.08	1.19	1.34	1.09	1.09	1.19	1.41	NMF	*Value Line*		Relative P/E Ratio	***.95***
4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	3.3%	3.7%	3.6%	3.9%	3.8%	4.2%	4.1%	4.0%	3.3%	3.0%	*estimates*		Avg Ann'l Div'd Yield	***3.7%***

CAPITAL STRUCTURE as of 6/30/18
Total Debt $805.9 mill. **Due in 5 Yrs** $360.0 mill.
LT Debt $683.9 mill. **LT Interest** $40.0 mill.

(Total interest coverage: 3.2x)

Pension Assets-12/17 $287.9 mill. **Oblig.** $486.3 mill.

Pfd Stock None

Common Stock 28,800,482 shares as of 7/27/18

MARKET CAP $1.9 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
1037.9	1012.7	812.1	848.8	730.6	758.5	754.0	723.8	676.0	762.2	***770***	***830***	Revenues ($mill)	***910***
68.5	75.1	72.7	63.9	59.9	60.5	58.7	53.7	58.9	d55.6	***77.0***	***80.0***	Net Profit ($mill)	***90.0***
36.9%	38.3%	40.5%	40.4%	42.4%	40.8%	41.5%	40.0%	40.9%	NMF	***21.0%***	***21.0%***	Income Tax Rate	***21.0%***
6.6%	7.4%	8.9%	7.5%	8.2%	8.0%	7.8%	7.4%	8.7%	NMF	***8.6%***	***8.8%***	Net Profit Margin	***12.3%***
44.9%	47.7%	46.1%	47.3%	48.5%	47.6%	44.8%	42.5%	44.4%	47.9%	***47.5%***	***47.0%***	Long-Term Debt Ratio	***46.5%***
55.1%	52.3%	53.9%	52.7%	51.5%	52.4%	55.2%	57.5%	55.6%	52.1%	***52.5%***	***53.0%***	Common Equity Ratio	***53.5%***
1140.4	1261.8	1284.8	1356.2	1424.7	1433.6	1389.0	1357.7	1529.8	1426.0	***1485***	***1550***	Total Capital ($mill)	***1750***
1549.1	1670.1	1854.2	1893.9	1973.6	2062.9	2121.6	2182.7	2260.9	2255.0	***2345***	***2440***	Net Plant ($mill)	***2745***
7.7%	7.3%	7.0%	6.2%	5.7%	5.8%	5.8%	5.5%	5.1%	NMF	***5.5%***	***6.0%***	Return on Total Cap'l	***7.5%***
10.9%	11.4%	10.5%	8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	***8.5%***	***9.0%***	Return on Shr. Equity	***12.0%***
10.9%	11.4%	10.5%	8.9%	8.2%	8.1%	7.6%	6.9%	6.9%	NMF	***8.5%***	***9.0%***	Return on Com Equity	***12.0%***
4.5%	5.0%	4.0%	2.4%	1.6%	1.5%	1.1%	.6%	.9%	NMF	***1.5%***	***1.5%***	Retained to Com Eq	***4.5%***
59%	56%	61%	73%	80%	81%	85%	92%	87%	NMF	***84%***	***82%***	All Div'ds to Net Prof	***63%***

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	3.5	3.5	8.8
Other	284.6	266.4	172.0
Current Assets	288.1	269.9	180.8
Accts Payable	85.7	112.3	70.6
Debt Due	93.3	150.9	121.9
Other	95.5	118.7	105.4
Current Liab.	274.5	381.9	297.9
Fix. Chg. Cov.	390%	362%	320%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-3.5%	-3.0%	*2.0%*
"Cash Flow"	-3.0%	-6.5%	*10.0%*
Earnings	-11.5%	-22.0%	*30.5%*
Dividends	3.0%	1.5%	*2.5%*
Book Value	2.5%	1.0%	*1.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	261.7	138.3	93.1	230.7	723.8
2016	255.6	99.2	87.7	233.5	676.0
2017	297.3	136.3	88.2	240.4	762.2
2018	264.7	124.6	***115***	***265.7***	***770***
2019	***300***	***130***	***120***	***280***	***830***

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1.04	.08	d.24	1.08	1.96
2016	1.33	.07	d.29	1.01	2.12
2017	1.40	.10	d.30	d3.14	d1.94
2018	1.44	d.01	***d.30***	***1.12***	***2.25***
2019	***1.50***	***.10***	***d.30***	***1.15***	***2.45***

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.460	.460	.460	.465	1.85
2015	.465	.465	.465	.4675	1.86
2016	.4675	.4675	.4675	.470	1.87
2017	.470	.470	.470	.4725	1.88
2018	.4725	.4725	.4725		

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 1000 communities, 735,000 customers, in Oregon (89% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 3.7 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 38%; commercial, 22%; industrial, gas transportation, 40%. Employs 1,146. BlackRock Inc. owns 13.1% of shares; officers and directors, 1.2% (4/18 proxy). CEO: David H. Anderson. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Tel.: 503-226-4211. Int.: www.nwnatural.com.

Northwest Natural Gas had a worse-than-expected second-quarter performance. Revenues fell to $124.6 million, hurt by warmer weather. Margins on natural gas increased and interest expense was reduced, but higher maintenance expense was incurred during the quarter. These factors caused a net loss of $0.01 per share. Still, the company will probably have improved results over the coming quarters, as its Mist storage facility will likely come on line in December, should current schedules hold. This ought to allow for no-notice service to Portland General Electric, boosting revenues. This project cost around $130 million, and included the development of a new pipeline and reservoir. Meantime, recent acquisitions will help improve income going forward. In all, we think the company will earn $2.25 per share in 2018.

The company reached a deal to divest its stake in the Gill Ranch Storage facility. Under the terms of the deal, SENSA Holdings would pay $25 million for NWN's 75% interest in the natural gas storage operations in Fresno, CA. In addition, it could pay up to $26.5 million in contingent consideration. This deal is expected to close in the first half of 2019. Overall, we like the deal, as it improves the corporate finances, considering NWN has made several other purchases. Too, it allows for some risk-free upside should contingent metrics be hit, and will allow for less volatile operations.

The expansion into water utilities in the Pacific Northwest should drive long-term growth. The company has reached deals to purchase four water utilities, and is awaiting approvals from state regulatory bodies. This ought to boost top-line expansion, while allowing earnings to grow. Meantime, we think that some back-office synergies will be achieved. Overall, we think Northwest Natural Gas will earn $2.45 per share in 2019, and $3.50 by the 2021-2023 period.

Shares of Northwest Natural Gas are ranked Lowest for Timeliness (5). Too, they are trading near the high end of our long-term Target Price Range, and the dividend yield does not stand out for a utility. As such, most of the good news appears to be priced into the stock already.

John E. Seibert III *August 31, 2018*

(A) Diluted earnings per share. Excludes nonrecurring items: '06, ($0.06); '08, ($0.03); '09, 6¢; May not sum due to rounding. Next earnings report due in early November.
(B) Dividends historically paid in mid-February, May, August, and November.
■ Dividend reinvestment plan available.
(C) In millions.
(D) Includes intangibles. In 2017: $356.6 million, $12.40/share.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	20
Earnings Predictability	15

ONE GAS, INC. NYSE-OGS

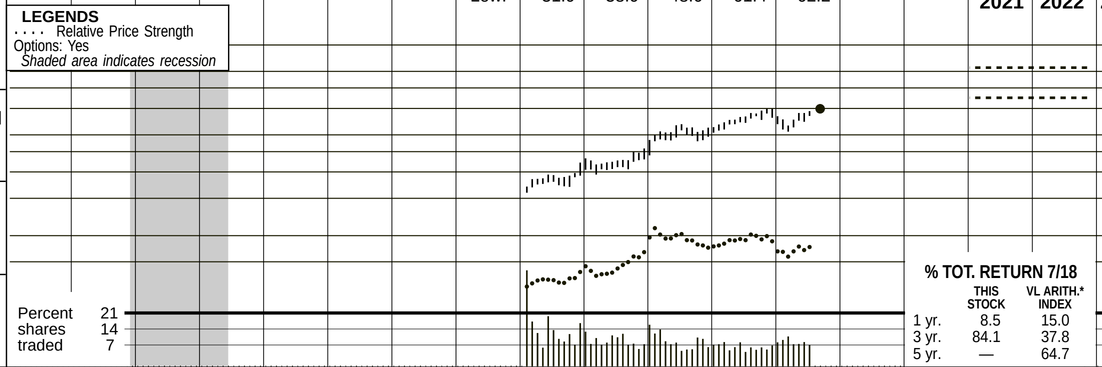
RECENT PRICE 79.87 | P/E RATIO 23.4 (Trailing: 23.5 Median: NMF) | RELATIVE P/E RATIO 1.26 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS **3** Lowered 8/31/18
SAFETY **2** New 6/2/17
TECHNICAL **3** Lowered 8/24/18
BETA .65 (1.00 = Market)

	2014	2015	2016	2017	2018
High:	44.3	51.8	67.4	79.5	80.7
Low:	31.9	38.9	48.0	61.4	62.2

Target Price Range 2021 | 2022 | 2023

LEGENDS
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	125	(+55%)	14%
Low	90	(+15%)	6%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	1	0
Options	0	0	0	0	6	0	0	3	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	96	122	115
to Sell	122	88	160
Hld's(000)	43216	38434	38929

Percent shares traded 21 14 7

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	8.5	15.0
3 yr.	84.1	37.8
5 yr.	—	64.7

The shares of ONE Gas, Inc. began trading "regular-way" on the New York Stock Exchange on February 3, 2014. That happened as a result of the separation of ONEOK's natural gas distribution operation. Regarding the details of the spinoff, on January 31, 2014, ONEOK distributed one share of OGS common stock for every four shares of ONEOK common stock held by ONEOK shareholders of record as of the close of business on January 21. It should be mentioned that ONEOK did not retain any ownership interest in the new company.

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
--	--	--	--	--	--	34.92	29.62	27.30	29.43	*32.20*	*34.35*	Revenues per sh	*40.00*
--	--	--	--	--	--	4.52	4.82	5.43	5.96	*6.35*	*6.65*	"Cash Flow" per sh	*8.20*
--	--	--	--	--	--	2.07	2.24	2.65	3.02	*3.35*	*3.55*	Earnings per sh A	*4.75*
--	--	--	--	--	--	.84	1.20	1.40	1.68	*1.84*	*2.00*	Div'ds Decl'd per sh B■	*2.50*
--	--	--	--	--	--	5.70	5.63	5.91	6.81	*7.30*	*7.40*	Cap'l Spending per sh	*7.50*
--	--	--	--	--	--	34.45	35.24	36.12	37.47	*40.25*	*39.20*	Book Value per sh	*43.40*
--	--	--	--	--	--	52.08	52.26	52.28	52.31	*52.50*	*53.00*	Common Shs Outst'g C	*55.00*
--	--	--	--	--	--	17.8	19.8	22.7	23.5	*Bold figures are*		Avg Ann'l P/E Ratio	*22.5*
--	--	--	--	--	--	.94	1.00	1.20	1.18	*Value Line*		Relative P/E Ratio	*1.25*
--	--	--	--	--	--	2.3%	2.7%	2.3%	2.4%	*estimates*		Avg Ann'l Div'd Yield	*2.3%*
--	--	--	--	--	--	1818.9	1547.7	1427.2	1539.6	*1690*	*1820*	Revenues ($mill)	*2200*
--	--	--	--	--	--	109.8	119.0	140.1	159.9	*176*	*188*	Net Profit ($mill)	*260*
--	--	--	--	--	--	38.4%	38.0%	37.8%	36.4%	*22.5%*	*22.5%*	Income Tax Rate	*22.5%*
--	--	--	--	--	--	6.0%	7.7%	9.8%	10.4%	*10.4%*	*10.3%*	Net Profit Margin	*11.8%*
--	--	--	--	--	--	40.1%	39.5%	38.7%	37.8%	*35.0%*	*38.0%*	Long-Term Debt Ratio	*38.0%*
--	--	--	--	--	--	59.9%	60.5%	61.3%	62.2%	*65.0%*	*62.0%*	Common Equity Ratio	*62.0%*
--	--	--	--	--	--	2995.3	3042.9	3080.7	3153.5	*3250*	*3350*	Total Capital ($mill)	*3850*
--	--	--	--	--	--	3293.7	3511.9	3731.6	4007.6	*4300*	*4510*	Net Plant ($mill)	*5275*
--	--	--	--	--	--	4.4%	4.7%	5.2%	5.8%	*6.5%*	*7.0%*	Return on Total Cap'l	*8.0%*
--	--	--	--	--	--	6.1%	6.5%	7.4%	8.2%	*8.5%*	*9.0%*	Return on Shr. Equity	*11.0%*
--	--	--	--	--	--	6.1%	6.5%	7.4%	8.2%	*8.5%*	*9.0%*	Return on Com Equity	*11.0%*
--	--	--	--	--	--	3.7%	3.1%	3.5%	3.7%	*4.0%*	*4.0%*	Retained to Com Eq	*5.0%*
--	--	--	--	--	--	40%	53%	52%	55%	*55%*	*56%*	All Div'ds to Net Prof	*53%*

