BEFORE THE STATE CORPORATION COMMISSION OF THE STATE OF KANSAS

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In the Matter of the Application of Black Hills/Kansas Gas Utility Company, LLC, d/b/a Black Hills Energy, for Approval of the Commission to Make Certain Changes in its Rates for Natural Gas Service

Docket No. 25-BHCG-298-RTS

REBUTTAL TESTIMONY OF ADRIEN M. MCKENZIE

ON BEHALF OF

BLACK HILLS/KANSAS GAS UTILITY COMPANY, LLC, d/b/a BLACK HILLS ENERGY

TABLE OF CONTENTS

I.	INTRODUCTION	1
	A. Overview and Summary	2
	B. ROEs of Opposing Witnesses Fail to Meet Regulatory Standards	3
II.	CAPITAL STRUCTURE	16
III.	RESPONSE TO STAFF WITNESS GATEWOOD	29
	A. Proxy Group	29
	B. Discounted Cash Flow Model	30
	C. Capital Asset Pricing Model	44
	D. Other ROE Issues	56
IV.	RESPONSE TO CURB WITNESS WOOLRIDGE	64
	A. Discounted Cash Flow Model	66
	B. Capital Asset Pricing Model	76
	C. Other ROE Issues	85

EXHIBITS

KSG Rebuttal Exhibit AMM-1	Implied Cost of Equity—National Allowed ROEs
KSG Rebuttal Exhibit AMM-2	Implied Cost of Equity—KCC Determined Allowed ROEs

LIST OF ACRONYMS

Atmos	Atmos Energy Corporation
Black Hills	Black Hills/Kansas Gas Utility Company, LLC
BHC	Black Hills Corporation
CAPM	Capital Asset Pricing Model
Commission	Kansas Corporation Commission
Company	Black Hills/Kansas Gas Utility Company, LLC
CURB	The Citizens' Utility Ratepayer Board
DCF	Discounted Cash Flow
DPS	dividends per share
ECAPM	Empirical Capital Asset Pricing Model
EPS	earnings per share
FERC	Federal Energy Regulatory Commission
FINCAP	Financial Concepts and Applications, Inc.
Fitch	Fitch Ratings, Inc.
GDP	Gross Domestic Product
IRR	internal rate of return
KCC	Kansas Corporation Commission
Moody's	Moody's Investors Service
MTB	market-to-book
ROE	Return on Equity
RRA	S&P Global Market Intelligence, RRA Regulatory Focus
	(formerly Regulatory Research Associates, Inc.
S&P	S&P Global Ratings
Staff	Kansas Corporation Commission Staff
Value Line	The Value Line Investment Survey
Zacks	Zacks Investment Research, Inc.

I. <u>INTRODUCTION</u>

1	Q.	PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.
2	A.	My name is Adrien M. McKenzie, and my business address is 3907 Red River Street, Austin,
3		Texas 78751.
4	Q.	IN WHAT CAPACITY ARE YOU EMPLOYED?
5	A.	I am President of FINCAP, a firm providing financial, economic and policy consulting
6		services to business and government.
7	Q.	ON WHOSE BEHALF ARE YOU TESTIFYING?
8	A.	I am testifying on behalf of Black Hills.
9	Q.	ARE YOU THE SAME ADRIEN M. MCKENZIE WHO FILED DIRECT
10		TESTIMONY IN THIS DOCKET?
11	А.	Yes.
12	Q.	WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?
13	A.	My purpose is to respond to the testimony of Mr. Adam H. Gatewood, submitted on behalf
14		of the Staff, and Dr. J. Randall Woolridge, on behalf CURB concerning the fair ROE that
15		Black Hills should be authorized to earn on its investment in providing gas utility service. ¹
16		In addition, I respond to Mr. Gatewood's and Dr. Woolridge's recommended adjustments to
17		the Company's requested capital structure.

¹ I refer to Mr. Gatewood and Dr. Woolridge collectively as the "Opposing Witnesses."

A. Overview and Summary

1 PLEASE SUMMARIZE THE PRINCIPAL CONCLUSIONS OF YOUR REBUTTAL Q. **TESTIMONY.** 2 3 Mr. Gatewood's recommended capital structure violates industry and regulatory guidelines Α. 4 and is an extreme outlier that would undermine Black Hills' financial integrity. I also 5 conclude that the Opposing Witnesses' ROE recommendations fall below a fair and 6 reasonable level for the Company's utility operations. My Rebuttal testimony demonstrates 7 that: 8 Black Hills must be granted an opportunity to earn a return that is competitive • 9 with other utilities and reflects a significant increase in long-term capital costs. Consideration of current interest rates and the ROE for other utilities demonstrate 10 that the ROE recommendations of the Opposing Witnesses are far too low. 11 12 Significantly higher bond yields indicate that the cost of equity is higher now than at the time of Black Hills' last Kansas rate 13 14 proceeding. 15 Adjusting national average allowed ROEs for 2020-Q1 2025 to account for the rise in bond yields implies a current cost of equity on 16 the order of 10.3%. 17 18 Adjusting prior ROE determinations of the KCC for current bond yields implies an average cost of equity of 9.97%. 19 20 Reference to prior authorized ROEs during periods of comparable bond yields implies a fair ROE of 10.49%. 21 22 There is no basis to assume that investors reference long-term forecasts of GDP • in developing their expectations for gas utilities and Mr. Gatewood's reliance on 23 this data undermines the reliability of his DCF results. 24 25 Mr. Gatewood's application of the CAPM fails to capture a realistic appraisal of • investors' forward-looking expectations and ignores the implications of firm size, 26 27 which biases the resulting cost of equity estimates downward. 28 Numerous flaws undermine the ROE analyses of CURB witness Dr. Woolridge, 29 including: 30 Reliance on a range of data that fails to reflect investors' expectations and current capital market conditions. 31

1 2		 Application of financial models in a manner that is inconsistent with their underlying assumptions. 			
3		 Failure to evaluate model inputs and exclude illogical results. 			
4		My Rebuttal testimony demonstrates that the Opposing Witnesses' ROE			
5		recommendations are simply too low and violate the economic and regulatory standards			
6		underlying a fair ROE.			
7		B. ROEs of Opposing Witnesses Fail to Meet Regulatory Standards			
8	Q.	WHAT IS THE BASIC CONCEPTUAL FRAMEWORK UNDERLYING THE COST			
9		OF CAPITAL?			
10	A.	The cost of equity is an "opportunity cost," meaning that investors look at other options they			
11		have in the capital markets in order to determine the cost they require to invest in common			
12		equity, including gas utilities like Black Hills. When the returns available from other			
13		opportunities—like utility bonds—move higher, investors naturally demand a higher return			
14		for common stocks as well. The cost of equity is higher than the yield on utility bonds			
15		because the risks of common stocks are much higher than bonds, but the cost of equity and			
16		the cost of long-term debt move in the same direction. ²			
17	Q.	ARE THERE AVAILABLE BENCHMARKS FOR GENERAL CHANGES IN			
18		CAPITAL COSTS?			
19	A.	Yes. Yields on 30-year Treasury bonds are generally accepted as a guide to the risk-free rate.			
20		While yields on long-term Treasury bonds can be impacted by monetary policy (e.g.,			

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quantitative easing) or a flight to safety in times of turmoil, they provide an observable

 $^{^2}$ This is no different than the interest rates on car loans or home mortgages, which generally move in the same direction as market yields on other financial instruments, such as Treasury bonds.

benchmark for underlying trends in capital costs. Similarly, utility bonds are actively traded
 in the debt markets, and the resulting yields offer a touchstone for the direction and
 magnitude of the return utilities must offer to attract capital.

4 Q. YOU NOTED IN YOUR DIRECT TESTIMONY THAT BOND YIELDS HAVE 5 CLIMBED CONSIDERABLY IN RECENT YEARS.³ HAS THAT INCREASE BEEN 6 SUSTAINED?

A. Yes. The table below compares the average yields on Treasury securities and Baa-rated
 public utility bonds over the pendency of Black Hills' last rate proceeding⁴ with those
 required in April 2025.

TABLE AMM-1 BOND YIELD TRENDS

	April	May-Dec.	Change	
Series	2025	2021	(bps)	_
10-Year Treasury Bonds	4.28%	1.47%	282	
30-Year Treasury Bonds	4.71%	2.02%	269	
Baa Utility Bonds	6.11%	3.30%	281	

Source: https://fred.stlouisfed.org; Moody's Credit Trends.

10As shown above, key interest rate benchmarks indicate that investors' required return11on debt securities has increased between approximately 270 to 280 basis points since Black

12 Hills' last Kansas rate proceeding.

³ McKenzie Direct at 8-9.

⁴ Docket No. 21-BHCG-418-RTS, Order Approving Unanimous Settlement Agreement (Dec. 30, 2021).

Q. HAS THERE BEEN ANY CHANGE IN THE RISKS OF UTILITIES OR BLACK HILLS THAT MIGHT OFFSET THIS UPWARD MOVE IN THE COST OF CAPITAL?

4 A. No. My Direct testimony documented the increasing challenges faced by electric and natural 5 gas utilities,⁵ with S&P revising its outlook on the utility sector to "negative" in February 6 2024, noting that, "Credit quality for North American investor-owned regulated utilities has 7 weakened over the past four years, with downgrades outpacing upgrades by more than three times."6 Similarly, Fitch concluded that its "deteriorating outlook" for the utility sector 8 9 "reflects continuing macroeconomic headwinds and elevated capex that are putting pressure on credit metrics in the high-cost funding environment."⁷ There is no evidence that the 10 11 significant increase in capital costs since Black Hills' last rate proceeding has been mitigated 12 by declining risk in the utility industry generally, or for Black Hills specifically.

13 Q. WHAT DO THE FACTS INDICATE WITH REGARD TO THE ROE

14 **RECOMMENDATIONS OF THE OPPOSING WITNESSES?**

A. In light of trends in recognized capital cost benchmarks, the ROE recommendations of the
 Opposing Witnesses are demonstrably insufficient. Reference to the Opposing Witnesses
 testimony in Black Hills' last rate proceeding drives home this point. The table below
 compares Mr. Gatewood's and Dr. Woolridge's 2021 ROE recommendations for Black Hills

⁵ McKenzie Direct at 7-8.

⁶ S&P Global Ratings, *Rising Risks: Outlook For North American Investor-Owned Regulated Utilities Weakens*, Comments (Feb. 14, 2024).

⁷ Fitch Ratings, Inc., North American Utilities, Power & Gas Outlook 2024 (Dec. 6, 2023).

with their recommendations in this case, along with corresponding yields on Baa utility 1 bonds and 30-year Treasury bonds. 2

			Baa Utility	30-Year
	Staff	CURB	Yield (a)	Gov't Yield
Sep-21	9.20%	8.75%	3.19%	1.92%
May-25	9.70%	9.50%	6.11%	4.71%
Change	0.50%	0.75%	2.92%	2.79%

TABLE AMM-2 COMPARISON OF ROE RECOMMENDATIONS

Baa utility yield from Moody's Investors Service. 30-Year Treasury yield from https://fred.stlouisfed.org/. Average yield for month prior to date of testimony.

3	As shown above, despite the fact that utility bond yields have increased on the order
4	of 290 basis points, Mr. Gatewood's ROE recommendation for Black Hills is only 50 basis
5	points higher, while Dr. Woolridge's recommendation has increased by only 75 basis points.
6	New Regulatory Finance concluded that the cost of equity changes about one-half as much
7	as interest rates. ⁸ Based on the Opposing Witnesses' recommendations in 2021, this would
8	imply a current cost of equity in the range of 10.20% to 10.65%. ⁹ This shows that the ROE
9	recommendations of the Opposing Witnesses are untethered from basic principles of
10	economic logic and should be rejected.

 ⁸ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports (2006) at 129.
 ⁹ CURB - 8.75% + 2.90%/2 = 10.20%; Staff - 9.20% + 2.90%/2 = 10.65%.

Q. DO ALLOWED ROES PROVIDE A BENCHMARK TO EVALUATE WHETHER THE ROE RECOMMENDATIONS OF THE OPPOSING WITNESSES ARE SUFFICIENT TO MEET REGULATORY STANDARDS?

A. Yes. Allowed ROEs provide a gauge of the reasonableness of the outcome of a cost of equity
analysis. In considering utilities with comparable risks, investors will always prefer to
provide capital to the opportunity with the highest expected return. If a utility is unable to
offer a return similar to that available from other investment opportunities of equivalent
risks, investors will become unwilling to supply the utility with capital on reasonable terms.

9 Q. DO HISTORICAL ALLOWED ROES, SUCH AS THOSE CITED BY THE

OPPOSING WITNESSES,¹⁰ PROVIDE A DIRECT GUIDE TO A FAIR ROE FOR BLACK HILLS UNDER CURRENT CAPITAL MARKET CONDITIONS?

A. No. Prior ROE findings must be viewed in the context of the capital market conditions that existed at the time those cases were before the respective regulators. As noted earlier, when bond yields move higher, investors naturally demand a higher return for common stocks as well. Looking backwards to historical allowed ROEs that were established when long-term bond yields were significantly lower ignores accepted financial principles. Value Line recently highlighted this disconnect:

18Another difficulty is the level of authorized return on equity (ROE) that's set19by politically motivated regulators. Commissioners are often looking back to20a time of historically low interest rates and using that period to set present21returns.¹¹

¹⁰ Gatewood Direct 9-13, 26-28; Woolridge Direct at 18-21.

¹¹ The Value Line Investment Survey, *Electric Utility (East) Industry* (May 9, 2025).

1	The disconnect between historically allowed ROEs and the recent increase in capital
2	costs observed by Value Line is illustrated in the figure below. As shown there, authorized
3	ROEs declined steadily from 1990 until 2021, in line with falling interest rates. While the
4	decline in ROEs was more gradual than the decrease in bond yields, this is to be expected.
5	As noted in my Direct testimony and discussed in greater detail below, financial research
6	supports the conclusion that equity risk premiums rise as bond yields decline, which partially
7	offsets the decline in capital costs measured by changes in interest rates.

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o 9

18% 17% 16% 15% 14% 13% 12% 11% 10% 9% 8% 7% 6% 5% 4% 3% 2% Authorized Gas ROE Baa Yield (2021-2025) Baa Utility Yield

FIGURE AMM-1 TRENDS IN AUTHORIZED GAS ROES AND BOND YIELDS

Source: Allowed ROEs from KGS Direct Exhibit AMM-8, pages 2-4, updated to reflect data through Q1 2025. Baa Utility bond yields from Moody's Investors Service.

10 As the chart above demonstrates, the upward shift in capital costs that began in 2022

11 has been swift and dramatic. While it took 22 years for interest rates to fall by one-half,¹²

¹² In 1990, the average yield on Baa utility bonds was 10.06 percent. It was not until 2012 that the average yield fell below 5.03 percent.