CAPITAL STRUCTURE as of 6/30/18
Total Debt $1378.7 mill. **Due in 5 Yrs** $655.0 mill.
LT Debt $893.7 mill. **LT Interest** $70.0 mill.
(LT interest earned: 6.5x; total interest coverage: 6.5x)
Leases, Uncapitalized Annual rentals $4.7 mill.
Pfd Stock None
Pension Assets-12/17 $884.8 mill.
Oblig. $993.9 mill.
Common Stock 52,517,758 shs.
as of 7/24/18
MARKET CAP: $4.2 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	14.7	14.4	12.6
Other	554.2	574.6	338.1
Current Assets	568.9	589.0	350.7
Accts Payable	132.0	143.7	70.4
Debt Due	145.0	357.2	485.0
Other	166.9	172.4	193.9
Current Liab.	443.9	673.3	749.3
Fix. Chg. Cov.	685%	774%	690%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	--	--	5.5%
"Cash Flow"	--	--	7.0%
Earnings	--	--	10.5%
Dividends	--	--	10.0%
Book Value	--	--	3.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	676.5	256.8	225.2	389.2	1547.7
2016	508.4	245.9	232.2	440.7	1427.2
2017	550.4	279.7	247.1	462.4	1539.6
2018	638.5	292.5	*270*	*489*	*1690*
2019	*680*	*320*	*300*	*520*	*1820*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1.13	.23	.14	.74	2.24
2016	1.22	.38	.25	.80	2.65
2017	1.34	.39	.36	.93	3.02
2018	1.72	.39	*.33*	*.91*	*3.35*
2019	*1.78*	*.43*	*.40*	*.94*	*3.55*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	--	.28	.28	.28	.84
2015	.30	.30	.30	.30	1.20
2016	.35	.35	.35	.35	1.40
2017	.42	.42	.42	.42	1.68
2018	.46	.46	.46		

BUSINESS: ONE Gas, Inc. provides natural gas distribution services to over two million customers. It has three divisions: Oklahoma Natural Gas, Kansas Gas Service, and Texas Gas Service. The company purchased 137 Bcf of natural gas supply in 2017, compared to 134 Bcf in 2016. Total volumes delivered by customer (fiscal 2017): transportation, 61%; residential, 29%; commercial & industrial, 9%; wholesale & public authority, 1%. BlackRock owns approximately 10.9% of common stock; The Vanguard Group, 9.3%; T. Rowe Price Associates, 8.7%; officers and directors, less than 1% (4/18 Proxy). CEO: Pierce H. Norton II. Incorporated: Oklahoma. Address: 15 East Fifth Street, Tulsa, Oklahoma 74103. Telephone: 918-947-7000. Internet: www.onegas.com.

It's been a good year thus far for ONE Gas. In fact, through the first half, earnings per share jumped 22%, to $2.11, relative to 2017's tally of $1.73. That was brought about largely by a decrease in income tax expense, thanks to new legislation. Furthermore, there was the benefit of new rates in Texas and Kansas. Other positives included higher transportation volumes and net customer growth in Oklahoma and Texas. Meanwhile, total operating expenses increased only 2.8%. Right now, we look for the company's full-year profits to advance some 11%, to $3.35 per share. Concerning 2019, share net of $3.55 (a 6% rise) appears plausible, assuming, of course, that the business climate helps.

This year's capital expenditures are now expected to lie between $375 million and $390 million. (That would be around 7% higher than the 2017 level.) Some 70% of the budget is dedicated to system integrity and pipeline replacement projects. Corporate finances seem very sufficient to make those initiatives possible. It's worth mentioning that leadership looks for that figure to range between $375 million and $415 million annually over the 2019-2022 span, with about the same percentage of funds distributed to the manner in which capital is currently deployed.

The energy firm has a presence in only three states. And we think management is content with keeping the status quo, given that some operations are in metropolitan areas, like Tulsa, Oklahoma; Wichita, Kansas; and Austin, Texas. But this lack of geographic diversification leaves the company somewhat more susceptible to regional economic downturns and regulations.

These shares have climbed nearly 20% in price during the past six months. ONE Gas' healthy earnings are a big factor behind that move. The equity also continues to hold worthwhile long-term capital gains possibilities. Other positives are the dividend (and the likelihood of future steady hikes in the well-covered payout), below-market Beta, plus an Above Average (2) Safety rank. So, we suggest that investors desiring decent risk-adjusted total return potential consider OGS stock.

But for now, the Timeliness rank sits at just 3 (Average).

Frederick L. Harris, III *August 31, 2018*

(A) Diluted shrs. Excludes nonrecurring gain: 2017, $0.06. Next earnings report due early November.
(B) Dividends historically paid in early March, June, Sept., and Dec. ■ Dividend reinvestment plan. Direct stock purchase plan.
(C) In millions.

Company's Financial Strength	A
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	NMF

SOUTH JERSEY INDS. NYSE-SJI

RECENT PRICE	33.12	P/E RATIO	22.2 (Trailing: 18.6 / Median: 18.0)	RELATIVE P/E RATIO	1.19	DIV'D YLD	3.5%	VALUE LINE

TIMELINESS 3 Lowered 7/20/18
SAFETY 2 Lowered 1/4/91
TECHNICAL 3 Lowered 8/31/18
BETA .75 (1.00 = Market)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
High:	20.6	20.3	20.4	27.1	29.0	29.0	31.1	30.6	30.4	34.8	38.4	35.4	
Low:	15.6	12.6	16.0	18.6	21.4	22.9	25.3	25.9	21.2	22.1	30.8	26.0	

Target Price Range
2021 | 2022 | 2023

2021-23 PROJECTIONS

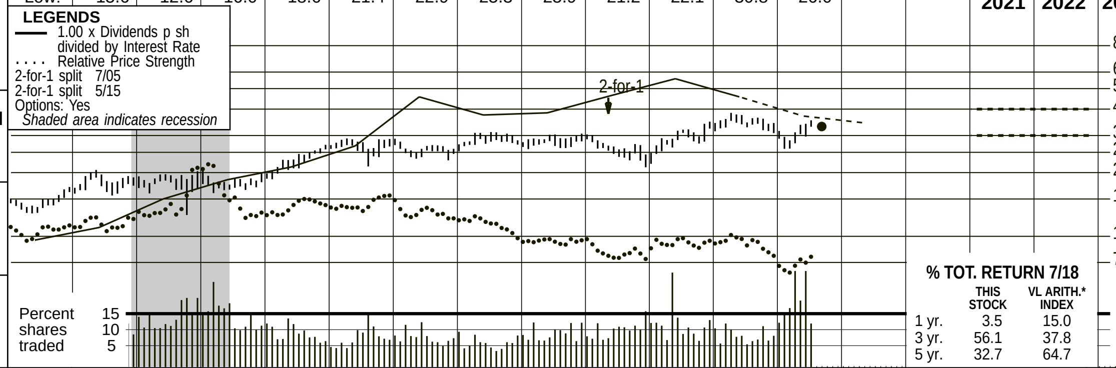
	Price	Gain	Ann'l Total Return
High	40	(+20%)	8%
Low	30	(-10%)	2%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	1	0
Options	0	0	0	18	0	8	0	0	4
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	95	94	113
to Sell	80	69	95
Hld's(000)	66217	55789	59747



% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	3.5	15.0
3 yr.	56.1	37.8
5 yr.	32.7	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
10.35	13.17	14.75	15.89	15.88	16.15	16.18	14.19	15.48	13.71	11.16	11.18	12.98	13.52	13.04	15.63	**15.00**	**15.40**	Revenues per sh	**16.85**
1.06	1.12	1.22	1.25	1.75	1.60	1.74	1.86	2.10	2.23	2.34	2.48	2.67	2.42	2.67	2.79	**2.50**	**2.60**	"Cash Flow" per sh	**3.35**
.61	.68	.79	.86	1.23	1.05	1.14	1.19	1.35	1.45	1.52	1.52	1.57	1.44	1.34	1.23	**1.70**	**1.70**	Earnings per sh A	**2.30**
.38	.39	.41	.43	.46	.51	.56	.61	.68	.75	.83	.90	.96	1.02	1.06	1.10	**1.15**	**1.20**	Div'ds Decl'd per sh B ■	**1.35**
1.74	1.18	1.34	1.60	1.26	.94	1.04	1.83	2.79	3.20	4.01	4.84	5.01	4.87	3.50	3.43	**2.80**	**3.10**	Cap'l Spending per sh	**4.75**
4.84	5.63	6.20	6.75	7.55	8.12	8.67	9.12	9.54	10.33	11.63	12.64	13.65	14.62	16.22	14.99	**15.85**	**17.85**	Book Value per sh C	**22.65**
48.83	52.92	55.52	57.96	58.65	59.22	59.46	59.59	59.75	60.43	63.31	65.43	68.33	70.97	79.48	79.55	**90.00**	**91.00**	Common Shs Outst'g D	**95.00**
13.5	13.3	14.1	16.6	11.9	17.2	15.9	15.0	16.8	18.4	16.9	18.9	18.0	17.9	21.7	27.9	*Bold figures are*		Avg Ann'l P/E Ratio	**16.0**
.74	.76	.74	.88	.64	.91	.96	1.00	1.07	1.15	1.08	1.06	.95	.90	1.14	1.40	*Value Line*		Relative P/E Ratio	**.90**
4.6%	4.3%	3.7%	3.0%	3.2%	2.8%	3.1%	3.4%	3.0%	2.8%	3.2%	3.1%	3.4%	3.9%	3.6%	3.2%	*estimates*		Avg Ann'l Div'd Yield	**3.7%**

CAPITAL STRUCTURE as of 6/30/18
Total Debt $3109.0 mill. **Due in 5 Yrs** $685 mill.
LT Debt $1403.8 mill. **LT Interest** $50.0 mill.

Leases, Uncapitalized Annual rentals $.7 mill.
Pension Assets-12/17 $216.1 mill. **Oblig.** $316.3 mill.

Pfd Stock None

Common Stock 85,506,217 shs. as of 8/1/18

MARKET CAP: $2.8 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
962.0	845.4	925.1	828.6	706.3	731.4	887.0	959.6	1036.5	1243.1	**1350**	**1400**	Revenues ($mill)	**1600**
67.7	71.3	81.0	87.0	93.3	97.1	104.0	99.0	102.8	98.1	**148**	**150**	Net Profit ($mill)	**210**
47.7%	23.0%	15.2%	22.4%	10.8%	- -	- -	5.9%	42.0%	25.0%	**21.0%**	**21.0%**	Income Tax Rate	**21.0%**
7.0%	8.4%	8.8%	10.5%	13.2%	13.3%	11.7%	10.3%	9.9%	7.9%	**11.0%**	**10.7%**	Net Profit Margin	**13.1%**
39.2%	36.5%	37.4%	40.5%	45.0%	45.1%	48.0%	49.2%	38.5%	48.5%	**49.5%**	**48.0%**	Long-Term Debt Ratio	**46.5%**
60.8%	63.5%	62.6%	59.5%	55.0%	54.9%	52.0%	50.8%	61.5%	51.5%	**50.5%**	**52.0%**	Common Equity Ratio	**53.5%**
848.0	856.4	910.1	1048.3	1337.6	1507.4	1791.9	2043.9	2097.2	2315.4	**2825**	**3125**	Total Capital ($mill)	**4000**
982.6	1073.1	1193.3	1352.4	1578.0	1859.1	2134.1	2448.1	2623.8	2700.2	**2500**	**2750**	Net Plant ($mill)	**3450**
8.9%	9.0%	9.5%	8.9%	7.4%	6.8%	6.4%	5.4%	5.4%	5.1%	**6.0%**	**5.5%**	Return on Total Cap'l	**6.0%**
13.1%	13.1%	14.2%	13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	**10.5%**	**9.0%**	Return on Shr. Equity	**10.0%**
13.1%	13.1%	14.2%	13.9%	12.7%	11.7%	11.2%	9.5%	8.0%	8.2%	**10.5%**	**9.0%**	Return on Com Equity	**10.0%**
6.7%	6.4%	7.1%	6.7%	5.8%	4.8%	4.3%	2.8%	1.6%	.9%	**3.0%**	**2.5%**	Retained to Com Eq	**4.0%**
49%	51%	50%	52%	55%	59%	61%	71%	80%	89%	**70%**	**73%**	All Div'ds to Net Prof	**61%**

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	18.3	7.8	22.4
Other	455.0	431.2	2402.1
Current Assets	473.3	439.0	2424.5
Accts Payable	243.7	284.9	262.1
Debt Due	528.0	410.2	1705.2
Other	180.9	188.0	147.5
Current Liab.	952.6	883.1	2114.8
Fix. Chg. Cov.	602%	177%	133%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-1.5%	1.0%	*3.0%*
"Cash Flow"	5.5%	3.5%	*4.0%*
Earnings	2.5%	-1.5%	*9.5%*
Dividends	8.5%	7.0%	*4.0%*
Book Value	7.5%	8.0%	*7.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	383.0	177.7	141.1	257.8	959.6
2016	333.0	154.4	219.1	330.0	1036.5
2017	425.8	244.4	227.1	345.8	1243.1
2018	521.9	227.3	***230***	***370.8***	***1350***
2019	***510***	***260***	***250***	***380***	***1400***

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.86	.03	d.07	.62	1.44
2016	.75	.12	.05	.42	1.34
2017	.72	.06	d.05	.50	1.23
2018	1.26	.07	***d.12***	***.49***	***1.70***
2019	***1.05***	***.10***	***d.05***	***.60***	***1.70***

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	- -	.237	.237	.488	.96
2015	- -	.251	.251	.515	1.02
2016	- -	.264	.264	.536	1.06
2017	- -	.273	.273	.553	1.10
2018	- -	.280	.280		

BUSINESS: South Jersey Industries, Inc. is a holding company. Distributes natural gas to approx. 681,000 customers in New Jersey and Maryland. Gas revenue mix '17: residential, 44%; commercial, 21%; cogeneration and electric generation, 14%; industrial, 21%. Nonutility operations include: South Jersey Energy, South Jersey Resources Group, South Jersey Exploration, Marina Energy, South Jersey Energy Service Plus, and SJI Midstream. Has about 760 employees. Off./dir. own less than 1% of common; BlackRock, Inc., 12.8%; The Vanguard Group, Inc., 9.8% (3/18 proxy). Pres. & CEO: Michael J. Renna. Chairman: Walter M. Higgins III. Incorporated: NJ. Address: 1 South Jersey Plaza, Folsom, NJ 08037. Telephone: 609-561-9000. Internet: www.sjindustries.com.

Shares of South Jersey Industries have traded in a narrow range in recent months. The company reported mixed results for the second quarter. The top line declined moderately, on a year-over-year basis. But adjusted earnings per share of $0.07 surpassed the prior-year tally. Strong bottom-line performance at the Midstream and Energy Services businesses more than offset unfavorable results at South Jersey Gas and the Energy Group lines.

The company has completed the acquisitions of Elizabethtown Gas and Elkton Gas from a subsidiary of Southern Company Gas. The transactions closed in early July. South Jersey is now the second-largest natural gas provider in New Jersey, with service to over 681,000 customers. The transactions add 3,315 miles of natural gas pipeline to the company's portfolio of regulated assets. The board of directors has approved the creation of SJI Utilities, a holding company that will house South Jersey Gas, Elizabethtown Gas, and Elkton Gas. The company has also announced the sale of solar assets; the proceeds ought to bolster its financial position. South Jersey has undertaken a strategic review of its noncore, nonregulated operations. These moves reflect the company's intention to emphasize high-quality, regulated earnings growth and increase earnings stability.

Prospects for the coming years appear favorable. We anticipate good performance at the company's utility operations going forward. Customer additions, as well as investment in regulated assets, should drive earnings and cash flow higher. Elsewhere, the Energy Group ought to benefit from greater contributions from fuel supply management contracts.

This stock is neutrally ranked for year-ahead relative price performance. Looking further out, long-term total return potential is not especially compelling at this juncture. On the bright side, the dividend yield is relatively healthy. Moreover, South Jersey Industries earns good marks for Safety, Financial Strength, Price Stability, and Earnings Predictability. Volatility is subdued, as well. Conservative, income-oriented subscribers may find something to like here.

Michael Napoli, CFA *August 31, 2018*

(A) Based on economic egs. from 2007. GAAP EPS: '08, $1.29; '09, $0.97; '10, $1.11; '11, $1.49; '12, $1.49; '13, $1.28; '14, $1.46; '15, $1.52; '16, $1.56; '17, ($0.04). Excl. nonrecur. gain (loss): '08, $0.16; '09, ($0.22); '10, ($0.24); '11, $0.04; '12, ($0.03); '13, ($0.24); '14, ($0.11); '15, $0.08; '16, $0.22; '17, ($1.27). Next egs. rpt. early November. (B) Div'ds paid early April, July, Oct., and late Dec. ■ Div. reinvest. plan avail. (C) Incl. reg. assets. In 2017: $469.2 mill., $5.90 per shr. (D) In mill., adj. for split.

Company's Financial Strength	A
Stock's Price Stability	80
Price Growth Persistence	20
Earnings Predictability	70

SPIRE INC. NYSE-SR

RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD
76.60	19.7 (Trailing: 16.4; Median: 16.0)	1.06	2.9%

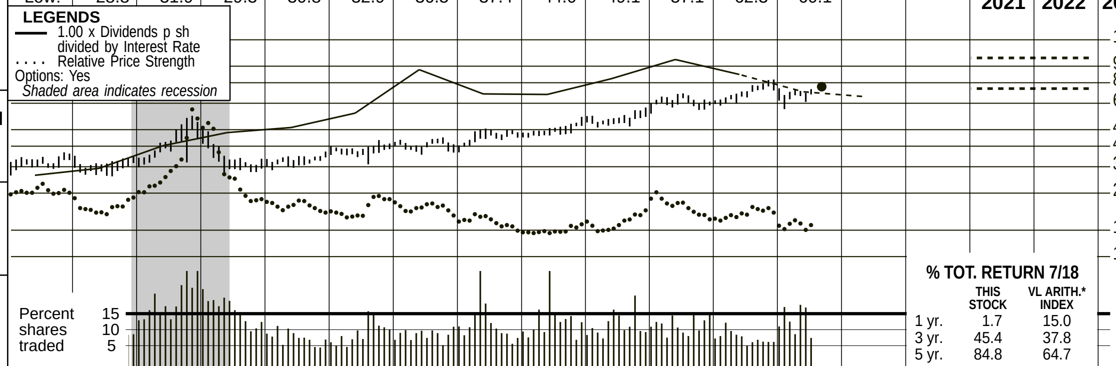
VALUE LINE

TIMELINESS 3 Lowered 8/10/18
SAFETY 2 Raised 6/20/03
TECHNICAL 4 Lowered 8/31/18
BETA .65 (1.00 = Market)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
High:	36.0	55.8	48.3	37.8	42.8	44.0	48.5	55.2	61.0	71.2	82.9	77.3	
Low:	28.8	31.9	29.3	30.8	32.9	36.5	37.4	44.0	49.1	57.1	62.3	60.1	

Target Price Range

2021	2022	2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	105	(+35%)	10%
Low	75	(Nil)	3%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	5	5	0	7	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	109	111	124
to Sell	106	74	112
Hld's(000)	44099	39899	39753

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	1.7	15.0
3 yr.	45.4	37.8
5 yr.	84.8	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
39.84	54.95	59.59	75.43	93.51	93.40	100.44	85.49	77.83	71.48	49.90	31.10	37.68	45.59	33.68	36.07	*41.20*	*46.15*	Revenues per sh A	*54.55*
2.56	3.15	2.79	2.98	3.81	3.87	4.22	4.56	4.11	4.62	4.58	3.12	3.87	6.15	6.16	6.54	*7.40*	*7.25*	"Cash Flow" per sh	*8.25*
1.18	1.82	1.82	1.90	2.37	2.31	2.64	2.92	2.43	2.86	2.79	2.02	2.35	3.16	3.24	3.43	*4.50*	*4.00*	Earnings per sh A B	*5.00*
1.34	1.34	1.35	1.37	1.40	1.45	1.49	1.53	1.57	1.61	1.66	1.70	1.76	1.84	1.96	2.10	*2.25*	*2.40*	Div'ds Decl'd per sh C■	*2.50*
2.80	2.67	2.45	2.84	2.97	2.72	2.57	2.36	2.56	3.02	4.83	4.00	3.96	6.68	6.42	9.08	*9.30*	*9.20*	Cap'l Spending per sh	*10.00*
15.07	15.65	16.96	17.31	18.85	19.79	22.12	23.32	24.02	25.56	26.67	32.00	34.93	36.30	38.73	41.26	*41.60*	*43.40*	Book Value per sh D	*48.10*
18.96	19.11	20.98	21.17	21.36	21.65	21.99	22.17	22.29	22.43	22.55	32.70	43.18	43.36	45.65	48.26	*51.00*	*52.00*	Common Shs Outst'g E	*55.00*
20.0	13.6	15.7	16.2	13.6	14.2	14.3	13.4	13.7	13.0	14.5	21.3	19.8	16.5	19.6	19.8	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
1.09	.78	.83	.86	.73	.75	.86	.89	.87	.82	.92	1.20	1.04	.83	1.03	.97	*Value Line*		Relative P/E Ratio	*1.00*
5.7%	5.4%	4.7%	4.4%	4.3%	4.4%	3.9%	3.9%	4.7%	4.3%	4.1%	4.0%	3.8%	3.5%	3.1%	3.1%	*estimates*		Avg Ann'l Div'd Yield	*2.8%*
						2209.0	1895.2	1735.0	1603.3	1125.5	1017.0	1627.2	1976.4	1537.3	1740.7	*2100*	*2400*	Revenues ($mill) A	*3000*
						57.6	64.3	54.0	63.8	62.6	52.8	84.6	136.9	144.2	161.6	*230*	*210*	Net Profit ($mill)	*275*
						31.3%	33.6%	33.4%	31.4%	29.6%	25.0%	27.6%	31.2%	32.5%	32.4%	*2.3%*	*23.5%*	Income Tax Rate	*24.0%*
						2.6%	3.4%	3.1%	4.0%	5.6%	5.2%	5.2%	6.9%	9.4%	9.3%	*10.9%*	*8.7%*	Net Profit Margin	*9.2%*
						44.4%	42.9%	40.5%	38.9%	36.1%	46.6%	55.1%	53.0%	50.9%	50.0%	*49.5%*	*49.5%*	Long-Term Debt Ratio	*49.0%*
						55.5%	57.1%	59.5%	61.1%	63.9%	53.4%	44.9%	47.0%	49.1%	50.0%	*50.5%*	*50.5%*	Common Equity Ratio	*51.0%*
						876.1	906.3	899.9	937.7	941.0	1959.0	3359.4	3345.1	3601.9	3986.3	*4215*	*4455*	Total Capital ($mill)	*5190*
						823.2	855.9	884.1	928.7	1019.3	1776.6	2759.7	2941.2	3300.9	3665.2	*3850*	*4040*	Net Plant ($mill)	*4675*
						8.1%	8.7%	7.4%	8.1%	7.9%	3.3%	3.1%	5.1%	4.9%	5.0%	*6.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
						11.8%	12.4%	10.1%	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	*11.0%*	*9.0%*	Return on Shr. Equity	*10.5%*
						11.8%	12.4%	10.1%	11.1%	10.4%	5.0%	5.6%	8.7%	8.2%	8.1%	*11.0%*	*9.0%*	Return on Com Equity	*10.5%*
						5.2%	5.9%	3.6%	4.9%	4.3%	1.0%	1.5%	3.7%	3.3%	3.3%	*5.5%*	*3.5%*	Retained to Com Eq	*4.0%*
						56%	53%	64%	56%	59%	81%	73%	58%	59%	60%	*51%*	*60%*	All Div'ds to Net Prof	*60%*

CAPITAL STRUCTURE as of 6/30/18
Total Debt $2371.0 mill. **Due in 5 Yrs** $540.0 mill.
LT Debt $2024.5 mill. **LT Interest** $80.0 mill.
(Total interest coverage: 3.7x)

Leases, Uncapitalized Annual rentals $11.0 mill.
Pension Assets-9/17 $531.6 mill. **Oblig.** $748.8 mill.