1	the Baa utility bond yield almost doubled in just 22 months. ¹³ Figure AMM-1 also clearly
2	shows that although allowed ROEs have made a modest move upward, they do not yet reflect
3	the sharp increase in utility bond yields.
4	The investment community has highlighted this disparity. As S&P Global Market
5	Intelligence noted:
6 7 8 9 10 11 12	The first nine months of 2024 saw a slight uptick in the average authorized ROEs for electric and gas utilities, influenced by the higher-interest-rate environment. However, the effect of interest rate increases on authorized returns has not been proportional, as regulators are slower to adjust ROEs upward than downward. Additionally, affordability concerns persist as regulators navigate customer rate hikes due to significant but necessary capital investment in the energy transition amid inflationary pressures. ¹⁴
13	Similarly, a Wall Street Journal article highlighted the cost pressures faced by utilities and
14	noted that, "Investors should exercise caution when picking up utility stocks." ¹⁵ As the
15	article observed, "Higher interest rates haven't only increased debt-financing costs for utility
16	companies but also raised the cost of capital that they are expected to deliver." Meanwhile,
17	Value Line noted that historical allowed ROEs are "based on a historically low and now out-
18	of-date cost of capital." ¹⁶ Value Line recently advised electric utility investors that, "We
19	recommend that new commitments only be made on individual stocks when the midpoint of
20	our annual total return projection is at 11% or better." ¹⁷

¹³ During December 2021, the yield on Baa utility bonds averaged 3.27%. Over the six months ending December 2023, monthly average bond yields ranged from 5.68% to 6.61%.

¹⁴ S&P Global Market Intelligence, Major energy rate case decisions in the US – January-September 2024, Regulatory Focus (Oct. 30, 2024).

¹⁵Jinjoo Lee, Utilities Get an Inflation Shock, Wall Street Journal (Jan. 3, 2024). https://www.wsj.com/finance/investing/utilities-get-an-inflation-shock-cb821c4e.
 ¹⁶ The Value Line Investment Survey, *Electric Utility (East) Industry* (May 10, 2024).
 ¹⁷ The Value Line Investment Survey, *Electric Utility (East) Industry* (May 9, 2025).

1Q.WHAT IS THE OBVIOUS CONCLUSION FROM THIS OBSERVABLE2EVIDENCE?

A. This evidence conclusively demonstrates that the cost of capital—both debt and equity—has
increased significantly, and that allowed ROEs have failed to keep pace.

Q. AFTER ADJUSTING FOR CURRENT FINANCIAL MARKET CONDITIONS, WHAT DOES A COMPARISON WITH RECENT ALLOWED ROES INDICATE WITH RESPECT TO THE OPPOSING WITNESSES' RECOMMENDATIONS?

- 8 Explicit consideration of recent bond yield increases demonstrates that the ROEs A. 9 recommended by the Opposing Witnesses are inadequate. This is shown on KGS Rebuttal 10 Exhibit AMM-1. There I subtract the average Baa utility bond yield corresponding to the 11 ROEs approved nationally for natural gas utilities from 2020 to O1 2025 to compute the 12 implied risk premium. There is considerable empirical evidence that the equity risk premium expands as interest rates decline and contracts as interest rates rise.¹⁸ Accordingly, because 13 interest rates are now higher than over the period from 2020 to Q1 2025, I adjust the 14 historical risk premiums downward.¹⁹ 15
- As shown on KGS Rebuttal Exhibit AMM-1, adjusting the ROEs approved for natural gas utilities over the 2020 to Q1 2025 period to reflect the impact of higher interest rates results in an implied ROE in today's capital markets of 10.33%. This benchmark demonstrates that the Opposing Witnesses' ROE recommendations are clearly insufficient.

¹⁸ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 128 (noting that, "Published studies by Brigham, Shome, and Vinson (1985), Harris (1986), Harris and Marston (1992, 1993), Carleton, Chambers, and Lakonishok (1983), Morin (2005), and McShane (2005), and others demonstrate that, beginning in 1980, risk premiums varied inversely with the level of interest rates – rising when rates fell and declining when rates rose.").
¹⁹ As can be seen in KGS Direct Exhibit AMM-9 at page 5, the risk premium contracts about 47 basis points for each 100-basis point increase in bond yields.

Q. STAFF WITNESS GATEWOOD CITES TO ROES FROM LITIGATED RATE PROCEEDINGS AT THE KCC.²⁰ WHAT DOES THIS DATA SUGGEST ABOUT THE OPPOSING WITNESSES' RECOMMENDATIONS?

4 A. Prior approved ROEs for utilities in Kansas further highlight the inadequacy of the Opposing 5 Witnesses' recommendations. As shown on KGS Rebuttal Exhibit AMM-2, after accounting 6 for the impact of changes in bond yields since the proceedings cited by Mr. Gatewood, ROEs 7 approved by the Commission imply an average ROE under current capital market conditions 8 of 9.97%. In Docket Nos. 10-KCPE-415-RTS and 05-WSEE-981-RTS, when bond yields were most comparable to current levels,²¹ the KCC authorized ROEs of 10.0%. This 9 10 provides additional confirmation that ROE recommendations ranging from 9.50% to 9.70% 11 are understated.

12 Q. SINGLE-A UTILITY BOND YIELDS AVERAGED 5.91% DURING APRIL 2025.

13 WHAT ROES WERE BEING AUTHORIZED NATIONALLY THE LAST TIME

14 UTILITY BOND YIELDS WERE COMPARABLE TO PRESENT LEVELS?

A. Based on a review of KGS Direct Exhibit 8, the last time that single-A utility bond yields
were near current levels was during the period Q4 2004 through Q1 2007. The average
allowed ROEs for gas utilities corresponding to these bond yields are presented in Table
AMM-3 below.

²⁰ Gatewood Direct at 26.

 $^{^{21}}$ The average of the Baa bond yields reported by Mr. Gatewood for these two proceedings is 6.15%, which is comparable to the 6.11% average for April 2025.

	Average	Single-A
Calendar	Allowed	Utility
Quarter	ROE	Yield
Q4-04	10.66%	5.94%
Q1-05	10.65%	5.74%
Q2-05	10.54%	5.52%
Q3-05	10.47%	5.51%
Q4-05	10.40%	5.82%
Q1-06	10.63%	5.85%
Q2-06	10.50%	6.37%
Q3-06	10.45%	6.19%
Q4-06	10.14%	5.86%
Q1-07	10.44%	5.90%
	10.49%	5.87%

TABLE AMM-3 GAS ROES AND UTILITY BOND YIELDS

1		As shown in the table above, when single-A utility bond yields were roughly
2		equivalent to the 5.91% average for April 2025, authorized ROEs for natural gas utilities
3		averaged 10.49%. This evidence also demonstrates that the ROEs recommended by the
4		Opposing Witnesses are below a reasonable level.
5	Q.	WHAT OTHER EVIDENCE INDICATES THAT THE OPPOSING WITNESSES'
6		RECOMMENDED ROES FAIL TO MEET REGULATORY STANDARDS?
7	A.	As discussed in my Direct testimony, ²² expected rates of return for firms in the competitive
8		sector of the economy are also relevant in determining the appropriate return to be allowed
9		for rate-setting purposes. The idea that investors evaluate utilities against the returns
10		available from other investment alternatives-including the low-risk companies in my Non-
11		Utility Group-is a fundamental cornerstone of modern financial theory. Aside from this

²² McKenzie Direct at 46-48.

theoretical underpinning, any casual observer of stock market commentary and the investment media quickly comes to the realization that investors' choices are almost limitless. It follows that utilities must offer a return that can compete with other riskcomparable alternatives, or capital will simply go elsewhere.

5 In fact, returns in the competitive sector of the economy form the very foundation 6 for utility ROEs because regulation purports to serve as a substitute for the actions of 7 competitive markets. The Supreme Court has recognized that the degree of risk, not the nature of the business, is relevant in evaluating an allowed ROE for a utility.²³ The cost of 8 9 capital is based on the returns that investors could realize by putting their money in other 10 alternatives, and the total capital invested in utility stocks is only the tip of the iceberg of 11 total common stock investment. My reference to a low-risk group of non-utility companies 12 is entirely consistent with the guidance of the Supreme Court and Dr. Woolridge's 13 acknowledgement that a fair ROE should be "comparable to returns investors expect to earn on investments with similar risk."²⁴ 14

Q. DID MR. GATEWOOD OR DR. WOOLRIDGE PRESENT ANY OBJECTIVE
EVIDENCE THAT WOULD SUPPORT A FINDING THAT YOUR NON-UTILITY
GROUP IS RISKIER THAN BLACK HILLS OR THE COMPANIES IN THEIR
PROXY GROUPS?

A. No. They presented no meaningful evidence to rebut the results for my Non-Utility Group,
 or otherwise demonstrate that my Non-Utility Group is riskier than Black Hills or their proxy

²³ Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

²⁴ Woolridge Direct at 3.

groups of utilities. Instead, Dr. Woolridge for instance, simply points out operational
 differences between my Non-Utility Group and comparable risk utilities:

While many of these companies are large and successful, their lines of business are vastly different from the gas distribution business and they do not operate in a highly regulated environment. As important, the previously discussed upward bias in the EPS growth rate forecasts of Wall Street analysts is particularly severe for non-utility companies and therefore the DCF equity cost rate estimates for this group are particularly overstated.²⁵

9 It should first be noted that nowhere in his testimony does Dr. Woolridge provide any 10 support for his assertion of a "particularly severe" upward bias in EPS growth rate forecasts 11 for non-utility companies relative to utilities. More importantly, my Direct testimony did not 12 contend that the operations of the companies in the Non-Utility Group are comparable to those of gas utilities. Clearly, operating a worldwide enterprise in the beverage, 13 14 pharmaceutical, retail, or food industry involves unique circumstances that are as distinct from one another as they are from a utility. But as the Supreme Court recognized, investors 15 16 consider the expected returns available from all these opportunities in evaluating where to 17 commit their scarce capital. The simple observation that a firm operates in non-utility 18 businesses says nothing at all about the overall investment risks perceived by investors, 19 which is the very basis for a fair rate of return. So long as the risks associated with the Non-20 Utility Group are comparable to Black Hills and other utilities the resulting DCF estimates 21 provide a meaningful benchmark for the cost of equity. As demonstrated in Table 5 to my 22 Direct testimony, which is reproduced as Table AMM-4, below, a comparison of objective

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²⁵ *Id.* at 101.

1 risk measures demonstrates conclusively that the Non-Utility Group is regarded as less risky

2 than Black Hills, making it a conservative benchmark for a fair ROE in this case.

			Value Line		
	Credit Ratings		Safety Financial		
Proxy Group	<u>S&P</u>	Moody's	<u>Rank</u>	Strength	<u>Beta</u>
Non-Utility Group	A-	A2	1	A+	0.80
Gas Group	BBB+	A3	2	А	0.91
BHC	BBB+	Baa2	2	А	1.05

TABLE AMM-4COMPARISON OF RISK INDICATORS

3 Q. DOES DR. WOOLRIDGE AGREE THAT BOND RATINGS AND BETAS ARE

4 MEANINGFUL INDICATORS OF INVESTMENT RISK?

A. Yes. In his Direct testimony, Dr. Woolridge states, "I believe that bond ratings provide a good
independent assessment of the investment risk of a company."²⁶ Later in his testimony, Dr.
Woolridge directly compares the investment risk of public utilities to various other industries
by computing industry betas, stating that "beta ... according to modern capital market theory,
is the only relevant measure of investment risk".²⁷ Dr. Woolridge makes no caveats as to
the appropriateness of using bond ratings and betas to compare the investment risk of groups
of utilities to groups of non-utilities.

12 Q. DOES THE FACT THAT UTILITIES ARE REGULATED INVALIDATE THIS

13

COMPARISON OF OBJECTIVE RISK INDICATORS?

A. Absolutely not. While utilities operate under a regulatory regime that differs from firms in
the competitive sector, any risk-reducing benefit of regulation is incorporated in the overall

²⁶ *Id.* at 22.

²⁷ *Id.* at 34.

1 indicators of investment risk presented in Table AMM-4. The impact of regulation on a 2 utility's investment risks is one of the key elements considered by credit rating agencies and 3 investment advisory services, such as S&P and Value Line, when establishing corporate 4 credit ratings and other risk measures. As a result, the impact of regulatory protections is 5 already reflected in my risk analysis. Meanwhile, beta values are premised on stock price 6 volatility relative to the overall market and are not dependent on an assessment of firm-7 specific considerations. As a result, the impact of regulatory differences on investment risk 8 is accounted for in the published risk indicators relied on by investors and cited in my Direct 9 testimony.

10 Q. WHAT WERE THE RESULTS OF YOUR ROE ANALYSIS FOR THE NON11 UTILITY GROUP?

A. As shown on KSG Direct Exhibit AMM-10 (page 3), the average ROEs for the Non-Utility
group ranged from 10.5% to 10.8%.

II. <u>CAPITAL STRUCTURE</u>

14 Q. WHAT CAPITAL STRUCTURE DOES MR. GATEWOOD RECOMMEND FOR 15 BLACK HILLS?

16 A. Mr. Gatewood recommends a capital structure consisting of 54.24% long-term debt and

- 17 45.76% common equity, which is based on the capitalization of the Company's parent, BHC,
- 18 as of February 28, 2025.²⁸ Meanwhile, the Company proposed a capital structure consisting
- 19 of 50.44% common equity and 49.56% long-term debt.

²⁸ Gatewood Direct at 41.

1 Q. IS THE CAPITAL STRUCTURE RECOMMENDED BY STAFF REASONABLE?

A. No. Mr. Gatewood makes his capital structure recommendation in a vacuum, without regard
 for industry norms or accepted checks of reasonableness. Mr. Gatewood's capital structure
 recommendation is so far below such benchmarks that it is completely unsupportive of the
 Company's financial condition and would likely damage its financial integrity.

The importance of a healthy equity layer is even more critical in the face of Mr. 6 7 Gatewood's inadequate ROE recommendation. If the Company is to maintain a balanced 8 risk position, increased operating risk (in this case, reflected in Staff's reduced ROE 9 recommendation) must be offset with decreased financial risk (reflected in a higher common 10 equity ratio). It is simply not reasonable to compound the harmful effects of a lower ROE 11 with a lower equity level. In this case, however, Mr. Gatewood reinforces his unreasonably 12 low ROE with an unreasonably low equity ratio proposal. This combination results in an 13 outcome that is out of step with mainstream practices.

14 Q. DO YOU AGREE THAT BLACK HILLS' REQUESTED CAPITAL STRUCTURE IS

15 NOT REPRESENTATIVE OF OTHER GAS UTILITIES?

A. No. As I noted in my Direct testimony,²⁹ the Company's requested 50.44% common equity
ratio falls well within the range of capital structures maintained by the group of gas utilities
in my proxy group. I also referenced recent findings in other regulatory proceedings over
the eight quarter period ending in Q3 2024.³⁰ These results indicate that Black Hills'

²⁹ McKenzie Direct at 58.

³⁰ *Id.* at 59.

requested common equity ratio is well within the range of capital structures recently
 approved for other gas utilities, and below the average of 52.77%.³¹

3 Q. DOES AN UPDATE TO YOUR ANALYSIS CAUSE YOU TO CHANGE YOUR 4 OPINION?

5 A. No. The table below presents the common equity ratios approved for gas utilities over the 6 past eight quarters, which is an update to Table 8 from my Direct testimony:

	Low	High	Average
Q2-23	50.00%	 56.73%	56.73%
Q3-23	48.00%	 51.20%	51.20%
Q4-23	48.00%	 51.31%	51.31%
Q1-24	50.87%	 59.07%	53.11%
Q2-24	50.00%	 60.61%	53.07%
Q3-24	48.00%	 62.38%	51.49%
Q4-24	45.30%	 83.18%	54.30%
Q1-25	48.00%	 52.50%	50.13%
Average	48.52%	 59.62%	52.67%

TABLE AMM-5GAS UTILITY ALLOWED COMMON EQUITY RATIOS

Source: S&P Global Market Intelligence, Major Rate Case Decisions, RRA Regulatory Focus (Apr. 25, 2025, Feb. 4, 2025, Feb. 6, 2024). Excludes Limited Issuer Riders and capital structures that include cost-free items.