Pfd Stock None
Common Stock 50,669,092 shs. **as of 7/30/18**

MARKET CAP: $3.9 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	5.2	7.4	6.9
Other	564.4	718.1	578.0
Current Assets	569.6	725.5	584.9
Accts Payable	210.9	257.1	195.5
Debt Due	648.7	577.3	346.5
Other	301.7	263.5	272.1
Current Liab.	1161.3	1097.9	814.1
Fix. Chg. Cov.	366%	361%	367%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	-8.0%	-10.5%	6.0%
"Cash Flow"	6.0%	7.0%	4.5%
Earnings	4.0%	4.0%	7.5%
Dividends	3.5%	4.0%	4.0%
Book Value	7.5%	9.0%	3.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	619.6	877.4	275.2	204.2	1976.4
2016	399.4	609.3	249.3	279.3	1537.3
2017	495.1	663.4	323.5	258.7	1740.7
2018	561.8	813.4	350.6	*374.2*	*2100*
2019	*600*	*900*	*400*	*500*	*2400*

Fiscal Year Ends	EARNINGS PER SHARE A B F Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2015	1.09	2.18	.32	d.43	3.16
2016	1.08	2.31	.24	d.31	3.24
2017	.99	2.36	.45	d.28	3.43
2018	2.39	2.03	.52	*d.44*	*4.50*
2019	*1.30*	*2.50*	*.50*	*d.30*	*4.00*

Cal-endar	QUARTERLY DIVIDENDS PAID C ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	.44	.44	.44	.44	1.76
2015	.46	.46	.46	.46	1.84
2016	.49	.49	.49	.49	1.96
2017	.525	.525	.525	.525	2.10
2018	.5625	.5625	.5625		

BUSINESS: Spire Inc., formerly known as the Laclede Group, Inc., is a holding company for natural gas utilities, which distributes natural gas across Missouri, including the cities of St. Louis and Kansas City. Has roughly 1.7 million customers. Acquired Missouri Gas 9/13, Alabama Gas Co 9/14. Utility therms sold and transported in fiscal 2017: 3.0 bill. Revenue mix for regulated operations: residential, 29%; commercial and industrial, 15%; transportation, 49%; other, 6%. Has around 3,279 employees. Officers and directors own 3.0% of common shares (1/18 proxy). Chairman: Edward Glotzbach; CEO: Suzanne Sitherwood. Inc.: Missouri. Address: 700 Market Street, St. Louis, Missouri 63101. Telephone: 314-342-0500. Internet: www.thelacledegroup.com.

Spire Inc. recorded a decent fiscal third-quarter performance (ended June 30th). Revenues expanded 8% year over year to $350.6 million, aided by greater natural gas throughput. In addition, good cost controls, along with a reduced U.S. tax rate, helped income grow to $0.52 per share. Still, the quarterly result was held back somewhat by a higher share count. The company appears to be on track for an unimposing fiscal fourth quarter, but new meter growth expanded 5.7% year over year. Due to warmer temperatures and greater maintenance activities, a loss is normally incurred in the fourth quarter. In all, we think the company will earn $4.50 per share in fiscal 2018.

The Spire STL Pipeline received FERC approval in August. The approval allows for land acquisition and preconstruction activities to take place. In addition, the pipeline is expected to be placed into service by late 2019 and cost between $210 million and $225 million. The 65-mile project will reduce transportation costs of natural gas across the coverage area, and will have higher allowable rates of return, boosting earnings.

Long-term results ought to benefit from a few factors. Stronger operations should occur across its utility segment, as higher volumes boost winter-month earnings. Still, some of this will be offset by new rates, which were reduced largely to offset U.S. tax reform. In addition, Spire purchased a second storage facility in Wyoming and will look to combine operations into a single unit, lowering costs and achieving synergies. Meantime, the company will benefit from good results in its marketing segment, as better prices occur. Still, gains due to tax reform will not likely be recurring, causing earnings to fall to $4.00 per share in 2019, before rebounding to the $5.00 mark over the long haul.

Spire shares do not stand out for Timeliness. They also offer below-average long-term total return potential. The dividend yield is only average for a utility, but will likely grow at a decent rate over the coming years. The company's good financial position and Above Average (2) rank for Safety suggest that accounts with lower risk tolerances and an income objective may find these shares appealing.

John E. Seibert III *August 31, 2018*

(A) Fiscal year ends Sept. 30th. (B) Based on diluted shares outstanding. Excludes nonrecurring loss: '06, 7¢. Excludes gain from discontinued operations: '08, 94¢. Next earnings report due late October. (C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available. (D) Incl. deferred charges. In '17: $920.2 mill., $19.07/sh. (E) In millions. (F) Qtly. egs. may not sum due to rounding or change in shares outstanding in 2014, 2016, and 2017.

Company's Financial Strength	B++
Stock's Price Stability	95
Price Growth Persistence	45
Earnings Predictability	75

SOUTHWEST GAS NYSE-SWX

RECENT PRICE	79.74	P/E RATIO	20.1 (Trailing: 20.7 / Median: 17.0)	RELATIVE P/E RATIO	1.08	DIV'D YLD	2.7%	VALUE LINE

TIMELINESS 3 Lowered 5/18/18

SAFETY 3 Lowered 1/4/91

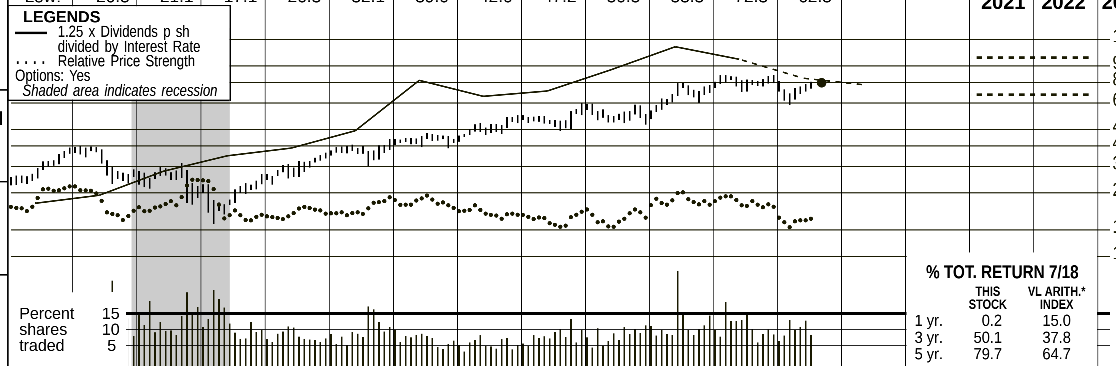
TECHNICAL 3 Raised 8/3/18

BETA .75 (1.00 = Market)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
High:	39.9	33.3	29.5	37.3	43.2	46.1	56.0	64.2	63.7	79.6	86.9	81.7
Low:	26.5	21.1	17.1	26.3	32.1	39.0	42.0	47.2	50.5	53.5	72.3	62.5

Target Price Range

2021 | 2022 | 2023



2021-23 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	105	(+30%)	10%
Low	70	(-10%)	Nil

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	1	0
Options	0	2	10	7	0	16	0	0	0
to Sell	0	1	1	0	0	1	0	2	1

Institutional Decisions

	3Q2017	4Q2017	1Q2018
to Buy	119	113	127
to Sell	115	90	116
Hld's(000)	41968	36675	39279

% TOT. RETURN 7/18

	THIS STOCK	VL ARITH.* INDEX
1 yr.	0.2	15.0
3 yr.	50.1	37.8
5 yr.	79.7	64.7

2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	© VALUE LINE PUB. LLC	21-23
39.68	35.96	40.14	43.59	48.47	50.28	48.53	42.00	40.18	41.07	41.77	42.08	45.61	52.00	51.82	53.00	*59.20*	*61.00*	Revenues per sh	*67.90*
5.07	5.11	5.57	5.20	5.97	6.21	5.76	6.16	6.46	6.81	7.73	8.24	8.47	8.62	9.29	8.83	*9.00*	*9.80*	"Cash Flow" per sh	*13.40*
1.16	1.13	1.66	1.25	1.98	1.95	1.39	1.94	2.27	2.43	2.86	3.11	3.01	2.92	3.18	3.62	*3.90*	*4.20*	Earnings per sh A	*5.40*
.82	.82	.82	.82	.82	.86	.90	.95	1.00	1.06	1.18	1.32	1.46	1.62	1.80	1.98	*2.08*	*2.18*	Div'ds Decl'd per sh B■†	*2.60*
8.50	7.03	8.23	7.49	8.27	7.96	6.79	4.81	4.73	8.29	8.57	7.86	8.53	10.30	11.15	12.97	*13.80*	*14.50*	Cap'l Spending per sh	*16.50*
17.91	18.42	19.18	19.10	21.58	22.98	23.49	24.44	25.62	26.66	28.35	30.47	31.95	33.61	35.03	37.74	*40.80*	*43.50*	Book Value per sh	*52.85*
33.29	34.23	36.79	39.33	41.77	42.81	44.19	45.09	45.56	45.96	46.15	46.36	46.52	47.38	47.48	48.09	*49.00*	*50.00*	Common Shs Outst'g C	*53.00*
19.9	19.2	14.3	20.6	15.9	17.3	20.3	12.2	14.0	15.7	15.0	15.8	17.9	19.4	21.6	22.2	*Bold figures are*		Avg Ann'l P/E Ratio	*16.0*
1.09	1.09	.76	1.10	.86	.92	1.22	.81	.89	.98	.95	.89	.94	.98	1.13	1.12	*Value Line*		Relative P/E Ratio	*.90*
3.6%	3.8%	3.5%	3.2%	2.6%	2.6%	3.2%	4.0%	3.2%	2.8%	2.8%	2.7%	2.7%	2.9%	2.6%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*3.0%*

CAPITAL STRUCTURE as of 6/30/18
Total Debt $2060.2 mill. **Due in 5 Yrs** $850 mill.
LT Debt $2037.7 mill. **LT Interest** $88.0 mill.
(Total interest coverage: 4.0x) (51% of Cap'l)
Leases, Uncapitalized Annual rentals $9.0 mill.
Pension Assets-12/17 $926.3 mill.
Oblig. $1278.8 mill.
Pfd Stock None

Common Stock 49,133,829 shs.
as of 7/31/18

MARKET CAP: $3.9 billion (Mid Cap)

2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019		21-23
2144.7	1893.8	1830.4	1887.2	1927.8	1950.8	2121.7	2463.6	2460.5	2548.8	*2900*	*3050*	Revenues ($mill)	*3600*
61.0	87.5	103.9	112.3	133.3	145.3	141.1	138.3	152.0	173.8	*190*	*210*	Net Profit ($mill)	*285*
40.1%	34.0%	34.7%	36.2%	36.2%	35.0%	35.7%	36.4%	33.9%	32.8%	*21.0%*	*21.0%*	Income Tax Rate	*21.0%*
2.8%	4.6%	5.7%	6.0%	6.9%	7.4%	6.7%	5.6%	6.2%	6.8%	*6.6%*	*6.9%*	Net Profit Margin	*7.9%*
55.3%	53.5%	49.1%	43.2%	49.2%	49.4%	52.4%	49.3%	48.2%	49.8%	*50.5%*	*50.5%*	Long-Term Debt Ratio	*48.0%*
44.7%	46.5%	50.9%	56.8%	50.8%	50.6%	47.6%	50.7%	51.8%	50.2%	*49.5%*	*49.5%*	Common Equity Ratio	*52.0%*
2323.3	2371.4	2291.7	2155.9	2576.9	2793.7	3123.9	3143.5	3213.5	3613.3	*4050*	*4375*	Total Capital ($mill)	*5400*
2983.3	3034.5	3072.4	3218.9	3343.8	3486.1	3658.4	3891.1	4132.0	4523.7	*4850*	*5200*	Net Plant ($mill)	*6200*
4.5%	5.4%	6.1%	6.4%	6.4%	6.3%	5.7%	5.5%	5.8%	5.8%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
5.9%	7.9%	8.9%	9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	*9.5%*	*9.5%*	Return on Shr. Equity	*10.0%*
5.9%	7.9%	8.9%	9.2%	10.2%	10.3%	9.5%	8.7%	9.1%	9.6%	*9.5%*	*9.5%*	Return on Com Equity	*10.0%*
2.1%	4.1%	5.1%	5.3%	6.1%	6.1%	5.0%	4.0%	4.1%	4.5%	*4.5%*	*4.5%*	Retained to Com Eq	*5.5%*
63%	48%	43%	43%	40%	41%	47%	54%	55%	53%	*54%*	*52%*	All Div'ds to Net Prof	*48%*