7 As demonstrated in table above, the Company's requested common equity ratio of

8 50.44% falls comfortably within the 48.52% to 59.62% benchmark range, although it falls

9 below the average in all but one of the past eight quarters. In other words, the Company's

³¹ *Id.* at Table 8.

requested equity ratio of 50.44% is conservative when compared to the capitalizations
 recently approved for other gas utilities.

Meanwhile, Mr. Gatewood's common equity ratio at 45.76% falls well outside the range of capital structures approved for other gas utilities and is inconsistent with these industry standards. If an analyst's capital structure proposal is below accepted benchmarks, a higher ROE could be justified to offset the additional financial risk.³²

7 Q. HAS CURB WITNESS WOOLRIDGE RECOGNIZED THAT THE AVERAGE

8 EQUITY RATIO ALLOWED FOR OTHER GAS UTILITIES PROVIDES AN

9 APPROPRIATE BASIS TO ESTABLISH THE CAPITAL STRUCTURE FOR A GAS

10 UTILITY IN KANSAS?

11 A. Yes. In Docket No. 24-KGSG-610-RTS, Dr. Woolridge contended that the common equity

12 ratio requested by Kansas Gas Service was higher than necessary. Rather than use the

13 utility's actual capital structure, Dr. Woolridge concluded:

14I am adopting a capital structure with a common equity ratio of 52.45%, which15was the average common equity ratio approved by state commissions for gas16distribution companies in 2023.33

17 CURB witness Woolridge's position on this issue in Docket No. 24-KGS-610-RTS 18 further illustrates the unreasonableness of Staff's capital structure recommendation.

- 19 Considering that RRA reported an average equity ratio authorized in natural gas utility rate
- 20

proceedings of 52.13% for 2024,34 it also supports the reasonableness of Black Hills'

³² Dr. Woolridge also recognizes the interrelationship between the common equity ratio, risk, and the required ROE, noting that a lower common equity ratio implies a relatively higher ROE. Woolridge Direct at 27.

³³ Docket No. 24-KGSG-610-RTS, *Testimony and Exhibits of J. Randall Woolridge, Ph.D.* (Jul. 1, 2024) at 31.

³⁴ S&P Global Market Intelligence, *Major Energy Rate Case Decisions in the US January-December 2024*, RRA Regulatory Focus (Feb. 4, 2025) at 6.

1 requested capital structure. Finally, while Dr. Woolridge's recommended common equity 2 ratio of 50.0% for Black Hills might represent a "small adjustment" from the Company's proposed capital structure,³⁵ this adjustment is unsupported and contradicted by his own 3 4 testimony in 2024.

5

Q. ARE MR. GATEWOOD'S ARGUMENTS CONCERNING ROE AND CAPITAL 6 STRUCTURE INTERNALLY CONSISTENT?

7 A. No. On the one hand, Mr. Gatewood argues for the use of an authorized ROE predicated on 8 a proxy group of other natural gas utilities but then proposes to look to the capitalization of 9 BHC when evaluating a capital structure. Meanwhile, in the most recent gas utility rate 10 proceeding cited by Mr. Gatewood as a comparable benchmark, Staff supported a common equity ratio of 60.21% for Kansas Gas Service.³⁶ While Mr. Gatewood testifies that, "Staff 11 believe it is essential that their recommendations embody consistency across rate cases,"37 12 13 Staff's capital structure recommendation in this case dramatically violates this imperative. Mr. Gatewood has not demonstrated that there is any fundamental difference in the business 14 15 risks between the gas utility operations of Kansas Gas Service and Black Hills. It is 16 inconceivable that any such differences could possibly justify a 14.5% spread in the common equity ratio between these two Kansas utilities. This highlights the arbitrary and unfounded 17 18 nature of Staff's position on capital structure in this case. It does not consider industry 19 standards, but instead adopts the capital structure of the parent company without evaluating 20 the reasonableness of the outcome.

³⁵ Woolridge Direct at 31.

³⁶ Docket No. 24-KGSG-610-RTS, Direct Testimony Prepared by Adam H. Gatewood at p. 32 (Jul. 1, 2024).

³⁷ Gatewood Direct at 9.

1 Q. IS THE 45.76% COMMON EQUITY RATIO PROPOSED BY MR. GATEWOOD IN

2 THIS CASE CONSISTENT WITH THE CAPITALIZATION IN EFFECT FOR

3 BHC'S OTHER JURISDICTIONS?

4 A. No. The common equity' ratios currently approved for BHC's other utility operations are
5 presented in the table below.

	<u>Equity Ratio</u>
Arkansas Gas (a)	50.77%
Colorado Electric	48.00%
Colorado Gas	50.87%
Iowa Gas	(b)
Nebraska Gas	50.00%
South Dakota Electric	53.00%
Wyoming Electric	52.00%
Wyoming Gas	<u>51.00%</u>
Average	50.81%

TABLE AMM-6COMMON EQUITY RATIOS – BHC UTILITIES

(a) Excludes short-term debt.

(b) Global settlement -- not specified.

⁶ As illustrated above, Mr. Gatewood's recommended 45.76% common equity ratio 7 falls far below the capitalizations in effect for BHC's other jurisdictions, which imply an 8 average common equity ratio of 50.81%. In Docket No. 19-ATMG-525-RTS, Mr. Gatewood 9 concluded that his recommended capital structure "will not cause Kansas to be an outlier 10 relative to Atmos' other divisions."³⁸ The exact opposite is true in this proceeding, with Mr. 11 Gatewood's capital structure recommendation deviating sharply from the capitalization

³⁸ *Id.* at p. 19.

1 approved for BHC's other utility operations. Thus, in addition to falling far below the 2 benchmark equity ratios indicative of financial policies in the gas utility industry, Mr. 3 Gatewood's proposed 45.76% common equity ratio fails his own test of reasonableness and 4 should be rejected.

5

WHAT OTHER EVIDENCE ILLUSTRATES THE UNREASONABLENESS OF MR. Q. 6 GATEWOOD'S PROPOSED COMMON EQUITY RATIO?

7 The bar chart in Figure AMM-2 below compares Mr. Gatewood's recommended weighted A. 8 cost of equity of 4.44% with those approved by state regulators for gas utilities across the 9 country over the eight quarters ending March 2025. These observations represent all 10 decisions reported by S&P Global Market Intelligence that specify an ROE and an equity 11 ratio for gas utilities during this period.



FIGURE AMM-2 WEIGHTED COST OF EQUITY – GAS UTILITIES

As shown above, when Mr. Gatewood's proposed capital structure is considered along with his recommended ROE of 9.7%, the resulting weighted cost of equity of 4.44% falls at the bottom of the distribution allowed by state regulators for other gas utilities. It is also dramatically less than the 5.78% weighted cost of equity recommended by Staff for Kansas Gas Service or the 5.56% weighted cost of equity Mr. Gatewood recommended for Atmos.³⁹ This indicates that Staff's position in this proceeding is an outlier relative to other

Source: S&P Global Market Intelligence, Major Rate Case Decisions, RRA Regulatory Focus (Apr. 25, 2025, Feb. 4, 2025, Feb. 6, 2024). Authorized Return on Equity * Common Equity Ratio. Excludes limited issue riders and decisions where a data element was not disclosed or where capital structure contained cost-free items or tax credit balances.

³⁹ Docket No. 24-KGSG-610-RTS, *Direct Testimony Prepared by Adam H. Gatewood* at p. 4 (Jul. 1, 2024); Docket No. 23-ATMG-359-RTS, *Direct Testimony Prepared by Adam H. Gatewood* at p. 4 (Jan. 17, 2023).

jurisdictions and other gas utilities in Kansas. The KCC should reject Mr. Gatewood's
 recommendations accordingly.

3 Q. MR. GATEWOOD AND DR. WOOLRIDGE INTRODUCE THE CONCEPT OF 4 "DOUBLE LEVERAGE" THROUGH A COMPARISON OF BLACK HILLS' 5 REQUESTED CAPITAL STRUCTURE WITH BHC.⁴⁰ IS THIS A LEGITIMATE 6 CONCERN?

7 A. No. Ultimately, support for this issue is based on the misguided notion that the capital 8 structure for an operating subsidiary is dependent on how the upstream parent is financed. 9 The cost of equity to the operating subsidiary is then the overall weighted average cost of 10 capital to the parent since the equity capital at the subsidiary level is said to have been raised 11 by the parent through a mixture of debt and equity. This approach is often referred to as 12 "double leverage." But taking the premise underlying double leverage to its logical 13 conclusion, the source of the equity capital invested in BHC should also be traced to its 14 ultimate source; namely, the individual and institutional shareholders. While this would not 15 make sense, it illustrates the serious conceptual and practical flaws underlying Mr. 16 Gatewood's and Dr. Woolridge's discussion.

In fact, defaulting to the parent company capital structure violates the core notion that an investment's required rate of return depends on its particular risks. Cost of capital has to do with the use of the funds and not with the source of the funds, and the same is true for the appropriate capital structure. The fair rate of return and capital structure corresponding to any investment are dictated by the risk of that investment, and not by the

⁴⁰ Gatewood Direct at 25; Woolridge Direct at 26.

1		manner in which that investment is financed. Whether the equity capital invested in utilities
2		is provided from a highly leveraged hedge fund, or from the life savings of mom-and-pop
3		investors, the appropriate return and capital structure must reflect the utility's risks,
4		regardless of the identity of the investor. Many prominent experts have taken positions
5		rejecting the imputation of a parent company's capital structure to its utility subsidiary. As
6		noted in New Regulatory Finance:
7 8 9		The double leverage argument violates the core notion that an investment's required return depends on its particular risks. The Double Leverage approach has no place in regulatory practice and should be discarded. ⁴¹
10		Similarly, FERC concluded that "[t]he rate of return to a [utility] should not depend
11		on who owns the [utility], nor on how that owner, whether a holding company or individual
12		stockholders, financed its investment." ⁴² The KCC should reject the suggestion that BHC's
13		capital structure is relevant in establishing rates for Black Hills in this proceeding.
14	Q.	DOES THE FACT THAT BLACK HILLS IS ULTIMATELY OWNED BY BHC IN
15		ANY WAY ALTER THE STANDARDS THAT UNDERLIE THE DETERMINATION
16		OF AN APPROPRIATE CAPITAL STRUCTURE AND ROE?
17	A.	No. While Black Hills has no publicly traded common stock and all equity capital is
18		ultimately provided from its parent or retained earnings, this does not change the standards
19		governing the determination of a fair return on invested capital for the Company. Ultimately,
20		the rate of return, including the capital structure, should be reflective of other risk-
21		comparable alternatives. As the Supreme Court noted in Hope, "the return to the equity

 ⁴¹ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 528.
 ⁴² Williams Natural Gas Co., 80 FERC ¶ 61,158 at 61,682 (1997).

owner should be commensurate with returns on investments in other enterprises having corresponding risks." At the time of the rate case at issue in the Supreme Court's decision, Hope Natural Gas Company ("Hope") was a subsidiary of Standard Oil Company of New Jersey (the predecessor of ExxonMobil).⁴³ The standard of a fair rate of return articulated in the *Hope* case did not relate to the parent, but to the utility. Hope was the entity that undertook the utility obligations and the benchmark for the adequacy of returns was the end result for the utility, not for Standard Oil.

8 Similarly, every ROE witness in the case evaluates a fair ROE for Black Hills using 9 a proxy group of other gas utilities. The reason for using a proxy group is to capture 10 investors' required returns for utilities of comparable risk, which inherently includes the 11 impact of debt leverage. Investors' expectations for the capital structures authorized for 12 comparable gas utilities underpin their required ROE and imposing a ratemaking capital 13 structure with significantly greater leverage would compromise such consistency.

14 Q. DO ONGOING ECONOMIC AND CAPITAL MARKET UNCERTAINTIES ALSO

15 INFLUENCE THE APPROPRIATE CAPITAL STRUCTURE FOR BLACK HILLS?

- 16 A. Yes. Financial flexibility plays a crucial role in ensuring the wherewithal to meet funding
- 17 needs, and utilities with higher financial leverage may be foreclosed or have limited access
- 18 to additional borrowing, especially during times of stress. As Moody's observed:
- 19Utilities are among the largest debt issuers in the corporate universe and20typically require consistent access to capital markets to assure adequate sources21of funding and to maintain financial flexibility. During times of distress and

⁴³ John D. Rockefeller's Standard Oil of New Jersey formed Hope in 1898.

1 2	when capital markets are exceedingly volatile and tight, liquidity becomes critically important because access to capital markets may be difficult. ⁴⁴
3	Moody's emphasized that the utility sector "is likely to continue to generate negative
4	free cash flow and credit quality is likely to suffer unless utilities fund this negative free cash
5	flow appropriately with a balance of debt and equity financing."45
6	S&P confirmed the financial challenges associated with funding heightened
7	investment in the utility sector, noting that, "In February [2024] we revised our industry
8	outlook to negative, reflecting the industry's high percentage of companies with negative
9	outlooks that operate with only minimal financial cushion from their downgrade threshold,"
10	and warning that common equity is at a level "insufficient to fund the industry's cash flow
11	deficits."46
12	As a result, the Company's conital structure must maintain adequate equity to

As a result, the Company's capital structure must maintain adequate equity to preserve the flexibility necessary to maintain continuous access to capital even during times of unfavorable energy or financial market conditions. This further disproves Mr. Gatewood's capital structure recommendation.

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⁴⁴ Moody's Investors Service, *FAQ on credit implications of the coronavirus outbreak*, Sector Comment (Mar. 26, 2020).

⁴⁵ Moody's Investors Service, *Regulate Electric and Gas Utilities – US, Rising capital expenditures will require higher annual equity funding*, Sector In-Depth (Nov. 8, 2023).

⁴⁶ S&P Global Ratings, *Regulated Utilities: Credit risks are rising*, Industry Credit Outlook Update (Jul. 18, 2024).

Q. WHILE DR. WOOLRIDGE DOES NOT INCLUDE SHORT-TERM DEBT IN HIS RECOMMENDED CAPITAL STRUCTURE, HE ARGUES THAT IT SHOULD BE CONSIDERED IN COMPUTING INDUSTRY BENCHMARKS. ⁴⁷ DO YOU AGREE?