CURRENT POSITION ($MILL.)	2016	2017	6/30/18
Cash Assets	28.1	43.6	34.7
Other	505.2	613.4	661.4
Current Assets	533.3	657.0	696.1
Accts Payable	184.7	228.3	188.2
Debt Due	50.1	239.8	31.9
Other	393.6	347.8	443.5
Current Liab.	628.4	815.9	663.6
Fix. Chg. Cov.	401%	415%	406%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '15-'17 to '21-'23
Revenues	1.0%	5.0%	4.5%
"Cash Flow"	4.5%	5.0%	7.0%
Earnings	6.5%	5.0%	9.0%
Dividends	8.0%	11.0%	6.5%
Book Value	5.5%	5.5%	7.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	734.2	538.6	505.4	685.4	2463.6
2016	731.2	547.8	540.0	641.5	2460.5
2017	654.7	560.5	593.2	740.4	2548.8
2018	754.3	670.9	*680*	*794.8*	*2900*
2019	*780*	*700*	*730*	*840*	*3050*

Cal-endar	EARNINGS PER SHARE A D Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2015	1.53	.10	d.10	1.38	2.92
2016	1.58	.19	.05	1.36	3.18
2017	1.45	.37	.21	1.58	3.62
2018	1.63	.44	*.22*	*1.61*	*3.90*
2019	*1.70*	*.52*	*.28*	*1.70*	*4.20*

Cal-endar	QUARTERLY DIVIDENDS PAID B■† Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2014	.330	.365	.365	.365	1.43
2015	.365	.405	.405	.405	1.58
2016	.405	.450	.450	.450	1.76
2017	.450	.495	.495	.495	1.94
2018	.495	.520			

BUSINESS: Southwest Gas Holdings, Inc. is the parent holding company of Southwest Gas and Centuri Construction Group. Southwest Gas is a regulated gas distributor serving about 2.0 million customers in sections of Arizona, Nevada, and California. Centuri provides construction services. 2017 margin mix: residential and small commercial, 85%; large commercial and industrial, 3%; transportation, 12%. Total throughput: 2.1 billion therms. Has 7,771 employees. Off. & dir. own 1.0% of common stock; BlackRock Inc., 11.4%; The Vanguard Group, Inc., 9.2% (3/18 Proxy). Chairman: Michael J. Melarkey. President & CEO: John P. Hester. Inc.: CA. Addr.: 5241 Spring Mountain Road, Las Vegas, Nevada 89193. Telephone: 702-876-7237. Internet: www.swgas.com.

Shares of Southwest Gas have moved higher in price over the past three months. The company reported good performance for the June quarter. The top line advanced nearly 20%, on a year-over-year basis. Earnings per share of $0.44 compared favorably with the prior-year tally. Strong performance at the construction services segment more than offset weakness at the natural gas distribution line. The construction services business benefited from a higher volume of work, as well as a $9 million change order settlement associated with a water pipe replacement project. Performance at the natural gas segment was hurt by higher operations and maintenance expenses and greater interest costs.

The company has filed a rate case with the Public Utilities Commission of Nevada. Southwest is requesting a statewide overall general rate increase of roughly $32.5 million. The company cited rising cost of service as well as investment in gas infrastructure projects as reasons for the hike. A final decision is expected by the beginning of next year. In addition, the commission has voted to approve an order granting Southwest's proposal to extend natural gas service to Mesquite, Nevada. This order approves a capital investment of approximately $28 million.

Performance will likely remain solid going forward. The utility operation ought to benefit from customer growth, infrastructure tracker mechanisms, and expansion projects. Elsewhere, the construction services business should be able to capitalize on the need of utilities to replace aging infrastructure. It has a robust base of large clients, many of which have multi-year pipeline replacement programs.

This neutrally ranked equity offers subpar long-term total return potential. Solid bottom-line growth prospects appear to be partly reflected in the recent quotation, and the shares are trading within our Target Price Range. The dividend yield is below average for a utility, as well. Still, a pullback in the share price some time in the future may offer patient accounts a more attractive entry point. Southwest Gas earns good marks for Price Stability, Growth Persistence, and Earnings Predictability.

Michael Napoli, CFA *August 31, 2018*

(A) Diluted earnings. Excl. nonrec. gains (losses): '02, (10¢); '05, (11¢); '06, 7¢. Next egs. report due early November. (B) Dividends historically paid early March, June, September, and December. ■† Div'd reinvestment and stock purchase plan avail. (C) In millions. (D) Totals may not sum due to rounding.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	80
Earnings Predictability	90

Schedule AHG - 3
18-KGSG-560-RTS

Atmos Energy, Corp.

Date	High	Low	Close
9/25/2017	$ 85.96	$ 83.37	$ 83.84
10/2/2017	$ 85.24	$ 83.60	$ 85.23
10/9/2017	$ 87.41	$ 85.04	$ 86.29
10/16/2017	$ 87.26	$ 85.58	$ 86.87
10/23/2017	$ 87.29	$ 84.84	$ 87.29
10/30/2017	$ 87.82	$ 86.33	$ 87.59
11/6/2017	$ 90.39	$ 87.15	$ 89.16
11/13/2017	$ 91.00	$ 88.92	$ 89.33
11/20/2017	$ 89.85	$ 88.14	$ 88.72
11/27/2017	$ 92.73	$ 88.17	$ 92.24
12/4/2017	$ 93.56	$ 90.84	$ 91.80
12/11/2017	$ 92.22	$ 88.25	$ 89.37
12/18/2017	$ 90.14	$ 84.77	$ 85.09
12/25/2017	$ 86.14	$ 84.52	$ 85.89
1/1/2018	$ 86.12	$ 83.07	$ 83.19
1/8/2018	$ 83.70	$ 79.11	$ 79.84
1/15/2018	$ 81.47	$ 79.69	$ 80.83
1/22/2018	$ 83.32	$ 80.90	$ 83.02
1/29/2018	$ 83.30	$ 81.12	$ 81.50
2/5/2018	$ 81.90	$ 76.46	$ 81.11
2/12/2018	$ 83.24	$ 79.13	$ 82.96
2/19/2018	$ 83.48	$ 80.52	$ 82.59
2/26/2018	$ 82.85	$ 78.75	$ 79.19
3/5/2018	$ 80.87	$ 79.01	$ 80.23
3/12/2018	$ 83.13	$ 80.14	$ 82.86
3/19/2018	$ 82.84	$ 79.84	$ 80.03
3/26/2018	$ 84.46	$ 79.49	$ 84.24
4/2/2018	$ 84.98	$ 82.26	$ 84.15
4/9/2018	$ 84.67	$ 82.53	$ 83.38
4/16/2018	$ 85.75	$ 83.45	$ 83.90
4/23/2018	$ 88.12	$ 83.96	$ 87.41
4/30/2018	$ 89.94	$ 86.02	$ 89.73
5/7/2018	$ 89.81	$ 86.85	$ 88.25
5/14/2018	$ 88.38	$ 84.53	$ 84.91
5/21/2018	$ 88.20	$ 84.65	$ 87.75
5/28/2018	$ 90.78	$ 87.10	$ 87.98
6/4/2018	$ 88.36	$ 85.10	$ 85.31
6/11/2018	$ 86.86	$ 84.35	$ 86.79
6/18/2018	$ 89.41	$ 86.46	$ 89.11
6/25/2018	$ 91.13	$ 89.11	$ 90.14
7/2/2018	$ 92.99	$ 89.70	$ 92.57
7/9/2018	$ 92.86	$ 89.38	$ 91.13
7/16/2018	$ 92.17	$ 89.90	$ 91.44
7/23/2018	$ 91.57	$ 89.21	$ 90.88
7/30/2018	$ 92.23	$ 90.12	$ 91.83
8/6/2018	$ 92.65	$ 89.80	$ 91.27
8/13/2018	$ 94.85	$ 91.14	$ 94.34
8/20/2018	$ 94.72	$ 91.67	$ 92.22
8/27/2018	$ 92.90	$ 91.34	$ 92.23
9/3/2018	$ 94.34	$ 92.19	$ 93.62
9/10/2018	$ 94.60	$ 92.01	$ 94.12
9/17/2018	$ 95.22	$ 91.95	$ 94.01
Min	**$ 80.87**		$ 79.19
Max		**$ 92.19**	$ 94.34
Mid-point			$ 86.76
Mean			**$ 87.09**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	ATO
Next 5 Years	6.95%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	6
Median	6
High	6
Low	6
Standard Deviation	0
Number of Analysts	1

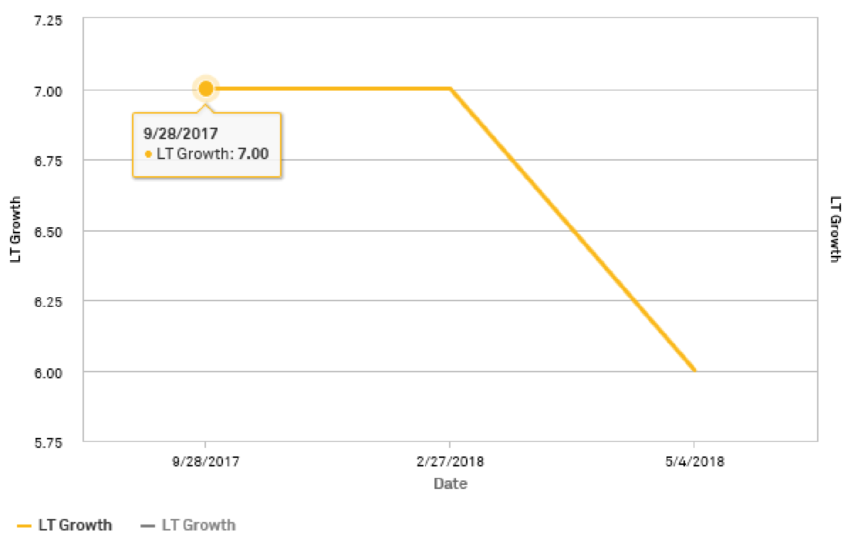
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic 10	Historic 5	Forecast '21 to '23
EPS	6.00%	9.00%	7.50%
DPS	3.00%	4.50%	7.00%

	2017	2018	2019	'21-'23
DPS $	$ 1.80	$ 1.94	$ 2.08	$ 2.50

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 3
18-KGSG-560-RTS

Chesapeake Utilities

Date	High	Low	Close
9/25/2017	$ 81.15	$ 78.15	$ 78.25
10/2/2017	$ 80.70	$ 77.65	$ 78.70
10/9/2017	$ 81.95	$ 78.80	$ 81.10
10/16/2017	$ 82.15	$ 80.05	$ 81.15
10/23/2017	$ 81.65	$ 79.05	$ 81.50
10/30/2017	$ 81.95	$ 78.60	$ 80.00
11/6/2017	$ 81.00	$ 78.88	$ 80.45
11/13/2017	$ 82.20	$ 79.70	$ 81.55
11/20/2017	$ 84.35	$ 81.00	$ 82.35
11/27/2017	$ 86.35	$ 81.45	$ 84.75
12/4/2017	$ 85.80	$ 81.84	$ 82.45
12/11/2017	$ 82.80	$ 79.25	$ 81.65
12/18/2017	$ 82.00	$ 75.00	$ 76.80
12/25/2017	$ 79.45	$ 76.40	$ 78.55
1/1/2018	$ 78.95	$ 75.28	$ 76.00
1/8/2018	$ 76.50	$ 72.10	$ 72.65
1/15/2018	$ 73.10	$ 68.95	$ 69.10
1/22/2018	$ 76.65	$ 69.25	$ 74.75
1/29/2018	$ 74.60	$ 72.00	$ 72.45
2/5/2018	$ 72.85	$ 67.55	$ 70.50
2/12/2018	$ 71.25	$ 67.75	$ 68.55
2/19/2018	$ 69.45	$ 66.85	$ 69.35
2/26/2018	$ 69.85	$ 66.35	$ 68.45
3/5/2018	$ 70.25	$ 67.90	$ 69.90
3/12/2018	$ 71.50	$ 69.40	$ 71.40
3/19/2018	$ 75.05	$ 69.80	$ 70.00
3/26/2018	$ 72.05	$ 67.10	$ 70.35
4/2/2018	$ 73.65	$ 69.15	$ 73.30
4/9/2018	$ 74.65	$ 73.00	$ 74.30
4/16/2018	$ 76.45	$ 74.40	$ 74.75
4/23/2018	$ 76.90	$ 74.55	$ 76.50
4/30/2018	$ 76.95	$ 74.95	$ 75.95
5/7/2018	$ 77.08	$ 74.05	$ 76.45
5/14/2018	$ 77.40	$ 76.15	$ 76.70
5/21/2018	$ 78.60	$ 75.50	$ 78.60
5/28/2018	$ 80.90	$ 77.90	$ 79.25
6/4/2018	$ 79.65	$ 76.15	$ 76.20
6/11/2018	$ 77.20	$ 73.55	$ 75.65
6/18/2018	$ 79.30	$ 75.65	$ 79.30
6/25/2018	$ 80.75	$ 78.25	$ 79.95
7/2/2018	$ 85.95	$ 79.10	$ 85.75
7/9/2018	$ 87.25	$ 84.08	$ 85.70
7/16/2018	$ 85.88	$ 82.75	$ 84.00
7/23/2018	$ 84.70	$ 82.30	$ 83.40
7/30/2018	$ 84.30	$ 82.03	$ 82.60
8/6/2018	$ 84.05	$ 80.45	$ 81.20
8/13/2018	$ 86.20	$ 81.20	$ 85.35
8/20/2018	$ 85.95	$ 83.55	$ 84.35
8/27/2018	$ 86.10	$ 83.50	$ 86.00
9/3/2018	$ 88.20	$ 85.55	$ 87.65
9/10/2018	$ 89.00	$ 86.40	$ 88.80
9/17/2018	$ 90.90	$ 87.30	$ 89.05
Min	**$ 69.45**		$ 68.45
Max		**$ 87.30**	$ 89.05
Mid-point			$ 78.75
Mean			**$ 78.34**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	CPK
Next 5 Years	6.00%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	8.33
Median	8
High	11
Low	6
Standard Deviation	2.05
Number of Analysts	3