5 No. The facilities that Black Hills employs to provide gas utility service are long-lived assets. A. 6 To match the nature of the Company's investment in plant and equipment, the capital 7 structure should consist of permanent capital—long-term debt, preferred stock, and common 8 equity. Short-term debt is generally not viewed as part of the permanent capital used to 9 finance investment in plant and equipment. Indeed, short-term debt is typically used to meet 10 seasonal working capital needs and may also be used to finance capital improvements until 11 a sufficient balance has accumulated to economically issue common stock or long-term debt. 12 IF MR. GATEWOOD'S PROPOSED CAPITAL STRUCTURE WERE ADOPTED, **Q**. 13 HOW ELSE MIGHT THE KCC ENSURE THAT THE END-RESULT TEST IS MET? 14 Putting aside the fact that my Rebuttal testimony clearly indicates that Mr. Gatewood's A. 15 recommended capital structure is outside industry norms and should be rejected, the KCC 16 could achieve the regulatory imperative of ensuring a fair and reasonable end result through other means. The capital structure is only one component of the Company's overall rate of 17 18 return, and the KCC could balance Mr. Gatewood's downward biased common equity ratio

through the use of a higher ROE to achieve an end result that meets the Hope and Bluefield

requirements. This is consistent with financial principles, with investors requiring a higher

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⁴⁷ Woolridge Direct at 27.

1 ROE to compensate for the substantially greater risk associated with Mr. Gatewood's capital 2 structure, relative to the proxy group of gas utilities.

At a minimum, acceptance of Staff's recommended capital structure would require a 3 4 65 basis-point upward adjustment to the ROE in order to maintain the pre-tax rate of return 5 implied using Black Hills' requested capitalization. Increasing the allowed ROE would afford the KCC a means of meeting the Hope and Bluefield tests if Mr. Gatewood's 6 7 downward biased common equity ratio were to be approved.

III. **RESPONSE TO STAFF WITNESS GATEWOOD**

0. 8 WHAT ROE DID MR. GATEWOOD RECOMMEND FOR BLACK HILLS?

9 A. Mr. Gatewood is recommending that the KCC authorize an ROE of 9.70% for Black Hills. 10 Mr. Gatewood based his recommendation on the results of the DCF model—a two-step form 11 and a multistage, "IRR" analysis—and alternative applications of the CAPM, as applied to 12 a proxy group made up of seven natural gas utilities and BHC. Based on the results of his analyses, Mr. Gatewood arrived at an ROE range of 9.30% to 9.90% and selected 9.70% as 13 14 his recommendation.

A. Proxy Group

15 **Q**. MR. GATEWOOD EXCLUDED SOUTHWEST GAS FROM HIS PROXY GROUP

16

DUE TO A SPINOFF OF NON-UTILITY OPERATIONS. IS THIS JUSTIFIED?

17 No. As Mr. Gatewood noted, Southwest Gas completed the spinoff of its infrastructure A. 18 services operations in April 2024. Value Line observed that the motivation for this 19 transaction was to fulfill Southwest Gas' aim of "transitioning into a fully regulated natural 1 gas utility," and characterized this company as a "pure-play utility."⁴⁸ As Mr. Gatewood 2 correctly concluded, "rational, profit-maximizing investors are forward-looking."⁴⁹ The 3 fact that Southwest Gas completed a spinoff over a year ago has no bearing on the 4 expectations of investors, and Mr. Gatewood was not justified in excluding Southwest Gas 5 from his proxy group on this basis.

B. Discounted Cash Flow Model

6 Q. WHAT IS YOUR PRIMARY CRITICISM OF THE DCF ANALYSES CONDUCTED 7 BY MR. GATEWOOD?

A. As Mr. Gatewood correctly observed, "the appropriate growth estimate is the long-term growth rate expected by the market and incorporated into investors' analyses to determine stock prices."⁵⁰ The key problem with the DCF analyses presented in Mr. Gatewood's testimony is that, while Mr. Gatewood recognized that it is *investors* ' perceptions and expectations that must be considered in applying the DCF model, there is no evidence to suggest that investors expect growth for his proxy firms to converge to the rate of change in GDP.

15 Q. WHAT GROWTH RATES DID MR. GATEWOOD USE TO APPLY THE 16 CONSTANT GROWTH DCF MODEL?

17 A. Mr. Gatewood relied on the projected growth rates in EPS and DPS published by Value Line,

18 as well as the consensus securities analysts' EPS growth rates compiled Zacks and FactSet.

19 Mr. Gatewood then averaged these three forecasted growth rates, to develop what he referred

⁴⁸ The Value Line Investment Survey, *Southwest Gas* (Feb. 21, 2025).

⁴⁹ Gatewood Direct at 21.

⁵⁰ *Id*. at 61.

to as a "short-run" company specific growth estimate. Based on his belief that it would be
illogical for investors to expect long-term growth for the companies in the proxy group to
exceed the rate of growth of the economy, Mr. Gatewood then averaged his companyspecific growth rate with a 4.08% value based on projections for growth in GDP.

Q. IS THERE ANY REASON THAT THE GROWTH RATES USED IN A DCF ANALYSIS MUST BE CONSTRAINED BY THE OVERALL GROWTH OF THE ECONOMY, AS MR. GATEWOOD SUGGESTS?

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8 A. No. GDP growth rates are not relevant in applying the DCF model, and there are several

- reasons why this is the case:
- Practical application of the DCF model does not require a long-term growth estimate—it requires a growth estimate that matches investors' expectations.
 - Evidence supports the conclusion that investors do not reference long-term GDP growth in evaluating expectations for individual common stocks, including those in the electric utility industry.
- The misguided proposition that growth rates for all firms converge to expected overall growth in the economy after ten years does not guide investors' views, and growth rates for individual stocks can and do exceed GDP growth.
- Because gas utilities are mature companies, provide a basic service, are regulated utilities, have well-defined service areas, and follow established managerial and financial policies, security analysts' projections of near-term growth also reasonably reflect investor expectations for longer-run growth. Accordingly, they are best suited for use in the DCF model to estimate investors' required rate of return. There is no evidence that investors
- 24 assume all utilities will revert to a long-term GDP growth rate in forming their expectations

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for gas utility common stocks.⁵¹ The growth assumptions underlying Mr. Gatewood's DCF models do not match investor expectations and should be given no weight.

Q. THE DCF MODEL IS BASED ON THE ASSUMPTION OF AN INFINITE STREAM OF CASH FLOWS. WHY WOULDN'T MR. GATEWOOD'S REFERENCE TO GDP GROWTH MAKE SENSE?

6 A. This view confuses the theory underlying the DCF model with the practicalities of its 7 application in the real world. Analytical approaches such as the DCF model are inherently 8 abstractions of reality. The underlying theory requires any number of assumptions, many of 9 which differ considerably from the situation that confronts actual investors in the capital 10 markets. For example, apart from a constant growth rate into perpetuity, the theory 11 underlying the DCF model also requires that dividends, earnings, and stock prices grow at 12 exactly the same rate forever.

13 These strict assumptions are never met in practice. While this notion of long-term growth should presumably relate to the specific firm at issue, or at the very least to a 14 15 particular industry, there are no long-term growth projections available for the companies in 16 Mr. Gatewood's proxy group or for the gas utility industry as a whole. Rather than applying 17 the DCF model in a way that is consistent with the information that is available to investors 18 and how they use it, the use of GDP growth seeks to mold investor behavior around the 19 theoretical assumptions of a financial model. The only relevant growth rate is the growth 20 rate used by investors. Investors do not have clarity to see far into the future, and there is

⁵¹ Staff witness Gatewood was unable to cite a single investment advisory report published in the last five years that discusses an expectation that growth for utilities will converge to GDP. Response to Request No. BHE-3.

little to no evidence to suggest that investors share the view that growth in GDP must be
 considered a limit on earnings growth over the long-term.

3 Q. ARE LONG-TERM GDP GROWTH RATES COMMONLY REFERENCED AS A 4 DIRECT GUIDE TO FUTURE EXPECTATIONS FOR SPECIFIC FIRMS?

A. No. Investors understand the complexities and inherent inaccuracies involved in forecasting,
and that such uncertainties are significantly compounded for a long-term time horizon.
Certainly, investors consider broad secular trends in economic activity as one general
foundation for their expectations. But the idea that investors view GDP growth as a direct
guide to long-term expectations for a particular firm—much less every firm in an entire
industry—is not borne out by evidence.

11 On the contrary, the financial media typically refers to three-to-five year EPS growth 12 forecasts for individual companies and rarely mentions long-term GDP forecasts. For 13 example, Value Line reports are routinely relied on as a reliable source of investment data and analysis.⁵² But despite Mr. Gatewood's suggestion that GDP has a fundamental role in 14 15 shaping investors' growth estimates, Value Line does not even mention trends in GDP in its 16 evaluation of the firms in the gas utility industry. Value Line's purpose is to inform investors of the pertinent factors that could affect future expectations specific to each of the common 17 stocks it covers. If the long-term trajectory of GDP growth was relevant in investors' 18 19 evaluation of common stocks, Value Line or other securities analysts would highlight this in 20 their analyses.

⁵² As noted in *New Regulatory Finance*, "Value Line is the largest and most widely circulated independent investment advisory service, and influences the expectations of a large number of institutional and individual investors." Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 71.
Q. ARE THERE ACADEMIC STUDIES THAT RECOGNIZE THE SHORTCOMINGS OF ADOPTING A GENERIC LONG-TERM GROWTH RATE, SUCH AS GDP GROWTH?

A. Yes. Professor Myron J. Gordon, who pioneered the application of the DCF approach,
concluded that reference to a generic long-term growth rate, such as Mr. Gatewood
advocates, was unsupported. ⁵³ More specifically, Dr. Gordon concluded that any
assumption of a single time horizon for a transition to a generic long-term growth rate was
highly questionable and failed to reduce error in DCF estimates.

9 Instead, Dr. Gordon specifically recognized that, "it is the growth that investors 10 expect that should be used" in applying the DCF model, and he concluded: "A number of 11 considerations suggest that investors may, in fact, use earnings growth as a measure of 12 expected future growth."⁵⁴ Similarly, a subsequent paper co-authored by Professor Gordon

13 concluded that:

14Analysts do not predict earnings beyond five years, which suggests that any15consensus of opinion among investors probably deteriorates quickly after five16years.⁵⁵

Dr. Gordon further concluded that "the consensus among investors is that the future has a finite horizon of approximately seven years."⁵⁶ Meanwhile, a study reported in the *Journal* of *Investing* determined that there is no correlation between stock market returns or earnings

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growth and GDP, suggesting that investors' expectations built into observable share prices

⁵³ Myron J. Gordon, *The Cost of Capital to a Public Utility*, MSU Public Utilities Studies (1974) at 100-01.
 ⁵⁴ *Id.* at 89.

⁵⁶ Id.

⁵⁵ Joseph R. Gordon and Myron T. Gordon, *The Finite Horizon Expected Return Model*, Financial Analysts Journal (May-Jun. 1997) at 52-61.

are driven by valuation measures, and not expected economic growth.⁵⁷ In other words,
 reference to long-term forecasts of GDP growth in applying the DCF model is inconsistent
 with investor behavior.

4 Q. ARE THERE OTHER RECOGNIZED REFERENCE SOURCES THAT DISPUTE 5 THE NOTION THAT INVESTORS ANTICIPATE GROWTH FOR UTILITIES TO 6 EQUAL GDP?

7 Yes. Professor Roger Morin, the author of a recognized treatise on regulatory finance, notes A. 8 that, "I am not aware of any financial literature supporting the notion that that [sic] utility earnings per share are expected to grow at the average growth of the economy; or GDP."58 9 10 This reference source goes on to observe that "[t]he investment community does not look to 11 GDP growth over the next several decades when evaluating an investment in utility stocks."⁵⁹ Instead, Modern Regulatory Finance states that "the use of GDP growth as a 12 13 proxy for expected growth in earnings is highly questionable as an input in a DCF analysis,"⁶⁰ and concludes that "current earnings growth forecasts are the appropriate 14 growth rates to use in a DCF analysis."⁶¹ This is consistent with my testimony. 15

16 Q. IS THERE EVIDENCE THAT A LONG-TERM GDP GROWTH RATE 17 UNDERSTATES INVESTORS' EXPECTATIONS FOR GAS UTILITIES?

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A. Yes. Value Line reports that, of the seven companies in Mr. Gatewood's proxy group with

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10-year EPS growth rates, five achieved earnings growth over the last 10 years that exceeded

⁶¹ *Id.* at 486.

⁵⁷ Joachim Klement, *What's Growth Got to Do with It? Equity Returns and Economic Growth*, Journal of Investing, Vol. 24, No. 2 (Summer 2015): 74:78.

⁵⁸ Roger A. Morin, *Modern Regulatory Finance*, PUR Books (2021) at 486.

⁵⁹ Id.

⁶⁰ *Id.* at 488.

4	Q.	WHAT OTHER EVIDENCE CONTRADICTS THE PATTERN OF GROWTH
3		Gatewood.
2		achieve long-term growth far higher than the theoretical GDP growth rate used by Mr.
1		Mr. Gatewood's 4.08% GDP growth rate. ⁶² These values indicate that firms can and do

- 5 ASSUMED IN MR. GATEWOOD'S DCF APPROACH?
- A. According to the rationale underlying Mr. Gatewood's DCF model, at some point in the
 intermediate future all the companies in the gas utility industry are assumed to grow at a
 constant rate equal to the economy as a whole. This assumption is contradicted by the
 expectations of real-world investors in the capital markets.
- For example, Figure AMM-3 compares Value Line's forecasted EPS growth rates for
 natural gas utilities beginning in 2002 with current projections.



FIGURE AMM-3 GAS UTILITY INDUSTRY EPS GROWTH PROJECTIONS

⁶² <u>www.valueline.com</u> (retrieved May 16, 2025).

1	Under Mr. Gatewood's theory that growth rates for natural gas utilities are trending
2	towards GDP growth, expected growth in EPS should have gradually moved towards his
3	artificial 4.08% growth ceiling over the past two decades. In fact, however, there has been
4	no observable trend towards GDP growth observed over the last twenty-three years. This
5	provides another indication that the 4.08% figure used in Mr. Gatewood's DCF models falls
6	below investors' growth expectations for gas utilities.

7 Q. DO EXPECTATIONS FOR THE UTILITY INDUSTRY SUPPORT A LONG-TERM 8 TREND TOWARDS GDP GROWTH?

9 A. No. At least in part, growth in the utility industry is created by additional infrastructure
investment. Contrary to Mr. Gatewood's assertion that growth trends for gas utilities will
somehow mirror GDP, investors recognize that the industry has entered a long-term cycle of
significant capital spending on utility infrastructure. The following Figure AMM-4
illustrates this trend:



FIGURE AMM-4

1 Consistent with this view, RRA concluded that:

The nation's electric, gas and water utilities are investing in infrastructure at record levels to upgrade aging transmission and distribution systems; build new gas, solar and wind generation; and implement new technologies, including those related to smart meter deployment, smart grid systems, cybersecurity measures, electric vehicles and battery storage. The considerable spending levels are expected to serve as the basis for solid profit expansion in the utility industry for the foreseeable future.⁶³

- 9 RRA noted that, "Natural gas capex will continue to be driven by the need to replace
- 10 mature gas distribution infrastructure over the long term, in line with state and federal safety

11 mandates.⁶⁴

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The Value Line Investment Survey (Feb. 21 and Apr. 18, 2025).

⁶³ S&P Capital IQ, Seismic shift in capex plans reported by utilities for 2023 through 2025, Financial Focus (Mar. 16, 2023).

⁶⁴ S&P Capital IQ, *Energy utility capex projected to eclipse \$790B from 2025 through 2028*, Financial Focus (Dec. 30, 2024).