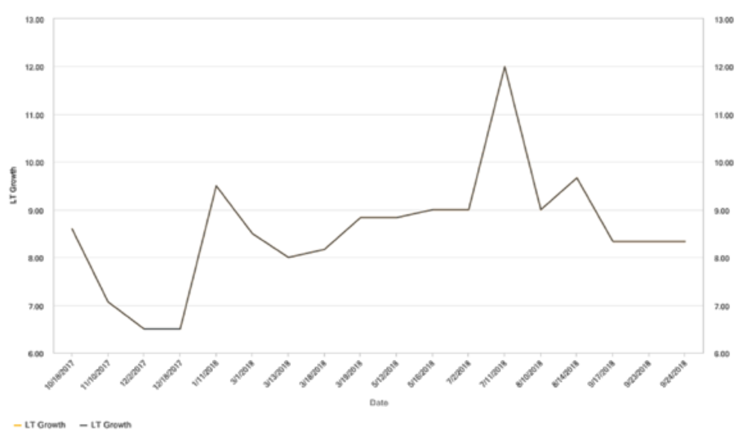
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS	8.50%	7.50%	8.50%
DPS	4.50%	5.50%	9.00%

	2017	2018	2019	'21-'23
DPS $	$ 1.26	$ 1.39	$ 1.54	$ 2.00

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 3
18-KGSG-560-RTS

New Jersery Resources, Corp

Date	High	Low	Close
9/25/2017	$ 42.70	$ 41.45	$ 42.15
10/2/2017	$ 43.13	$ 41.90	$ 42.80
10/9/2017	$ 44.10	$ 42.70	$ 43.30
10/16/2017	$ 44.05	$ 42.83	$ 43.75
10/23/2017	$ 44.30	$ 42.55	$ 44.25
10/30/2017	$ 44.85	$ 43.75	$ 44.05
11/6/2017	$ 44.50	$ 43.35	$ 43.80
11/13/2017	$ 45.45	$ 43.45	$ 44.75
11/20/2017	$ 44.90	$ 42.50	$ 42.55
11/27/2017	$ 44.90	$ 42.35	$ 44.35
12/4/2017	$ 45.40	$ 43.15	$ 43.60
12/11/2017	$ 43.70	$ 40.33	$ 40.95
12/18/2017	$ 41.30	$ 38.71	$ 38.75
12/25/2017	$ 40.35	$ 38.60	$ 40.20
1/1/2018	$ 40.40	$ 38.90	$ 39.40
1/8/2018	$ 40.40	$ 39.08	$ 39.45
1/15/2018	$ 40.01	$ 38.80	$ 38.95
1/22/2018	$ 40.10	$ 38.80	$ 39.50
1/29/2018	$ 39.55	$ 38.00	$ 38.30
2/5/2018	$ 38.60	$ 35.55	$ 37.90
2/12/2018	$ 39.45	$ 37.35	$ 39.25
2/19/2018	$ 39.60	$ 37.65	$ 39.60
2/26/2018	$ 40.25	$ 37.65	$ 38.05
3/5/2018	$ 39.65	$ 37.90	$ 39.50
3/12/2018	$ 40.20	$ 39.25	$ 40.05
3/19/2018	$ 40.05	$ 38.05	$ 38.15
3/26/2018	$ 40.40	$ 38.15	$ 40.10
4/2/2018	$ 41.08	$ 39.15	$ 40.60
4/9/2018	$ 40.95	$ 39.75	$ 40.20
4/16/2018	$ 41.28	$ 39.80	$ 40.35
4/23/2018	$ 41.93	$ 40.25	$ 41.60
4/30/2018	$ 42.93	$ 40.95	$ 42.60
5/7/2018	$ 43.85	$ 42.15	$ 43.85
5/14/2018	$ 43.95	$ 42.70	$ 42.80
5/21/2018	$ 43.98	$ 42.60	$ 43.90
5/28/2018	$ 45.13	$ 43.50	$ 43.95
6/4/2018	$ 44.05	$ 40.75	$ 40.80
6/11/2018	$ 42.50	$ 40.28	$ 42.45
6/18/2018	$ 44.75	$ 42.30	$ 44.35
6/25/2018	$ 45.20	$ 43.99	$ 44.75
7/2/2018	$ 47.60	$ 44.65	$ 47.30
7/9/2018	$ 47.30	$ 45.80	$ 45.95
7/16/2018	$ 46.15	$ 44.75	$ 45.60
7/23/2018	$ 46.20	$ 44.95	$ 45.25
7/30/2018	$ 46.45	$ 44.85	$ 45.75
8/6/2018	$ 46.90	$ 44.75	$ 45.55
8/13/2018	$ 47.30	$ 45.30	$ 46.95
8/20/2018	$ 47.25	$ 45.65	$ 45.90
8/27/2018	$ 46.00	$ 44.95	$ 45.60
9/3/2018	$ 47.03	$ 45.40	$ 46.75
9/10/2018	$ 47.68	$ 45.95	$ 47.40
9/17/2018	$ 47.85	$ 45.50	$ 46.65
Min	**$ 38.60**		$ 37.90
Max		**$ 45.95**	$ 47.40
Mid-point			$ 42.65
Mean			**$ 42.58**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	NJR
Next 5 Years	7.10%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	6.33
Median	6
High	8
Low	5
Standard Deviation	1.25
Number of Analysts	3

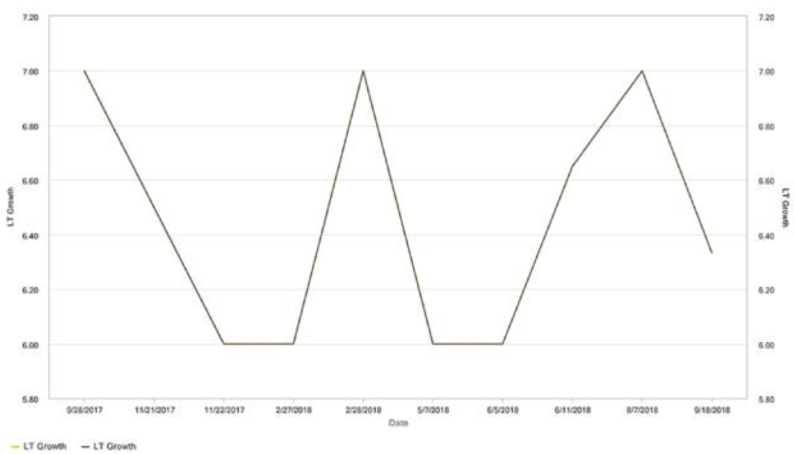
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic 10	Historic 5	Forecast '21 to '23
EPS	7.00%	5.50%	9.50%
DPS	7.50%	6.50%	4.00%

	2017	2018	2019	'21-'23
DPS $	$ 1.04	$ 1.10	$ 1.12	$ 1.24

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 3
18-KGSG-560-RTS

Northwest Natural Gas, Co.

Date	High	Low	Close
9/25/2017	$ 65.75	$ 64.08	$ 64.40
10/2/2017	$ 65.22	$ 64.28	$ 64.85
10/9/2017	$ 66.40	$ 64.40	$ 65.55
10/16/2017	$ 67.00	$ 65.25	$ 66.50
10/23/2017	$ 66.95	$ 64.85	$ 66.85
10/30/2017	$ 66.75	$ 65.15	$ 66.65
11/6/2017	$ 67.10	$ 65.85	$ 66.55
11/13/2017	$ 68.30	$ 66.00	$ 66.70
11/20/2017	$ 67.45	$ 65.95	$ 66.65
11/27/2017	$ 69.50	$ 66.45	$ 68.40
12/4/2017	$ 69.40	$ 66.95	$ 67.20
12/11/2017	$ 67.40	$ 63.80	$ 65.05
12/18/2017	$ 64.60	$ 58.70	$ 58.95
12/25/2017	$ 60.40	$ 58.55	$ 59.65
1/1/2018	$ 59.25	$ 57.81	$ 58.65
1/8/2018	$ 58.60	$ 55.70	$ 57.00
1/15/2018	$ 58.10	$ 56.90	$ 57.55
1/22/2018	$ 58.85	$ 57.15	$ 58.45
1/29/2018	$ 58.80	$ 56.50	$ 57.05
2/5/2018	$ 57.30	$ 52.48	$ 56.10
2/12/2018	$ 56.60	$ 54.55	$ 56.25
2/19/2018	$ 56.60	$ 54.40	$ 56.30
2/26/2018	$ 56.55	$ 51.50	$ 51.95
3/5/2018	$ 55.15	$ 52.06	$ 54.85
3/12/2018	$ 57.05	$ 55.08	$ 57.00
3/19/2018	$ 57.60	$ 55.35	$ 55.40
3/26/2018	$ 58.35	$ 55.35	$ 57.65
4/2/2018	$ 59.45	$ 56.75	$ 59.00
4/9/2018	$ 59.30	$ 57.95	$ 58.30
4/16/2018	$ 60.85	$ 58.30	$ 59.80
4/23/2018	$ 62.00	$ 59.85	$ 61.75
4/30/2018	$ 62.70	$ 60.75	$ 62.30
5/7/2018	$ 62.75	$ 59.78	$ 61.00
5/14/2018	$ 61.15	$ 57.40	$ 58.40
5/21/2018	$ 59.40	$ 57.00	$ 59.15
5/28/2018	$ 60.75	$ 59.00	$ 59.55
6/4/2018	$ 60.03	$ 57.65	$ 57.90
6/11/2018	$ 59.80	$ 56.90	$ 59.80
6/18/2018	$ 63.05	$ 59.80	$ 62.65
6/25/2018	$ 65.28	$ 61.80	$ 63.80
7/2/2018	$ 66.60	$ 63.53	$ 66.55
7/9/2018	$ 66.55	$ 63.70	$ 64.30
7/16/2018	$ 64.60	$ 62.75	$ 64.05
7/23/2018	$ 65.40	$ 62.65	$ 64.60
7/30/2018	$ 65.40	$ 63.40	$ 64.55
8/6/2018	$ 65.15	$ 61.50	$ 63.50
8/13/2018	$ 65.60	$ 63.25	$ 65.10
8/20/2018	$ 65.45	$ 63.25	$ 63.65
8/27/2018	$ 65.05	$ 62.50	$ 64.90
9/3/2018	$ 66.80	$ 64.75	$ 66.35
9/10/2018	$ 68.75	$ 66.22	$ 68.45
9/17/2018	$ 70.33	$ 67.45	$ 69.50
Min	**$ 55.15**		$ 51.95
Max		**$ 67.45**	$ 69.50
Mid-point			$ 60.73
Mean			**$ 61.87**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	NWN
Next 5 Years	4.50%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	4.33
Median	4
High	5
Low	4
Standard Deviation	0.47
Number of Analysts	3

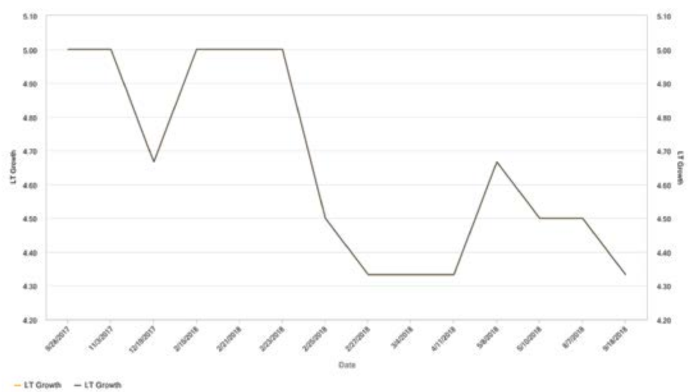
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS	-11.50%	-22.00%	30.50%
DPS	3.00%	1.50%	2.50%

	2017	2018	2019	'21-'23
DPS $	$ 1.88	$ 1.89	$ 2.00	$ 2.20

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 3
18-KGSG-560-RTS

One Gas, Inc.

Date	High	Low	Close
9/25/2017	$ 75.61	$ 73.55	$ 73.64
10/2/2017	$ 74.51	$ 70.66	$ 74.23
10/9/2017	$ 75.78	$ 74.10	$ 74.75
10/16/2017	$ 75.43	$ 73.95	$ 75.16
10/23/2017	$ 76.50	$ 74.44	$ 76.43
10/30/2017	$ 78.26	$ 75.39	$ 76.42
11/6/2017	$ 77.29	$ 75.83	$ 75.90
11/13/2017	$ 78.00	$ 75.91	$ 77.12
11/20/2017	$ 77.47	$ 76.03	$ 76.79
11/27/2017	$ 79.51	$ 76.45	$ 78.78
12/4/2017	$ 79.46	$ 76.71	$ 77.50
12/11/2017	$ 77.78	$ 75.43	$ 76.38
12/18/2017	$ 76.74	$ 72.32	$ 72.59
12/25/2017	$ 73.72	$ 72.26	$ 73.26
1/1/2018	$ 73.58	$ 70.74	$ 71.15
1/8/2018	$ 71.45	$ 67.39	$ 68.91
1/15/2018	$ 70.05	$ 68.28	$ 69.04
1/22/2018	$ 71.30	$ 68.79	$ 70.97
1/29/2018	$ 71.28	$ 69.08	$ 69.26
2/5/2018	$ 69.61	$ 64.05	$ 68.21
2/12/2018	$ 68.52	$ 66.18	$ 68.17
2/19/2018	$ 68.35	$ 63.51	$ 67.06
2/26/2018	$ 67.36	$ 62.20	$ 62.75
3/5/2018	$ 64.95	$ 62.45	$ 64.67
3/12/2018	$ 66.21	$ 64.36	$ 66.04
3/19/2018	$ 66.34	$ 63.45	$ 63.55
3/26/2018	$ 66.30	$ 63.60	$ 66.02
4/2/2018	$ 68.20	$ 65.00	$ 67.77
4/9/2018	$ 68.29	$ 66.00	$ 66.77
4/16/2018	$ 68.85	$ 66.22	$ 67.55
4/23/2018	$ 70.88	$ 67.53	$ 70.49
4/30/2018	$ 74.63	$ 69.69	$ 74.33
5/7/2018	$ 74.55	$ 71.60	$ 72.42
5/14/2018	$ 72.59	$ 70.08	$ 70.80
5/21/2018	$ 73.48	$ 70.40	$ 73.13
5/28/2018	$ 76.24	$ 72.49	$ 74.46
6/4/2018	$ 74.70	$ 70.33	$ 70.58
6/11/2018	$ 71.53	$ 69.20	$ 71.49
6/18/2018	$ 75.14	$ 71.36	$ 74.70
6/25/2018	$ 76.11	$ 74.29	$ 74.74
7/2/2018	$ 77.71	$ 74.55	$ 77.41
7/9/2018	$ 77.57	$ 73.75	$ 75.24
7/16/2018	$ 76.87	$ 74.46	$ 76.13
7/23/2018	$ 76.44	$ 74.66	$ 75.39
7/30/2018	$ 77.43	$ 74.34	$ 76.33
8/6/2018	$ 77.76	$ 76.19	$ 76.68
8/13/2018	$ 80.09	$ 76.44	$ 80.03
8/20/2018	$ 80.69	$ 78.83	$ 79.11
8/27/2018	$ 79.18	$ 77.94	$ 78.53
9/3/2018	$ 81.27	$ 78.58	$ 80.74
9/10/2018	$ 81.85	$ 80.03	$ 81.48
9/17/2018	$ 83.12	$ 79.52	$ 81.39
Min	**$ 64.95**		$ 62.75
Max		**$ 80.03**	$ 81.48
Mid-point			$ 72.12
Mean			**$ 73.12**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	OGS
Next 5 Years	5.50%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	5.8
Median	6
High	6.4
Low	5
Standard Deviation	0.59
Number of Analysts	3

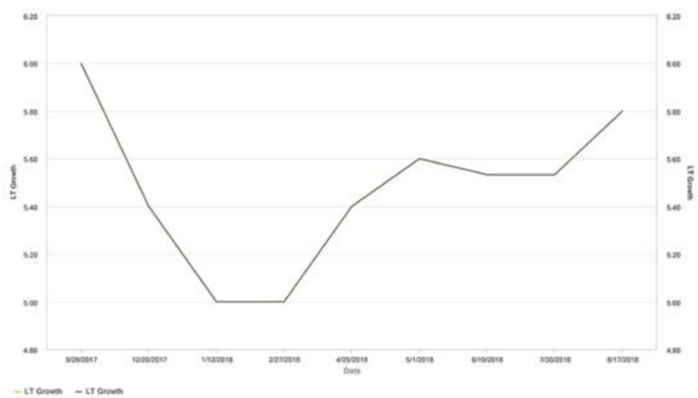
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS			10.50%
DPS			10.00%

	2017	2018	2019	'21-'23
DPS $	$ 1.68	$ 1.84	$ 2.00	$ 2.50

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 3
18-KGSG-560-RTS

South Jersey Industries, Inc.

Date	High	Low	Close
9/25/2017	$ 34.93	$ 34.06	$ 34.53
10/2/2017	$ 35.53	$ 34.47	$ 35.34
10/9/2017	$ 36.01	$ 35.28	$ 35.29
10/16/2017	$ 35.47	$ 31.76	$ 33.40
10/23/2017	$ 34.21	$ 32.71	$ 33.97
10/30/2017	$ 34.11	$ 32.14	$ 33.25
11/6/2017	$ 33.30	$ 31.50	$ 31.54
11/13/2017	$ 32.88	$ 31.58	$ 32.65
11/20/2017	$ 32.93	$ 32.32	$ 32.82
11/27/2017	$ 34.09	$ 32.61	$ 33.82
12/4/2017	$ 34.38	$ 32.86	$ 32.99
12/11/2017	$ 33.03	$ 31.33	$ 32.34
12/18/2017	$ 32.80	$ 30.75	$ 31.00
12/25/2017	$ 31.71	$ 30.78	$ 31.23
1/1/2018	$ 31.54	$ 30.62	$ 30.68
1/8/2018	$ 30.84	$ 29.04	$ 29.71
1/15/2018	$ 30.16	$ 29.27	$ 29.29
1/22/2018	$ 30.26	$ 29.00	$ 29.49
1/29/2018	$ 29.60	$ 28.49	$ 28.73
2/5/2018	$ 28.83	$ 26.41	$ 27.23
2/12/2018	$ 27.52	$ 26.19	$ 27.14
2/19/2018	$ 28.11	$ 25.96	$ 27.15
2/26/2018	$ 27.82	$ 26.04	$ 26.25
3/5/2018	$ 27.39	$ 26.11	$ 27.22
3/12/2018	$ 28.31	$ 27.12	$ 28.04
3/19/2018	$ 28.22	$ 26.69	$ 26.69
3/26/2018	$ 28.50	$ 26.73	$ 28.16
4/2/2018	$ 30.22	$ 27.58	$ 29.92
4/9/2018	$ 30.55	$ 29.49	$ 29.83
4/16/2018	$ 30.87	$ 29.32	$ 30.02
4/23/2018	$ 31.07	$ 29.89	$ 30.91
4/30/2018	$ 31.53	$ 30.40	$ 31.30
5/7/2018	$ 32.84	$ 30.95	$ 32.62
5/14/2018	$ 32.71	$ 32.02	$ 32.11
5/21/2018	$ 33.03	$ 31.97	$ 32.99
5/28/2018	$ 33.66	$ 32.58	$ 32.66
6/4/2018	$ 32.85	$ 30.00	$ 30.11
6/11/2018	$ 31.06	$ 29.67	$ 31.01
6/18/2018	$ 33.56	$ 30.49	$ 33.13
6/25/2018	$ 34.11	$ 33.02	$ 33.47
7/2/2018	$ 35.44	$ 33.44	$ 35.27
7/9/2018	$ 35.30	$ 33.55	$ 33.65
7/16/2018	$ 34.12	$ 33.02	$ 33.73
7/23/2018	$ 34.17	$ 33.09	$ 33.52
7/30/2018	$ 33.99	$ 33.13	$ 33.81
8/6/2018	$ 34.35	$ 32.74	$ 32.75
8/13/2018	$ 33.74	$ 32.47	$ 33.21
8/20/2018	$ 33.82	$ 32.79	$ 33.07
8/27/2018	$ 33.38	$ 32.47	$ 33.18
9/3/2018	$ 33.90	$ 33.01	$ 33.50
9/10/2018	$ 35.55	$ 33.25	$ 35.36
9/17/2018	$ 36.10	$ 34.74	$ 36.00
Min	**$ 27.39**		$ 26.25
Max		**$ 35.28**	$ 36.00
Mid-point			$ 31.13
Mean			**$ 31.67**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	SJI
Next 5 Years	12.00%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	11.35
Median	12.04
High	13
Low	9
Standard Deviation	1.71
Number of Analysts	3

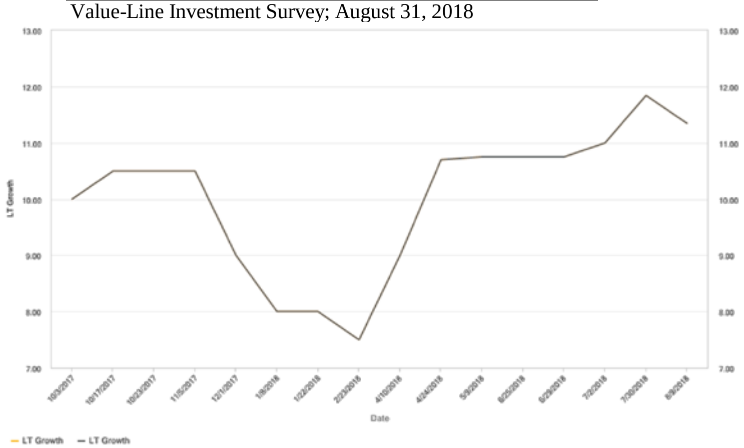
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS	2.50%	-1.50%	9.50%
DPS	8.50%	7.00%	4.00%

	2017	2018	2019	'21-'23
DPS $	$ 1.10	$ 1.15	$ 1.20	$ 1.35

Value-Line Investment Survey; August 31, 2018



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Spire, Inc.

Date	High	Low	Close
9/25/2017	$ 76.05	$ 73.90	$ 74.65
10/2/2017	$ 75.95	$ 74.30	$ 75.20
10/9/2017	$ 77.15	$ 75.05	$ 75.90
10/16/2017	$ 77.75	$ 75.25	$ 77.35
10/23/2017	$ 78.90	$ 76.10	$ 78.85
10/30/2017	$ 79.60	$ 77.85	$ 78.65
11/6/2017	$ 79.10	$ 77.40	$ 77.85
11/13/2017	$ 79.65	$ 76.80	$ 78.55
11/20/2017	$ 79.20	$ 77.65	$ 78.30
11/27/2017	$ 82.40	$ 78.00	$ 81.75
12/4/2017	$ 82.85	$ 79.45	$ 80.20
12/11/2017	$ 80.40	$ 76.35	$ 77.05
12/18/2017	$ 77.83	$ 73.65	$ 73.95
12/25/2017	$ 75.75	$ 73.75	$ 75.15
1/1/2018	$ 75.25	$ 71.20	$ 71.70
1/8/2018	$ 71.75	$ 68.60	$ 68.90
1/15/2018	$ 69.38	$ 67.80	$ 68.40
1/22/2018	$ 70.00	$ 68.05	$ 69.25
1/29/2018	$ 69.60	$ 62.38	$ 64.65
2/5/2018	$ 66.30	$ 60.09	$ 65.70
2/12/2018	$ 66.55	$ 63.91	$ 66.20
2/19/2018	$ 68.35	$ 64.70	$ 68.25
2/26/2018	$ 70.05	$ 67.40	$ 67.70
3/5/2018	$ 68.75	$ 66.80	$ 67.80
3/12/2018	$ 70.45	$ 67.40	$ 70.35
3/19/2018	$ 71.30	$ 68.25	$ 68.35
3/26/2018	$ 72.50	$ 68.50	$ 72.30
4/2/2018	$ 74.25	$ 71.25	$ 73.65
4/9/2018	$ 73.90	$ 69.95	$ 70.60
4/16/2018	$ 72.30	$ 69.80	$ 69.80
4/23/2018	$ 72.95	$ 69.90	$ 72.85
4/30/2018	$ 73.20	$ 70.60	$ 73.10
5/7/2018	$ 73.05	$ 69.18	$ 71.25
5/14/2018	$ 71.50	$ 69.15	$ 69.65
5/21/2018	$ 70.90	$ 69.45	$ 70.20
5/28/2018	$ 72.40	$ 69.90	$ 70.40
6/4/2018	$ 70.80	$ 66.50	$ 66.65
6/11/2018	$ 67.30	$ 64.95	$ 67.15
6/18/2018	$ 71.35	$ 67.05	$ 71.05
6/25/2018	$ 71.70	$ 70.35	$ 70.65
7/2/2018	$ 74.60	$ 70.45	$ 74.35
7/9/2018	$ 74.35	$ 71.90	$ 72.10
7/16/2018	$ 72.65	$ 70.85	$ 72.20
7/23/2018	$ 72.95	$ 71.10	$ 71.75
7/30/2018	$ 72.25	$ 70.25	$ 71.90
8/6/2018	$ 75.95	$ 72.20	$ 74.75
8/13/2018	$ 77.30	$ 74.10	$ 76.80
8/20/2018	$ 77.22	$ 75.25	$ 75.65
8/27/2018	$ 76.00	$ 74.20	$ 74.55
9/3/2018	$ 76.75	$ 74.45	$ 75.70
9/10/2018	$ 76.35	$ 74.65	$ 76.05
9/17/2018	$ 76.80	$ 73.65	$ 74.55
Min	**$ 66.30**		$ 64.65
Max		**$ 79.45**	$ 81.75
Mid-point			$ 73.20
Mean			**$ 72.70**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	SR
Next 5 Years	3.53%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	3.57
Median	3.57
High	5
Low	2.14
Standard Deviation	1.43
Number of Analysts	2.00