Q. DID MR. GATEWOOD PROVIDE ANY SUPPORT OR EXPLANATION FOR HIS DECISION TO WEIGHT GDP GROWTH EQUALLY WITH COMPANY-SPECIFIC GROWTH FORECASTS?

A. No. Mr. Gatewood gave no explanation at all for this key assumption. Considering the
preeminence of analysts' earnings forecasts, and the lack of any evidence linking GDP
growth to investors' expectations for specific firms, there is no reason to suppose that his
50% weighting is justified or appropriate.

8 Q. MR. GATEWOOD CITES FERC PRECEDENT IN SUPPORT OF HIS REFERENCE
 9 TO GDP GROWTH.⁶⁵ IS HIS TWO-STEP DCF APPLICATION CONSISTENT
 10 WITH CURRENT FERC GUIDANCE FOR UTILITIES?

No. Mr. Gatewood's 50/50 weighting of EPS growth rates and GDP is at odds with FERC 11 A. 12 practice. In the case of gas pipeline companies, FERC has previously concluded that "long-13 term projections are inherently more difficult to make, and thus less reliable," and determined that it would give two-thirds weight to company-specific growth projections and 14 one-third weight to GDP.⁶⁶ More recently, FERC modified its two-step DCF application for 15 electric utilities to afford 80% weight to projected EPS growth rates and 20% weight to 16 GDP.⁶⁷ noting that the pattern of EPS growth expectations did not resemble the growth rates 17 that originally motivated the adoption of the two-step DCF model.⁶⁸ 18

⁶⁵ Gatewood Direct at 63.

⁶⁶ *Transcontinental Gas Pipe Line Corp.*, 84 FERC ¶ 61,084 at 61,423 (1998).

⁶⁷ Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., Opinion No. 569-A, 171 FERC ¶ 61,154 at P 57 (2020) ("Opinion No. 569-A")

⁶⁸ Id.

1		The same is true in this case. For example, in Transcontinental Gas, EPS growth
2		rates for the proxy group ranged from 8.0% to 15.0% and averaged 11.3%. ⁶⁹ Meanwhile,
3		none of the "short-run" growth rates for Mr. Gatewood's proxy companies exceeded 8.0%.
4		Thus, in line with FERC's recent determination for electric utilities, growth rates for
5		individual gas utilities are not comparable to those that prompted FERC's adoption of a
6		one/third weighting of GDP in applying the DCF model for gas pipelines. Considering the
7		preeminence of analysts' EPS growth forecasts and the lack of any specific evidence
8		documenting reference to GDP growth by gas utility investors, the 50% weighting Mr.
9		Gatewood assigns to GDP growth is arbitrary and unsupported.
10	Q.	DOES THE IRR FORM OF THE DCF MODEL USED BY MR. GATEWOOD
11		PROVIDE A BETTER GUIDE TO INVESTORS' REQUIREMENTS?
11 12	A.	PROVIDE A BETTER GUIDE TO INVESTORS' REQUIREMENTS? No. While multistage analyses, such as that used by Mr. Gatewood, can be used to estimate
11 12 13	A.	PROVIDE A BETTER GUIDE TO INVESTORS' REQUIREMENTS?No. While multistage analyses, such as that used by Mr. Gatewood, can be used to estimate the cost of equity, these approaches increase the number of assumptions that are required
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 11 12 13 14 15 16 	Α.	PROVIDE A BETTER GUIDE TO INVESTORS' REQUIREMENTS? No. While multistage analyses, such as that used by Mr. Gatewood, can be used to estimate the cost of equity, these approaches increase the number of assumptions that are required and add to the computational difficulties. This makes the results of non-constant growth DCF applications sensitive to changes in inputs, and therefore subject to greater controversy in a rate case setting. Just as importantly, to the extent that each of these time-specific
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⁶⁹ Transcon. Gas Pipe Line Corp., Opinion No. 414-A, 84 FERC ¶ 61,084 at Appendix A ("Transcontinental Gas"), order on reh'g, Opinion No. 414-B, 85 FERC ¶ 61,323 (1998); see also Williston Basin Interstate Pipeline Co., 91 FERC ¶ 63,005 at Attachment A (2000) (reporting EPS growth rates for the six-company proxy group ranging from 8.0% to 15.0%).

investors' thinking, we cannot uncover their required returns and thus the market cost of equity. In practice, applying a non-constant model, such as the multistage DCF approach used by Mr. Gatewood, would lead to error if it ignores the views of real-world investors.

4 As Mr. Gatewood testified, "Earnings per share (EPS) growth forecasts are widely accepted as a reasonable proxy for dividend growth in DCF models."⁷⁰ While the 5 6 complexity of a multistage, IRR model may impart an aura of accuracy, the fact remains that the investment community does not look to GDP growth over the next 250 years when 7 8 evaluating an investment in one of Mr. Gatewood's comparable utilities, and investors' 9 current view of gas utilities does not anticipate a series of discrete, clearly defined stages. 10 The assumptions underlying Mr. Gatewood's "IRR" analysis are unsupported, and the results 11 of this approach should be given no weight.

12 Q. IS THERE A COMPUTATIONAL ERROR THAT ALSO BIASES MR. 13 GATEWOOD'S IRR COST OF EQUITY ESTIMATES DOWNWARD?

14 Yes. Under his IRR approach, Mr. Gatewood predicted the cash flows that would accrue to A. 15 investors over the next 250 years. To arrive at his cost of equity estimates, Mr. Gatewood 16 used the internal rate of return function available in Microsoft's Excel spreadsheet program 17 to determine the discount rate (i.e., investors' required rate of return) that would equate these 18 cash flows with the current market price of the stock. This IRR calculation, however, 19 assumes that annual cash flows are received at the end of each year, which is inconsistent 20 with the periodic dividend payments that investors receive and results in a downward bias 21 in the implied cost of equity.

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⁷⁰ Id. at 61.

Q. MR. GATEWOOD CITES A NUMBER OF SOURCES SUGGESTING THAT GROWTH RATES FOR INDIVIDUAL COMPANIES CANNOT BE EXPECTED TO GROW FASTER THAN THE ECONOMY FOR LONG PERIODS.⁷¹ DOES THIS THEORETICAL PROPOSITION OVERCOME YOUR CRITICISM OF HIS RELIANCE ON GDP GROWTH?

6 No. Mr. Gatewood highlights the obvious fact that no company can grow forever at a rate A. 7 greater than the economy. True enough, companies cannot grow forever, just as trees do not grow to the stratosphere. But this broad axiom does not justify the assumptions of his DCF 8 9 applications. Just as companies do not grow forever, investors do not hold stocks forever and 10 cannot see into the distant future. In fact, investors realize that projections become 11 increasingly tenuous as the forecast horizon expands. To estimate the growth rate investors 12 had in mind when they purchased a common stock, we must look to information that 13 investors use to make their decisions.

To the extent that professional security analysts feel that trends in GDP affect a company's growth expectations in the time frame relevant to investors, it is already incorporated into their published EPS growth forecasts. In addition, companies differ in the degree to which growth is impacted by the national economy. Utilities vary in their exposure as some service territories are more sensitive to national economic conditions than others. These inherent differences are obviously reflected in security analysts' growth projections for individual companies, which are indicative of the expectations that underlie stock prices.

⁷¹ Gatewood Direct at 63-68.

1		Moreover, the time necessary for any company to grow to the magnitude of the entire
2		economy is so long that no investors are likely to include this horizon in their decision to
3		buy stock today. The present value of any cash flows so far in the future would also be so
4		miniscule that it would not move the needle in stock valuation. For example, consider Mr.
5		Gatewood's 5.59% average EPS growth rate for the firms in his proxy group, ⁷² which have
6		a total market capitalization of approximately \$61.7 billion. In 2024, GDP was \$29,184.9
7		billion. ⁷³ Assuming Mr. Gatewood's GDP growth rate of 4.08%, the firms in his proxy
8		group would not collectively overtake the value of the economy until the year 2456-more
9		than 400 years after the Value Line growth forecasts were published. The fact that such a
10		time horizon is so far beyond the plausible consideration of investors highlights the gap
11		between Mr. Gatewood's theoretical arguments and practical application of the DCF model.
12	Q.	MR. GATEWOOD SUGGESTS THAT UNDER YOUR DCF APPLICATION, EPS
13		GROWTH RATES "CONTINUE IN PERPETUITY." 74 WHAT IS YOUR
14		RESPONSE?
15	A.	Mr. Gatewood's assertion again confirms the discord between his focus on theoretical
16		concepts and the actual application of the DCF model. As discussed above, there is no
17		evidence that investors base their expectations on projections beyond the foreseeable horizon
18		captured by analysts' estimates. The growth rates referenced in my DCF analysis were used
19		because they provide the best representation of investors' expectations, not because they fit
20		the "infinite-growth" assumption underlying a theoretical model.

⁷² AHG ROR Analysis KGS Black Hills 2025.xlsx at tab "Growth Rates."
⁷³ https://www.bea.gov/sites/default/files/2025-03/gdp4q24-3rd.xlsx (last visited May 16, 2025).
⁷⁴ *Id.* at 88-89.

C. Capital Asset Pricing Model

Q. WHAT IS THE PRIMARY SHORTCOMING OF MR. GATEWOOD'S CAPM ANALYSIS?

A. The three sources for the forward-looking market risk premium selected by Mr. Gatewood
do not make economic sense and contradict his own testimony. The market risk premiums
relied on in Mr. Gatewood's forward-looking CAPM analysis were 3.07% ("JPMAM"),
3.58% ("BlackRock"), and 5.00% ("Kroll").⁷⁵ But combining an average market risk
premium based on these sources of 3.88% with the 3.57% average of Mr. Gatewood's riskfree rates results in an indicated cost of equity for the market as a whole of 7.45%,⁷⁶ which
is well below his 9.7% ROE recommendation for Black Hills in this case.

10 The theory underlying the CAPM holds that beta is the only relevant measure of 11 investment risk and the market is assumed to have a beta of 1.0. Given that the average beta 12 for the firms in Mr. Gatewood's proxy group is 0.93, this indicates that investors' required 13 return on the market as a whole should exceed the cost of equity for natural gas utilities. A 14 market rate of return that falls below Staff's downward biased ROE recommendation for a 15 gas utility does not make economic sense and does not reflect the current expectations of 16 real-world investors.

Similarly, the average forecasted return on common stocks from Mr. Gatewood's JPMAM source was 6.87%, while the market return he cites from BlackRock was 7.00%. With Baa-rated corporate bonds currently yielding approximately 6.20%, Mr. Gatewood is

⁷⁵ *Id.* at 78-80.

⁷⁶ *Id.* Mr. Gatewood relied on risk-free rates of 3.80%, 2.25%, and 4.65% in his JPMAM, BlackRock, and Kroll applications, respectively.

1		assuming that investors would be willing to forego the relative certainty of an investment
2		grade bond and invest in common stocks with the expectation of earning a risk premium of
3		67 to 80 basis points. Given the much higher risks and volatility associated with the equity
4		market, this does not make economic sense.
5		Mr. Gatewood's CAPM inputs violate the risk-return tradeoff that is fundamental to
6		financial theory and his forecasted CAPM results should be rejected.
7	Q.	WHAT ARE THE SHORTCOMINGS WITH THE KROLL SOURCE CITED BY
8		MR. GATEWOOD?
9	A.	Mr. Gatwood relies on a Kroll report published last year, which does not reflect current
10		economic conditions or investor expectations. ⁷⁷ Kroll raised its recommended risk premium
11		by 50 basis points in April 2025. ⁷⁸ Aside from the fact that Mr. Gatewood's source is stale,
12		Kroll does not provide any specific guidance as to the basis of the market risk premiums it
13		reports. Prior editions have cited "financial literature and various empirical studies," ⁷⁹ as
14		well as listing "Historical Real GDP Growth" and "Damodaran Implied ERP Model" as two
15		of the factors it considered in its risk premium recommendation. ⁸⁰ This Kroll source is

upward pressure on interest rates, and potential trade conflicts. ⁷⁸ Kroll, *Kroll Cost of Capital Inputs Updated to Reflect Heightened Uncertainty in Global Economy* (Apr. 15, 2025). <u>https://media-cdn.kroll.com/jssmedia/cost-of-capital/kroll-cost-of-capital-inputs-updated-to-reflect-heightened-uncertainty-in-global-economy.pdf</u> (last visited May 19, 2025).

⁷⁷ Kroll, (*Kroll Lowers its Recommended U.S. Equity Risk Premium to 5.0%, Effective June 5, 2024* (Jun. 6, 2024), <u>https://media-cdn.kroll.com/jssmedia/kroll-images/pdfs/kroll-lowers-its-recommended-us-equity-risk-premium-</u> <u>effective-june-5-2024.pdf</u> (last visited May 19, 2025). In 2024, Kroll noted that economic and geopolitical events "may change our views," including the outcome of the U.S. Presidential election, the potential for increasing budget deficits,

⁷⁹ Duff & Phelps, *Duff & Phelps Decreases U.S. Equity Risk Premium Recommendation to 5.0%, Effective February 28, 2013*, Client Alert (Mar. 20, 2013).

⁸⁰ Duff & Phelps, *Duff & Phelps U.S. Equity Risk Premium Recommendation Decreased from 5.5% to 5.0%, Effective September 5, 2017*, Client Alert (Oct. 30, 2017).

essentially a "black box," which offers no transparent indication as to how the market risk
 premium is calculated.

3 Q. DO THE RESULTS OF MR. GATEWOOD'S HISTORIC CAPM ANALYSIS 4 SUPPORT A CONCLUSION THAT HIS FORWARD-LOOKING CAPM IS 5 UNRELIABLE?

A. Yes. Mr. Gatewood noted that the results of his historic CAPM application did not
corroborate the findings of his forecasted analysis, observing that "the CAPM results using
historical data from 1928 through 2024 are greater than those found with the three scenarios
using forecasted return."⁸¹ While I agree with Mr. Gatewood that there are limitations
associated with referencing historical data when estimating the cost of equity, the substantial
divergence between Mr. Gatewood's alternative results confirms my conclusion that his
forecasted CAPM is fundamentally flawed and unreliable.

13 Q. MR. GATEWOOD ARGUES THAT USING ARITHMETIC MEAN RETURNS

14 IGNORES "VOLATILITY OF ANNUAL RETURNS," AND INSTEAD ADOPTS A

15 GEOMETRIC AVERAGE RETURN TO APPLY THE HISTORICAL CAPM.⁸² DO 16 YOU AGREE?

A. No. While both the arithmetic and geometric means are legitimate measures of average return, they provide different information. Each may be used correctly, or misused, depending upon the inferences being drawn from the numbers. The geometric mean of a series of returns measures the constant rate of return that would yield the same change in the

⁸¹ Gatewood Direct at 83.

⁸² Id.

1	value of an investment over time. In estimating the cost of equity, the goal is to replicate
2	what investors expect going forward, not to measure the average performance of an
3	investment over an assumed holding period. When referencing realized rates of return in the
4	past, investors consider the equity risk premiums in each year independently, with the
5	arithmetic average of these annual results providing the best estimate of what investors might
6	expect in future periods. New Regulatory Finance had this to say:
7 8 9 10 11 12	The best estimate of expected returns over a given future holding period is the arithmetic average. <u>Only arithmetic means are correct for forecasting purposes</u> and for estimating the cost of capital. There is no theoretical or empirical justification for the use of geometric mean rates of returns as a measure of the appropriate discount rate in computing the cost of capital or in computing present values. ⁸³ [emphasis added]
13	Similarly, Morningstar concluded that:
14 15 16 17 18	For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number The geometric average is more appropriate for reporting past performance, since it represents the compound average return. ⁸⁴
19	Moreover, Mr. Gatewood's assertion that arithmetic mean does not consider the
20	volatility of annual returns is not correct. The arithmetic mean is determined by averaging
21	each annual return over the historical period, which expressly accounts for yearly volatility.
22	By contrast, the geometric average considers only two values in the series-the beginning
23	value and the ending value—and ignores year to year variability in realized returns.

 ⁸³ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 116-117, (emphasis added).
 ⁸⁴ Morningstar, *Ibbotson SBBI 2013 Valuation Yearbook* at 56.

Q. MR. GATEWOOD DISPUTES YOUR RELIANCE ON THE CONSTANT GROWTH DCF MODEL TO COMPUTE THE CAPM MARKET RISK PREMIUM.⁸⁵ HAS THIS APPROACH BEEN RELIED ON BY REGULATORS AND IN THE FINANCIAL LITERATURE?

5 A. Yes. Regulators and recognized research studies reported in the financial literature support 6 and adopt the exact same methodology to estimate the market rate of return underlying my 7 CAPM result. I based my CAPM approach on the methods used by the Staff at the Illinois 8 Commerce Commission, whose witnesses have routinely relied on forward-looking market 9 rate of return estimates to apply the CAPM. For example, one staff witness described an 10 approach analogous to that used in my Direct testimony.

- Q. How was the expected rate of return on the market portfolio estimated?
- 12 A. The expected rate of return on the market was estimated by conducting a DCF analysis on the firms composing the S&P 500 Index ('S&P 500'). ... 13 Firms not paying a dividend as of July 1, 2010, or for which neither Zacks 14 nor Reuters growth rates were available were eliminated from the analysis. 15 16 The resulting company-specific estimates of the expected rate of return on common equity were then weighted using market value data from Zacks 17 on July 2, 2010. The estimated weighted averaged expected rate of return 18 for the remaining 367 firms composing 80.21% of the market capitalization 19 of the S&P 500, equals 12.74 percent.⁸⁶ 20

11

⁸⁵ *Id.* at 86-89.

⁸⁶ *Direct Testimony of Michael McNally*, Illinois Commerce Commission, Docket No. 10-0467, filed October 26, 2010, at 27-29. The Illinois Commerce Commission relied on this CAPM approach in arriving at the authorized ROE in this proceeding. Illinois Commerce Commission, Docket No. 10-0467, Order (May 24, 2011) at 153.

1	FERC has also adopted a forward-looking CAPM approach directly comparable to the
2	methodology applied in my Direct testimony, ⁸⁷ while consistently rejecting reference to
3	GDP when estimating the CAPM market rate of return. ⁸⁸
4	Studies reported in the financial literature have also relied on a similar DCF approach
5	to estimate a forward-looking rate of return for the S&P 500. For instance, Harris and
6	Marston notes that "a 'market' required rate of return is calculated using each dividend
7	paying stock in the S&P 500 index for which data are available."89 In describing this
8	process, the authors state:
9 10 11 12	This expectational approach employs the dividend growth model (hereafter referred to as the discounted cash flow or DCF model) in which a consensus measure of financial analysts' forecasts (FAF) of earnings is used as a proxy for investor expectations. ⁹⁰
13	* * *
14 15 16 17	For each month, a "market" required rate of return is calculated using each dividend paying stock in the S&P 500 index for which data are available. The DCF model in Equation (2) is applied to each stock and the results weighted by market value of equity to produce the market required return. ⁹¹
18	Consistent with my constant growth CAPM approach, Harris and Marston noted that "[t]he
19	mean value of individual analysts' forecasts of five-year growth rate in EPS will be used as
20	a proxy for g in the DCF model." ⁹² Moreover, Harris and Marston contradicts Mr.

⁸⁷ Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., Opinion No. 569-A, 171 FERC ¶ 61,154 (2020) (Opinion No. 569-A) at P 260, vacated & remanded sub nom. MISO Transmission Owners v. FERC, No. 16-1325 (D.C. Cir. 2022); Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., 190 FERC ¶ 61,184 at P 44-45 (2025).

⁸⁸ See, e.g., Ass 'n. of Bus. Advocating Tariff Equity, et al., Opinion No. 551, 156 FERC ¶ 61,234 at P 170 (2016); Ass 'n. of Bus. Advocating Tariff Equity, et al., Opinion No. 569-A, 171 FERC ¶ 61,154 at P 85 (2020). ⁸⁹ Robert S. Harris and Felicia C. Marston, *Estimating Shareholder Risk Premia Using Analysts' Growth Forecasts*,

Fin. Mgmt. (Summer 1992) ("Harris and Marston").

⁹⁰ Id.

⁹¹ Id.

⁹² Id.

1	Gatewood's GDP arguments, noting that "[t]he five-year horizon is the longest horizon over
2	which such forecasts are available and often <i>is the longest horizon used by analysts</i> ." ⁹³

4

3 This widely-recognized research paper confirms the market return calculation underlying my CAPM approach, establishing that (1) application of the constant growth (not 5 multistage) DCF model to individual dividend paying members of the S&P 500 Index is a 6 dependable approach, (2) five-year analysts' earnings forecasts (not GDP) is a valid basis to 7 determine the long-term growth component of the DCF model, and (3) use of analysts' EPS 8 growth rates conforms to the methodology used in the investment community.

9 Q. ARE THESE **CONCLUSIONS CONFIRMED** BY **OTHER PUBLISHED** 10 **RESEARCH?**

Yes. A 1993 study published in the *Financial Review* noted that, "[f]ollowing prior research," 11 A.

12 the authors evaluated the expected market rate of return by applying the same constant 13 growth DCF approach used in my application of the CAPM, including reliance on "financial analysts' forecasts (FAF) of five-year growth in earnings per share."94 14

15 Similarly, Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates 16 of *Return* reiterated support for the same approach, including reliance on analysts' growth estimates as the best proxy for investors' expectations. The article specifically rejected 17 making "alternate assumptions about growth after five years," pointing out that "there is no 18 source for obtaining market estimates of this expected growth."⁹⁵ This article warned 19

⁹³ *Id.* (emphasis added).

⁹⁴ Felicia Marston and Robert S. Harris, *Risk and Return: A Revisit Using Expected Returns*, Fin. Review (Feb. 1993) ("Marston & Harris").

⁹⁵ Robert S. Harris, Using Analysts' Growth Forecasts to Estimate Shareholder Required Rates of Return, Fin. Mgmt. (Spring 1986) ("Harris").

1 2 against the practice advocated by Mr. Gatewood, finding that reliance on analysts' EPS growth rates "avoids the introduction of *ad hoc* assumptions about future growth."⁹⁶

Q. ARE MR. GATEWOOD'S ARGUMENTS REGARDING THE SUSTAINABILITY 4 OF INDIVIDUAL GROWTH RATES RELEVANT?

A. No. Arguments concerning the sustainability of any individual growth rate for a single firm
in the S&P 500 miss the point. We are not calculating the cost of equity for an individual
firm and assuming that growth rate will be constant for perpetuity. Rather, the growth rate
underlying the market cost of equity represents a weighted average of investors' expectations
for the dividend paying firms in the S&P 500 *index*.

10 Within this large group of firms, growth expectations for some firms may be extremely anemic (or even negative), while projections for other firms are considerably more 11 12 optimistic. In addition, growth rates for one company may moderate over time, while for 13 others they may increase. Finally, the composition of the S&P 500 is not static. As a result, formerly successful firms are supplanted by new firms with potential for high growth (e.g.,14 15 Sears is supplanted by Amazon, or Blockbuster is supplanted by Netflix). This same 16 understanding was expressed in the *Harris* article cited earlier, which noted that: 17 Importantly, however, the approach is applied to portfolios of stocks rather than to individual securities, since future growth patterns may be expected to 18 have drastic changes for some specific securities.⁹⁷ 19 20 Similarly, the United States Court of Appeals for the District of Columbia has also 21 rejected Mr. Gatewood's "sustainability" argument, noting that "the S&P 500 includes

⁹⁶ *Id.* (emphasis supplied).

⁹⁷ *Id.* at 5.

companies at all stages of growth, so older companies with lower growth potential will balance out younger companies with higher growth potential."⁹⁸ In other words, the growth rates used to determine the market risk premium in my CAPM analysis are representative of the consensus expectations for the dividend paying firms in the S&P 500 <u>as a whole</u>. This contradicts his position that investors' growth expectations for any single firm should be constrained by a GDP threshold.

7 Q. DOES MR. GATEWOOD INCORPORATE A SIZE ADJUSTMENT IN HIS CAPM 8 ANALYSIS?

9 A. No. As I state in my Direct testimony, financial research indicates that the CAPM does not
10 fully account for observed differences in rates of return attributable to firm size. To account
11 for this, researchers have developed size premiums that need to be added to the theoretical
12 CAPM cost of equity estimates to account for the level of a firm's market capitalization in
13 determining the CAPM cost of equity. Mr. Gatewood's CAPM analysis is further flawed
14 because he omitted this crucial adjustment.

15 Q. MR. GATEWOOD ASSERTS THERE IS "CONSIDERABLE DOUBT"
16 REGARDING THE NEED FOR THE SIZE ADJUSTMENT, AND THAT "THERE IS
17 LITTLE RESEARCH TO SUPPORT IT." ⁹⁹ IS THIS AN ACCURATE
18 ASSESSMENT?

A. No. There is an expansive body of financial research documenting the relationship between
 firm size and returns—including work by Nobel Laureate Eugene Fama. Meanwhile, Mr.

⁹⁸ *MISO TOs v. FERC*, 45 F.4th at 260.

⁹⁹ Gatewood Direct at 92-93.

1	Gatewood offers a single research article concerning the potential impact of delisting on
2	measured returns for small stocks. Even if this single article contradicted the majority of
3	research, its conclusions do not apply to the data in my testimony.
4	This is because the primary focus of this research study is the smallest firms traded
5	on the NASDAQ. As the article notes:
6 7 8	Delistings are most frequent for the smallest Nasdaq stocks – on average, 2.95 percent of stocks <i>in the smallest five percent of Nasdaq stocks</i> are delisted each month. ¹⁰⁰
9	The average market capitalization for the firms in this portfolio of NASDAQ companies was
10	\$1.1 million. Meanwhile, the average market capitalization for the firms in Mr. Gatewood's
11	proxy group is over \$7.7 billion. In fact, even the largest segment of the market included in
12	the study referenced by Mr. Gatewood (average market capitalization of \$1.1 billion) fell
13	short of the smallest of the gas utilities in his proxy group. In other words, the findings of
14	this study do not apply to size premiums for larger firms, which are largely immune to any
15	distortions potentially caused by delisting. ¹⁰¹

 ¹⁰⁰ Tyler Shumway and Vincent A. Warther, *The Delisting Bias in CRSP's Nasdaq Data and Its Implications for the Size Effect*, The Journal of Finance, Vol. LIV, No. 6 (Dec. 1999) at 2361-2362 (emphasis added).
 ¹⁰¹ The article cited by Mr. Gatewood reported that while delisting frequency amounted to 2.95% per month for the

¹⁰¹ The article cited by Mr. Gatewood reported that while delisting frequency amounted to 2.95% per month for the smallest size portfolio, it averaged 0.05% for the largest firms. Tyler Shumway and Vincent A. Warther, *The Delisting Bias in CRSP's Nasdaq Data and Its Implications for the Size Effect*, The Journal of Finance, Vol. LIV, No. 6 (Dec. 1999) at Table IV.

Q. MR. GATEWOOD ALSO CITES TO AN NYU BUSINESS PROFESSOR, WHO CLAIMS THE SIZE ADJUSTMENT IS "FRAGILE" AND "SEEMS TO HAVE DISSIPATED AFTER 1981." ¹⁰² WHAT EVIDENCE CONTRADICTS THIS POSITION?

- A. A 2018 article published in *Business Valuation Review* refuted similar criticisms, concluding that "the size premium critique . . . is not warranted."¹⁰³ In contrast to Mr. Gatewood's assertions, the *Grabowski* article noted that "none of the academic papers throughout the last three decades have qualified the [size premium] as a statistical error," and a publication available from the National Association of Certified Valuators and Analysts documented the continued relevance of the size adjustment in applying the CAPM:
- 11 [A] beta-adjusted size premium is also an indication of the relative market 12 performance of small-cap versus large-cap stocks but is typically used for a very specific purpose: as a "size" adjustment within the context of the capital 13 asset pricing model (CAPM) when developing cost of equity capital estimates. 14 15 A size adjustment is typically applied to the CAPM to make up for the fact that the betas of smaller companies do not fully explain their observed returns. 16 Because the CAPM already includes a beta input in its textbook specification, 17 18 the size premium is then "beta adjusted" to remove the portion of realized excess return that is attributable to beta, thereby isolating the size effect's 19 contribution to realized excess return and avoiding double counting the impact 20 21 of each factor.
- 22 * * *
- Another way of saying this is that within the context of the CAPM, the betas of small-cap companies do not fully account for (or explain) their actual returns. Because the amount of this difference (what actually happened versus

¹⁰² Gatewood Direct at 93.

¹⁰³ Roger A. Grabowski, *The Size Effect Continues To Be Relevant When Estimating the Cost of Capital*, Business Valuation Review (Fall 2018) at 93-109.

1 2		what CAPM predicted) varies with "size" (in this case, as measured by market capitalization) we call it a "size premium". ¹⁰⁴
3		This article went on to conclude that "valuation professionals typically add a 'size premium'
4		to the base CAPM equation " ¹⁰⁵
5		Similarly, Morningstar noted that, "The capital asset pricing model, or CAPM, does
6		not fully account for the higher returns of small-cap stocks," concluding that, "This size-
7		related phenomenon has prompted a revision to the CAPM, which includes a size
8		premium." ¹⁰⁶ Kroll, one of the sources relied on by Mr. Gatewood, continues to publish the
9		annual study of realized returns consistently demonstrating that returns for smaller firms are
10		higher than those estimated by the CAPM. Mr. Gatewood's suggestion that the size effect
11		has disappeared is without merit.
12	Q.	DID MR. GATEWOOD ADDRESS THE IMPLICATIONS OF THE ECAPM
13		ANALYSES PRESENTED IN YOUR TESTIMONY?
14	A.	No. Empirical tests of the CAPM have shown that low-beta securities earn returns somewhat
15		higher than the CAPM would predict, and high-beta securities earn less than predicted. In
16		other words, the CAPM tends to overstate the actual sensitivity of the cost of capital to
17		beta, with low-beta stocks tending to have higher returns and high-beta stocks tending to
18		have lower risk returns than predicted by the CAPM. This empirical finding is widely
19		reported in the finance literature. ¹⁰⁷ Mr. Gatewood did not address this issue.

¹⁰⁴ Using a Non-Beta-Adjusted Size Premium in the Context of the CAPM Will Likely Overstate Risk and Understate Value (Jan. 30, 2019), available at <u>http://quickreadbuzz.com/2019/01/30/business-valuation-grabowski-harringtonsing-</u> a-non-beta-adjusted-size-premium/

¹⁰⁵ Id.