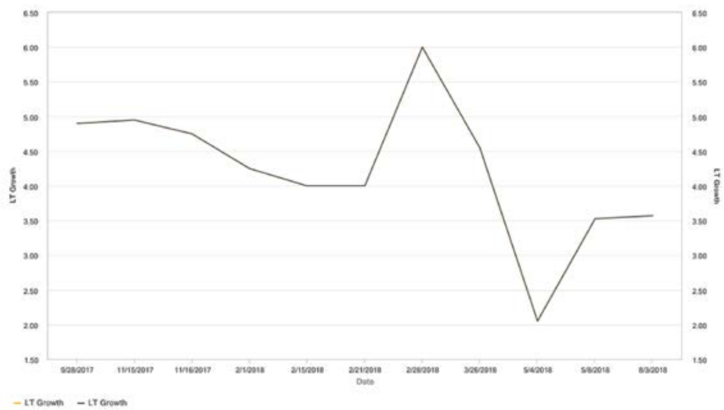
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS	4.00%	4.00%	7.50%
DPS	3.50%	4.00%	4.00%

	2017	2018	2019	'21-'23
DPS $	$ 2.10	$ 2.25	$ 2.40	$ 2.50

Value-Line Investment Survey; August 31, 2018



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Southwest Gas Holdings, Inc.

Date	High	Low	Close
9/25/2017	$ 79.36	$ 77.06	$ 77.62
10/2/2017	$ 78.16	$ 76.60	$ 77.67
10/9/2017	$ 81.10	$ 77.42	$ 79.89
10/16/2017	$ 80.46	$ 78.76	$ 80.38
10/23/2017	$ 82.23	$ 78.83	$ 82.20
10/30/2017	$ 82.81	$ 80.39	$ 80.50
11/6/2017	$ 83.40	$ 79.40	$ 80.08
11/13/2017	$ 83.11	$ 79.16	$ 82.69
11/20/2017	$ 82.48	$ 81.49	$ 81.70
11/27/2017	$ 86.29	$ 81.50	$ 86.23
12/4/2017	$ 86.87	$ 81.81	$ 82.81
12/11/2017	$ 83.14	$ 79.34	$ 80.11
12/18/2017	$ 83.01	$ 79.41	$ 80.23
12/25/2017	$ 81.31	$ 79.71	$ 80.48
1/1/2018	$ 81.19	$ 78.51	$ 78.84
1/8/2018	$ 79.44	$ 75.58	$ 75.75
1/15/2018	$ 76.61	$ 73.52	$ 74.24
1/22/2018	$ 75.93	$ 74.08	$ 75.19
1/29/2018	$ 75.93	$ 72.12	$ 72.22
2/5/2018	$ 72.08	$ 66.61	$ 69.91
2/12/2018	$ 70.18	$ 66.98	$ 68.85
2/19/2018	$ 69.24	$ 66.74	$ 69.17
2/26/2018	$ 70.03	$ 62.54	$ 64.14
3/5/2018	$ 69.33	$ 63.91	$ 69.26
3/12/2018	$ 71.11	$ 69.34	$ 70.42
3/19/2018	$ 70.39	$ 66.13	$ 66.20
3/26/2018	$ 68.50	$ 65.20	$ 67.63
4/2/2018	$ 69.73	$ 66.49	$ 69.07
4/9/2018	$ 70.20	$ 68.21	$ 68.96
4/16/2018	$ 71.80	$ 68.70	$ 71.01
4/23/2018	$ 75.39	$ 70.97	$ 74.70
4/30/2018	$ 74.79	$ 71.94	$ 74.32
5/7/2018	$ 74.55	$ 71.53	$ 72.82
5/14/2018	$ 73.33	$ 70.62	$ 70.79
5/21/2018	$ 73.95	$ 70.34	$ 73.55
5/28/2018	$ 76.60	$ 73.19	$ 76.25
6/4/2018	$ 76.78	$ 72.61	$ 73.89
6/11/2018	$ 75.41	$ 72.45	$ 74.60
6/18/2018	$ 78.81	$ 74.59	$ 77.96
6/25/2018	$ 78.14	$ 75.81	$ 76.27
7/2/2018	$ 80.32	$ 75.72	$ 79.99
7/9/2018	$ 80.67	$ 77.18	$ 79.72
7/16/2018	$ 79.72	$ 76.64	$ 78.72
7/23/2018	$ 79.35	$ 77.27	$ 77.47
7/30/2018	$ 79.81	$ 74.78	$ 77.93
8/6/2018	$ 80.06	$ 75.17	$ 78.92
8/13/2018	$ 81.66	$ 77.91	$ 80.91
8/20/2018	$ 81.41	$ 77.76	$ 78.43
8/27/2018	$ 78.59	$ 76.22	$ 77.32
9/3/2018	$ 80.80	$ 77.61	$ 80.37
9/10/2018	$ 83.20	$ 80.35	$ 82.13
9/17/2018	$ 82.60	$ 78.29	$ 79.40
Min	**$ 68.50**		$ 64.14
Max		**$ 81.81**	$ 86.23
Mid-point			$ 75.19
Mean			**$ 76.15**

Source: YahooFinance

I/B/E/S via YahooFinance

Growth Estimates	SWX
Next 5 Years	4.00%

Source: YahooFinance

FactSet Growth Estimat	LT Growth (%)
Mean	5.6
Median	5.6
High	7.2
Low	4
Standard Deviation	1.6
Number of Analysts	2.00

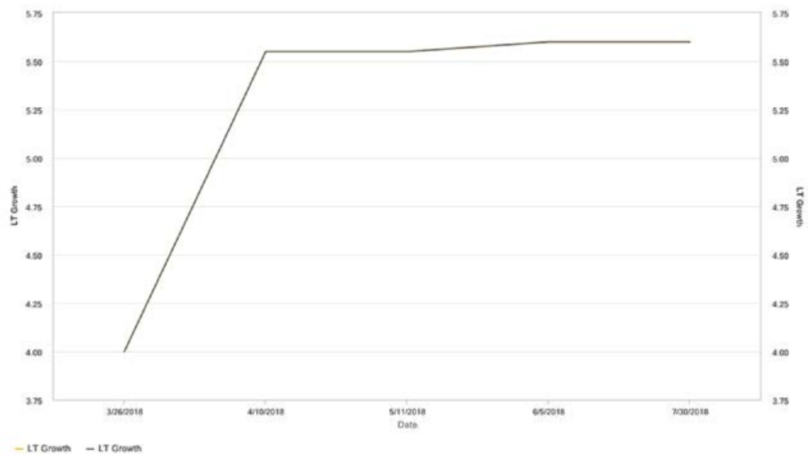
Source: S&P Global Market Intelligence

Value-Line Investment Survey

	Historic		Forecast
	10	5	'21 to '23
EPS	6.50%	5.00%	9.00%
DPS	8.00%	11.00%	6.50%

	2017	2018	2019	'21-'23
DPS $	$ 1.98	$ 2.08	$ 2.18	$ 2.60

Value-Line Investment Survey; August 31, 2018



Schedule AHG - 4
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Internal Rate of Return Analysis Summary

1	2	3	4	5	6	7	8	9	10	11	12	13	14
							Short-Term Growth EPS Growth				Long-Term Growth Years 5 Through 250		
		Average	ST Growth	LT Growth	2019	2018	2020	2021	2022	2023	2024	2025	Sum of 2021 through 2264
	IRR	Price	Estimate	Estimate	Dividends	Year 0	Year1	Year2	Year3	Year4	Year5	Year6	Year 7 through Year 250
Atmos Energy, Corp.	7.08%	$87.09	6.86%	4.28%	$2.08	($85.01)	$2.22	$2.38	$2.54	$2.71	$2.83	$2.95	$1,984,073.30
Chesapeake Utilities	6.66%	$78.34	7.96%	4.28%	$1.54	($76.80)	$1.66	$1.79	$1.94	$2.09	$2.18	$2.27	$1,530,118.46
New Jersey Resources, Corp	7.36%	$42.58	6.73%	4.28%	$1.12	($41.46)	$1.20	$1.28	$1.36	$1.45	$1.52	$1.58	$1,063,157.99
Northwest Natural Gas, Co.	7.86%	$61.87	5.04%	4.28%	$2.00	($59.87)	$2.10	$2.21	$2.32	$2.43	$2.54	$2.65	$1,780,895.88
One Gas, Inc.	7.63%	$73.12	7.95%	4.28%	$2.00	($71.12)	$2.16	$2.33	$2.52	$2.72	$2.83	$2.95	$1,986,614.68
South Jersey Industries, Inc.	9.16%	$31.67	9.21%	4.28%	$1.20	($30.47)	$1.31	$1.43	$1.56	$1.71	$1.78	$1.86	$1,248,716.06
Spire, Inc.	7.89%	$72.70	4.65%	4.28%	$2.40	($70.30)	$2.51	$2.63	$2.75	$2.88	$3.00	$3.13	$2,105,529.01
Southwest Gas Holdings, Inc.	7.58%	$76.15	6.28%	4.28%	$2.18	($73.97)	$2.32	$2.46	$2.62	$2.78	$2.90	$3.02	$2,034,107.99
Mean	7.65%												
Min	6.66%												
Max	9.16%												

Column 1) Proxy group
2) Internal rate of return calcuation -- Investors' discount rate that equates the stock price to the stream of future dividends
3) Average stock price September 25, 2017 through September 17, 2018
4) Average of short-term growth rates used in first 5 years
5) Long-term nGDP growth rate used after 2024
6) 2019 dividends reported by Value-Line
7) Year 0 Cashflow; stock price less 2019 dividend. This value represents the net price of the investors' purchase of the common stock.
8 through 11) Annual cashflow growing at short-term growth rate
12 through 250) Annual cashflow growing at long-term growth rate

STATE OF KANSAS)
) ss.
COUNTY OF SHAWNEE)

VERIFICATION

Adam Gatewood, being duly sworn upon his oath deposes and states that he is a Managing Financial Analyst for the Utilities Division of the Kansas Corporation Commission of the State of Kansas, that he has read and is familiar with the foregoing *Direct Testimony*, and attests that the statements contained therein are true and correct to the best of his knowledge, information and belief.

Adam Gatewood
Managing Financial Analyst
State Corporation Commission of the
State of Kansas

Subscribed and sworn to before me this 29th day of October, 2018.

VICKI D JACOBSEN
Notary Public - State of Kansas
My Appt Expires 6-30-22

Vicki D. Jacobsen
Notary Public

My Appointment Expires: June 30, 2022

CERTIFICATE OF SERVICE

18-KGSG-560-RTS

I, the undersigned, certify that a true and correct copy of the above and foregoing Staff Direct Testimony was served via electronic service this 29th day of October, 2018, to the following:

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18-KGSG-560-RTS

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