 ¹⁰⁶ Morningstar, 2015 Ibbotson SBBI Classic Yearbook, Morningstar, at 108.
 ¹⁰⁷ See, e.g., Roger A. Morin, New Regulatory Finance, Pub. Utils. Reports, Inc. (2006) at 175-176.

D. Other ROE Issues

1	Q.	WHAT IS THE BASIS FOR MR. GATEWOOD'S CONTENTION THAT THE RISK
2		PREMIUM APPROACH IS NOT A USEFUL METHOD TO EVALUATE A FAIR
3		ROE FOR BLACK HILLS?
4	A.	Mr. Gatewood rejects my application of the risk premium method based on allowed ROEs
5		for gas utilities because of his contention that it 1) is not market-based, 2) does not control
6		for risk, 3) is not comprehensive because ROEs are not always reported, and 4) does not
7		apply because interest rates were falling over the study period. ¹⁰⁸
8	Q.	DO YOU AGREE WITH MR. GATEWOOD THAT THE RISK PREMIUM
9		APPROACH IGNORES MARKET-BASED DATA?
10	A.	No. The authorized ROEs underlying my application of the risk premium approach reflect
11		regulators' deliberate and well-informed consideration of the evidentiary record in each
12		proceeding. Just as in this case, this evidence would generally reflect the results of alternative
13		market-based financial models (e.g., DCF and CAPM) presented by expert witnesses for the
14		various stakeholders. While I agree with Mr. Gatewood that regulatory commissions do not
15		themselves assume the risks associated with an investment in the common stocks of the
16		utilities under their jurisdiction, 109 market-based evidence is integral to regulators'
17		determination of a fair ROE. As New Regulatory Finance observed, "Allowed risk premiums
18		are presumably based on the results of market-based methodologies presented to regulators

¹⁰⁸ Gatewood Direct at 94-98.
¹⁰⁹ *Id.* at 96.

in rate hearings and on the actions of objective unbiased investors in a competitive
 marketplace."¹¹⁰

Moreover, investors take into account returns granted by various regulators in formulating their risk and return expectations, as evidenced by the availability of commercial publications disseminating such data, including RRA and Value Line. Contrary to Mr. Gatewood's assessment, investors are unlikely to conclude that the ROEs allowed by regulatory commission are invalid.

8 Q. IS THERE ANY MERIT TO MR. GATEWOOD'S RELATIVE RISK ARGUMENT?

9 No. Mr. Gatewood expressed no concerns regarding the lack of specific risk measures in A. 10 testimony filed with the KCC in 2012, which included an application of the risk premium approach based on industry average allowed ROEs from 1980 through 2012.¹¹¹ My analysis 11 12 of equity risk premiums was based on industry-wide allowed ROEs reported by RRA for gas 13 utilities. These allowed ROEs are entirely representative of regulators' best judgment as to investors' required returns for natural gas utilities. Further, my Direct testimony indicates 14 15 that investors are likely to perceive greater risks with Black Hills than the average utility in the natural gas utility industry,¹¹² and my risk premium approach is tailored to Black Hills' 16 specific risks through the use of Baa utility bond yields. As a result, there is no basis for Mr. 17 18 Gatewood's claim that this data may violate the standards underlying *Hope* and *Bluefield*.

¹¹⁰ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 125.

¹¹¹ Docket No. 12-ATMG-564-RTS, Direct Testimony Prepared by Adam H. Gatewood, pp. 42-43 & Schedule AHG-

^{12 (}June 8, 2012).

¹¹² McKenzie Direct at 18.

1Q.MR. GATEWOOD SUGGESTS THAT THE RISK PROFILE OF THE UTILITY2INDUSTRY MAY HAVE DECREASED DUE TO INCREASED USE OF3REGULATORY MECHANISMS.¹¹³ IS HIS CONTENTION CONSISTENT WITH4THE FACTS?

5 No. Despite the prevalence of regulatory mechanisms, risks in the utility industry are A. 6 generally viewed as higher today than in the past. This is consistent with the rating agencies' 7 assessment of credit standing in the utility industry. For example, S&P reported that 60% of the firms in the utility industry were rated "A" or above at June 20, 2000,¹¹⁴ whereas the 8 9 majority of ratings now fall in the triple-B category or below.¹¹⁵ S&P revised its outlook for the utility sector to "negative" in February 2024, noting that, "Credit quality for North 10 11 American investor-owned regulated utilities has weakened over the past four years, with downgrades outpacing upgrades by more than three times."¹¹⁶ Mr. Gatewood's assertion is 12 13 incorrect.

14 Q. DOES THE FACT THAT YOUR DATA SET DOES NOT INCLUDE THE RESULTS

15 OF "BLACK BOX" SETTLEMENT RAISE CONCERNS?

16 A. No. The fact that some rate proceedings may end in a stipulated settlement that does not 17 specify an ROE does not undermine the importance of actual allowed ROEs or the influence 18 they have over investors' expectations. Allowed ROEs are widely followed by the 19 investment community and provide a key signal regarding opportunities for comparable-risk

¹¹³ Gatewood Direct at 97.

¹¹⁴ Standard & Poor's Corporation, *Downgrades Dominate U.S. Utility Ratings in First Half*, Credit Week (Jul. 25, 2001).

¹¹⁵ S&P Global Ratings, North American Regulated Utilities, Industry Credit Outlook 2025 (Jan. 14, 2025).

¹¹⁶ S&P Global Ratings, *Rising Risks: Outlook For North American Investor-Owned Regulated Utilities Weakens*, Comments (Feb. 14, 2024).

enterprises, which is directly relevant to the economic standards underlying a fair ROE. And
 while "black box" settlements may not specify an ROE, there is no reason to expect that the
 implied returns in settled cases would depart dramatically or consistently from proceeding
 in which the ROE is expressly determined.

Q. STAFF OBSERVES THAT INTEREST RATES GENERALLY DECLINED OVER THE PERIOD COVERED BY YOUR RISK PREMIUM STUDY.¹¹⁷ DOES MR. GATEWOOD PROVIDE ANY EXPLANATION AS TO HOW THIS MIGHT COMPROMISE YOUR RESULTS?

9 A. No. In any event, my risk premium study controls for changes in risk premiums that are
related to fluctuations in bond yields. Moreover, there is no support for Mr. Gatwood's
unsupported contention that a downward trend in interest rates would somehow undermine
my risk premium study. Changes in the relative returns of utility stocks and bonds are
reflected in authorized ROEs, which consider the implications of capital market trends at the
time of the respective regulatory decisions. Mr. Gatewood's assertion is without merit.

15 Q. MR. GATEWOOD CONTENDS THAT THE EXPECTED EARNINGS APPROACH

16 IS NOT VALID BECAUSE IT DOES NOT DEPEND ON MARKET DATA.¹¹⁸ DO 17 YOU AGREE?

A. No. While I agree that market-based models are certainly important tools in estimating investors' required rate of return, this in no way invalidates the usefulness of the expected earnings approach. In fact, this is one of its advantages. The expected earnings approach is

¹¹⁷ Gatewood Direct at 97-98.

¹¹⁸ *Id.* at 42-43.

1 predicated on the comparable earnings test, which developed as a direct result of the Supreme Court decisions in Bluefield and Hope.¹¹⁹ This test recognizes that investors 2 compare the allowed ROE with returns available from other alternatives of comparable risk. 3 4 This opportunity cost test does not require theoretical models to indirectly infer investors' 5 perceptions from stock prices or other market data. As long as the proxy companies are 6 similar in risk, their expected earned returns on invested capital provide a direct benchmark 7 for investors' opportunity costs that is independent of fluctuating stock prices, MTB ratios, 8 debates over DCF growth rates, or the limitations inherent in any theoretical model of 9 investor behavior.

Moreover, regulators do not set the returns that investors earn in the capital markets—they can only establish the allowed return on the value of a utility's investment, as reflected on its accounting records. As a result, the expected earnings approach provides a direct guide to ensure that the allowed ROE is similar to what other utilities of comparable risk will earn on invested capital.

15 Q. HAS THE EXPECTED EARNINGS (OR COMPARABLE EARNINGS) APPROACH

16 BEEN RECOGNIZED AS A VALID ROE BENCHMARK?

A. Yes. This method predominated before the DCF model became fashionable with academic
 experts, and it has long been referenced and relied on in regulatory proceedings.¹²⁰ A
 textbook prepared for the Society of Utility and Regulatory Financial Analysts notes that the

¹¹⁹ Bluefield Water Works & Improvement Co. v. Pub. Serv. Comm'n, 262 U.S. 679 (1923); Fed. Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

¹²⁰ See, e.g., Nat'l Ass'n of Regulatory Util. Comm'rs, *Utility Regulatory Policy in the U.S. and Canada, 1995-1996* (Dec. 1996).

1	comparable earnings test is "easily understood" and firmly anchored in the regulatory
2	tradition of the <i>Bluefield</i> and <i>Hope</i> cases, ¹²¹ as well as sound regulatory economics.
3	New Regulatory Finance concluded that, "because the investment base for
4	ratemaking purposes is expressed in book value terms, a rate of return on book value, as is
5	the case with Comparable Earnings, is highly meaningful." ¹²² For example, the North
6	Carolina Utilities Commission concluded that:
7 8 9 10	In prior cases, the Commission has given significant weight to the results of the Expected Earnings methodology, which stands separate and apart from the market-based methodologies (e.g., the DCF or CAPM) also used by ROE experts. The Commission chooses to do so again in this case. ¹²³
11	Similarly, the Ohio Public Utility Commission is required by statute to consider prospective
12	earned rates of return in evaluating the impact of electric security plans. ¹²⁴
13	As S&P observed, "[h]istorically, there have been two approaches in calculating
14	ROE in regulatory proceedings, a comparable earnings approach and a market analysis. In a
15	comparable earnings approach, similar investments with similar risks are analyzed to
16	determine an appropriate ROE." ¹²⁵

¹²¹ David C. Parcell, *The Cost of Capital – A Practitioner's Guide*, Society of Utility and Regulatory Financial Analysts (2010) at 115-16. ¹²² Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 395.

¹²³ North Carolina Utilities Commission, Docket No. E-7, SUB 1187, *et al.*, Order Accepting Stipulations, Granting Partial Rate Increase, and Requiring Customer Notice (Mar. 31, 2021) at 94.

¹²⁴ Ohio R.C. 4928.143(E).

¹²⁵ S&P Global Market Intelligence, The rate case process: establishing a fair return for regulated utilities, RRA Regulatory Focus (Jun. 29, 2020).

Q. MR. GATEWOOD SUGGESTS THAT THE EXPECTED EARNINGS MODEL DOES NOT SATISFY THE REQUIREMENTS OF *HOPE*.¹²⁶ HOW DO YOU RESPOND?

A. I disagree with this conclusion. The observation that investors cannot buy stock in the market
at book value does not support the conclusion that this method is at odds with the United
States Supreme Court standards. Specifically, it is reasonable to expect that investors
compare stock investments based on securities analysts' projections of the expected return
on common equity, which is analogous to the return on the equity component of a utility's
rate base.

10 This comparison is relevant to investors because it directly measures the returns on 11 book investment that the investment community expects from comparable risk investments, 12 without the need to make the subjective evaluations inherent in market-based models, such 13 as how best to estimate investors' growth expectations or the market required return. In other 14 words, the expected earnings approach serves as a direct measure of the expected returns on 15 equity that investors associate with companies of comparable risk, which provides regulators 16 with a meaningful guide to the return the utility should be expected to earn on its book equity investment. And given that rates are established on the basis of the book value of a utility's 17 18 investment, this is a relevant measure of the return on equity that is consistent with regulatory 19 standards of comparable earnings and capital attraction established in Hope and Bluefield.

¹²⁶ Gatewood Direct at 99.

Q. IS THERE EVIDENCE THAT RETURNS ON BOOK VALUE INFLUENCE INVESTORS' VALUATION DECISIONS?

3 Yes. Book value accounting measures, including earned and expected returns on book equity, A. 4 are instrumental to the financial analysis underpinning investors' evaluation of electric 5 utilities, including credit ratings. S&P cited the relevance of earned returns on book value in 6 highlighting the primary credit considerations in the utility industry, noting that "required 7 rate of return on equity investment is closely linked to a utility company's profitability."¹²⁷ 8 S&P indicated that "[f]or regulated utilities subject to full cost-of-service regulation and 9 return-on-investment requirements, we normally measure profitability using ROE, the ratio of net income available for common stockholders to average common equity."¹²⁸ While 10 11 recognizing that "the regulator ultimately bases its decision on an authorized ROE," S&P 12 observed that "different factors such as variances in costs and usage may influence the return 13 a utility is actually able to earn, and consequently our analysis of profitability for cost-ofservice-based utilities centers on the utility's ability to consistently earn the authorized 14 ROE."¹²⁹ In S&P's view, the earned return on book value may provide better insight into 15 16 the financial health of the utility, because it reflects the actual impact of regulation, not the theoretical outcome implied by an authorized ROE. Consistent with this paradigm, S&P 17 examines trends in utility returns on book equity, as compared with authorized ROEs, in 18 evaluating financial performance for the electric utility industry.¹³⁰ Similarly, in a review of 19

¹²⁷ Standard & Poor's Corporation, *Utilities: Key Credit Factors For The Regulated Utilities Industry*, Criteria Corporates (Nov. 19, 2013).

¹²⁸ Id.

¹²⁹ Id.

¹³⁰ See, e.g., S&P, Utility-earned ROEs exceeded authorized since 2016, but 2019 may not match 2018, Financial Focus (Jun. 10, 2019).

1 2 financial quality measures for utilities, S&P noted that "[t]he earned return on equity . . . is one of the most widely followed measures of the industry's financial performance."¹³¹

3 Moody's also recognizes the relevance of returns on book value in its assessment of 4 a utility's prospects. While noting that "[t]he authorized ROE is a popular focal point in 5 many regulatory rate case proceedings," Moody's recognized that "earned ROEs, as reported by utilities and adjusted by Moody's," are a key gauge of financial performance.¹³² As 6 7 Moody's concluded, "utilities are closer to earning their authorized equity returns, which is positive from an equity market valuation perspective."¹³³ In explaining its scorecard 8 9 analysis for a Baa-rated utility, Moody's Investors' Service noted that regulatory outcomes 10 should be "sufficient to attract capital without difficulty," and that this "will translate to 11 returns (measured in relation to equity, total assets, rate base, or regulatory asset value, as applicable) that are average relative to global peers."¹³⁴ 12

IV. <u>RESPONSE TO CURB WITNESS WOOLRIDGE</u>

13 Q. PLEASE SUMMARIZE DR. WOOLRIDGE'S PRIMARY RECOMMENDATIONS.

A. Dr. Woolridge arrived at his ROE recommendation by applying the DCF model and CAPM
 using two proxy groups of natural gas and combination electric/gas companies. Based on his
 results, Dr. Woolridge concludes that a cost of equity in the range of 8.75% to 10.00% is

¹³¹ S&P Global Market Intelligence, *Utility operating company financials mixed: ROE slips*, Financial Focus (Dec. 11, 2019).

¹³² Moody's, *Lower Authorized Equity Returns Will Not Hurt Near-Term Credit Profiles*, Sector In-Depth (Mar. 10, 2015).

¹³³ *Id*.

¹³⁴ Moody's, *Regulated Electric and Gas Utilities*, Rating Methodology (Jun. 23, 2017).

4		RECOM	IMENDATIO	N "REFLECTS C	CURRENT M	ARKET	CONDI	TIONS."	¹³⁷ DO				
3	Q.	CURB	WITNESS	WOOLRIDGE	ARGUES	THAT	HIS	9.50%	ROE				
2		recommends a hypothetical capital structure with a 50.00% common equity ratio. ¹³⁶											
1		reasonab	le for Black H	Hills and recomme	nds an ROE	of 9.50%	. ¹³⁵ Dr.	. Woolrid	ge also				

125

- 5 YOU AGREE?
- A. No. Dr. Woolridge cites to recently allowed ROEs for electric and gas utilities from 2000 to
 2024.¹³⁸ But as I show in KGS Rebuttal Exhibit AMM-1, adjusting recently allowed ROEs
 for the current capital market environment implies an ROE of 10.33% for natural gas
 utilities. Dr. Woolridge's ROE recommendation of 9.50% for Black Hills falls far short of
 this benchmark.
- 11 Q. DR. WOOLRIDGE CITES A 2022 ARTICLE FROM THE WALL STREET
 12 JOURNAL, SUGGESTING THAT IT CONFIRMS THE REASONABLENESS OF
 13 HIS RECOMMENDATION.¹³⁹ IS THERE ANY MERIT TO THIS CONTENTION?
- A. No. Based on this article, which I address in more detail subsequently, CURB witness
 Woolridge argues that the Commission should not be concerned that his recommendation
 falls below prevailing ROEs for other utilities, as other regulators have systemically failed
 their duty to customers by approving ROEs that exceed the cost of equity by significant
 margins. Regulatory proceedings, including this one, typically include testimony from
 multiple witnesses and an extensive evidentiary record on the subject of a fair and reasonable

¹³⁵ Woolridge Direct at 4-5.

¹³⁶ *Id.* at 5.

¹³⁷ *Id.* at 20.

¹³⁸ *Id.* at 15-16.

¹³⁹ *Id.* at 20-22 (citing, Jinjoo Lee, "Utilities Have a High-Wire Act Ahead," *Wall Street Journal*, October 9, 2022, p. C1. <u>https://www.wsj.com/articles/utilities-have-a-high-wire-act-ahead-11665274525</u> (last visited Aug. 15, 2024)).

1		ROE. Given the guiding legal and statutory obligations, and the independence and
2		professionalism shown by regulators, Dr. Woolridge's suggestion that regulatory agencies
3		have consistently interpreted this evidence to favor investors over customers is misguided.
		A. Discounted Cash Flow Model
4	Q.	WHAT ARE THE FUNDAMENTAL PROBLEMS WITH DR. WOOLRIDGE'S DCF
5		ANALYSES?
6	A.	There are numerous shortcomings associated with the DCF analyses presented by Dr.
7		Woolridge that lead to biased end results:
8 9		• Reliance on dividend growth rates and historical growth measures do not reflect a meaningful guide to investors' expectations.
10 11 12		• Dr. Woolridge discounts reliance on analysts' EPS growth forecasts as biased and fails to recognize that it is investors' perceptions and expectations that must be considered in applying the DCF model.
13 14		• Because Dr. Woolridge fails to test the reasonableness of model inputs, he incorrectly relies on data that results in illogical cost of equity estimates.
15 16		• Dr. Woolridge's internal growth ("br") rates are downward biased because of computational errors and omissions.
17 18 19		• Rather than looking to the capital markets for guidance as to investors' forward-looking expectations, Dr. Woolridge applies the DCF model based on his own personal views.
20		As a result of these flaws and omissions, the resulting DCF cost of equity estimates
21		are downward-biased and fail to reflect investors' required rate of return.

1	Q.	DO YOU BELIEVE THAT HISTORICAL GROWTH RATES PROVIDE A
2		MEANINGFUL GUIDE TO INVESTORS' EXPECTATIONS?
3	A.	No. As discussed in my Direct testimony, ¹⁴⁰ it is investors' future expectations—and not
4		historical results-that determine the current price they are willing to pay for common
5		stocks. Dr. Woolridge noted the pitfalls associated with historical growth measures. As he
6		correctly observed:
7 8		[T]o best estimate the cost of common-equity capital using the conventional DCF model, one must look to long term growth rate expectations. ¹⁴¹
9		As he acknowledged, historical growth rates can differ significantly from the forward-
10		looking growth rate required by the DCF model:
11 12 13 14 15 16 17		[O]ne must use historical growth numbers as measures of investors' expectations with caution. In some cases, past growth may not reflect future growth potential. Also, employing a single growth-rate number (for example, for five or ten years) is unlikely to accurately measure investors' expectations, due to the sensitivity of a single growth-rate figure to fluctuations in individual firm performance as well as overall economic fluctuations (i.e., business cycles). ¹⁴²
18		Moreover, to the extent historical trends for utilities are meaningful, they are already
19		captured in projected growth rates, including those published by Value Line, IBES, and
20		Zacks since securities analysts also routinely examine and assess the impact and continued
21		relevance (if any) of historical trends.

¹⁴⁰ McKenzie Direct at 28-29.
¹⁴¹ Woolridge Direct at 46.
¹⁴² *Id*.

1 **Q**. DR. WOOLRIDGE ARGUES THAT THE GROWTH RATE COMPONENT IN THE DCF MODEL REFLECTS "THE LONG-TERM DIVIDEND GROWTH RATE."143 2 3 DO YOU AGREE THAT THIS IS WHAT INVESTORS ARE MOST LIKELY TO 4 **CONSIDER** IN **DEVELOPING** THEIR LONG-TERM **GROWTH** 5 **EXPECTATIONS?**

A. No. Again, when implementing the DCF model, we are concerned only with replicating the
forward-looking evaluation of real-world investors. In the case of utilities, growth rates in
DPS are not likely to provide a meaningful guide to investors' current growth expectations.
Future trends in EPS, which provide the source for future dividends and ultimately support
share prices, play a pivotal role in determining investors' long-term growth expectations.

11 Q. DR. WOOLRIDGE SAYS THAT EPS GROWTH-RATE FORECASTS OF WALL

12 STREET SECURITIES ANALYSTS ARE "OVERLY OPTIMISTIC AND

13 UPWARDLY BIASED," ¹⁴⁴ AND BASED ON A COMPARATIVE STUDY OF

14 FORECASTS WITH ACTUAL RESULTS, DR. WOOLRIDGE ALSO CLAIMS

15 THAT VALUE LINE'S EPS GROWTH RATES ARE "OVERLY OPTIMISTIC AND

16 UPWARDLY BIASED,"¹⁴⁵ IS THERE ANY MERIT TO THESE ARGUMENTS?

A. No. Comparisons between forecasts of future growth expectations and historical trends in
actual earnings—like those presented by CURB witness Woolridge in Figure 10 and in the
study he cites—are largely irrelevant in evaluating the use of analysts' projections in the

¹⁴³ *Id.* at 45.

¹⁴⁴ Woolridge Direct at 50.

¹⁴⁵ *Id.* at 51, citing Szakmary et al., *An Examination of Value Line's Long-Term Projections*, Journal of Banking & Finance (May 2008) at 820–33.

1 DCF model. Investors, just like securities analysts and others in the investment community, 2 do not know how the future will actually turn out. They can only make investment decisions 3 based on their best estimate of what the future holds in the way of long-term growth for a 4 particular stock, and securities prices are constantly adjusting to reflect their assessment of 5 available information. Projections of securities analysts may be proven optimistic or 6 pessimistic in hindsight, but this is irrelevant in assessing the expected growth that investors 7 have incorporated into current stock prices, and any bias in analysts' forecasts-whether 8 pessimistic or optimistic—is irrelevant if investors share analysts' views. As New Regulatory 9 Finance concluded, "The accuracy of these forecasts in the sense of whether they turn out 10 to be correct is not an issue here, as long as they reflect widely held expectations."¹⁴⁶ 11 Expectations for earnings growth are instrumental in investors' evaluation and the fact that 12 analysts' projections deviate from actual results provides no basis to ignore this relationship. 13 In using the DCF model to estimate investors' required returns, the purpose is not to prejudge the accuracy or rationality of investors' growth expectations. Instead, to accurately 14 15 estimate the cost of equity the analysis must rely on the growth expectations investors 16 actually used to determine stock prices-even if we do not agree with their assumptions. As 17 Robert Harris and Felicia Marston noted in their article in *Journal of Applied Finance*: 18 ...Analysts' optimism, if any, is not necessarily a problem for the analysis in this paper. If investors share analysts' views, our procedures will still yield 19 20 unbiased estimates of required returns and risk premia.¹⁴⁷

¹⁴⁶ *Id*.

¹⁴⁷ Robert S. Harris and Felicia C. Marston, *The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts*, Journal of Applied Finance 11 (2001) at 8.
1		Similarly, there is no logical foundation for criticisms such as those raised by Dr.
2		Woolridge that the purported upward bias of analysts' growth rates limits their usefulness in
3		applying the DCF model. If investors base their expectations on these growth rates, then they
4		are useful in inferring investors' required returns, even if the analysts' forecasts prove to be
5		wrong in hindsight.
6	Q.	ARE THERE PUBLISHED RESEARCH STUDIES THAT CONTRADICT DR.
7		WOOLRIDGE'S FINDINGS?
8	A.	Yes. Peer-reviewed empirical studies do not uniformly support his contention that analysts'
9		growth projections are optimistically biased. For example, a study reported in Analyst
10		Forecasting Errors: Additional Evidence found no optimistic bias in earnings projections for
11		large firms (market capitalization of \$500-\$3,000 million), with data for the largest firms
12		(market capitalization > \$3,000 million) demonstrating a <i>pessimistic</i> bias. ¹⁴⁸ Similarly, a
13		2005 article that examined analyst growth forecasts over the period 1990 through 2001
14		illustrated that Wall Street's forecasting is not inherently optimistic:
15 16 17		The pessimism associated with profit firms is astonishing. Near the end of the sample period, almost three quarters of the quarterly forecasts for profit firms are pessimistic. ¹⁴⁹
18		Other research on this topic also concludes that there is no clear support for the contention
19		that analyst forecasts contain upside bias:
20 21 22		Our examples do demonstrate how some widely held beliefs about analysts' proclivity to commit systematic errors (e.g., the common belief that analysts generally produce optimistic forecasts) are not well supported by a broader

 ¹⁴⁸ Lawrence D. Brown, *Analyst Forecasting Errors: Additional Evidence*, Financial Analysts Journal (November/December 1997).
 ¹⁴⁹ Stephen Ciccone, *Trends in analyst earnings forecast properties*, International Review of Financial Analysis, 14:2-

^{3 (2005).}

1 2 3 4		analysis of the distribution of forecast errors. After four decades of research on the rationality of analysts' forecasts it is somewhat disconcerting that the most definitive statements observers and critics of earnings forecasters are willing to agree on are ones for which there is only tenuous empirical support. ¹⁵⁰
5		Tellingly, despite Dr. Woolridge's indictment of analysts' EPS growth projections,
6		this data largely serves as the basis for his own DCF analysis. When selecting the final
7		growth rates for both proxy groups referenced in his testimony, Dr. Woolridge gives
8		"primary weight" to the projected EPS growth rates of Wall Street analysts. ¹⁵¹ So, while Dr.
9		Woolridge complains vociferously about the suitability of analysts' EPS growth projections,
10		he relies primarily on these same projections in reaching his ultimate DCF conclusions. His
11		criticisms of the use of analysts' EPS growth projections ring hollow and are without merit
12		in this light.
13	Q.	IS THE IMPORTANCE OF EARNINGS IN EVALUATING INVESTORS'
14		EXPECTATIONS AND REQUIREMENTS WELL ACCEPTED IN THE
15		INVESTMENT COMMUNITY?
16	A.	Yes. Surveys of analytical techniques relied on by professional analysts indicate that growth
17		in EPS is far more influential than trends in DPS or other measures. ¹⁵² As explained in <i>New</i>
18		Regulatory Finance:
19 20 21		Because of the dominance of institutional investors and their influence on individual investors, analysts' forecasts of long-run growth rates provide a sound basis for estimating required returns. Financial analysts exert a strong

¹⁵⁰ Jeffery Abarbanell and Lehavy Reuven, *Biased forecasts or biased earnings? The role of reported earnings in explaining apparent bias and over/under reaction in analysts' earnings forecasts*, Journal of Accounting and Economics, 36: 142 (2003).

¹⁵¹ Woolridge Direct at 55.

¹⁵² Stanley B. Block, *A Study of Financial Analysts: Practice and Theory*, Financial Analysts Journal (July/August 1999).

1 2	influence on the expectations of many investors who do not possess the resources to make their own forecasts, that is, they are a cause of g [growth]. ¹⁵³
3	The availability of projected EPS growth rates also is key to investors relying upon
4	this measure as compared to future trends in DPS or earnings retention. Apart from Value
5	Line, investment advisory services do not generally publish comprehensive DPS or earnings
6	retention growth projections, and this lack of growth rates relative to the abundance of EPS
7	forecasts attests to their relative influence. As New Regulatory Finance observed:
8 9 10 11 12 13 14 15	The sheer volume of earnings forecasts available from the investment community relative to the scarcity of dividend forecasts attests to their importance. The fact that these investment information providers focus on growth in earnings rather than growth in dividends indicates that the investment community regards earnings growth as a superior indicator of future long-term growth. Surveys of analytical techniques actually used by analysts reveal the dominance of earnings and conclude that earnings are considered far more important than dividends. ¹⁵⁴
16	The fact that analyst EPS growth estimates are routinely referenced in the financial media
17	and in investment advisory publications implies that investors use them as a primary basis
18	for their expectations.
19	While I do not rely solely on EPS projections in applying the DCF model, ¹⁵⁵ my
20	evaluation clearly supports greater reliance on EPS growth rate projections than other
21	alternatives.

¹⁵³ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 298.
¹⁵⁴ *Id.* at 302-303.
¹⁵⁵ As discussed in my direct testimony, I also examined the "br+sv", sustainable growth rates for the companies in my proxy group.

Q. IS THERE OBVIOUS DOWNWARD BIAS IN DR. WOOLRIDGE'S HISTORICAL GROWTH MEASURES?

3 A. Yes. As shown on page 3 of Exhibit JRW-5, twenty-three of the historical growth rates 4 reported by Dr. Woolridge for his proxy companies are 2.5% or less, including five negative 5 values. A negative growth rate implies a cost of equity that falls below the utility's dividend 6 yield, which makes no economic sense. Similarly, combining a growth rate of 2.5% with Dr. Woolridge's dividend yield of 3.5%¹⁵⁶ implies a DCF cost of equity 6.00%, which falls 7 8 below the current yield on Baa-rated utility bonds. Clearly, the risks associated with an 9 investment in public utility common stocks exceed those of long-term bonds and Dr. 10 Woolridge's historical growth measures provide no meaningful information regarding the 11 expectations and requirements of investors.

12 Q. DOES DR. WOOLDRIDGE ALSO INCLUDE ILLOGICAL GROWTH RATES IN

13 HIS EXAMINATION OF PROJECTED GROWTH RATES?

A. Yes, as shown on pages 4 and 5 of Exhibit JRW-5, he includes eleven growth rates at 2.5%
 or less in his analysis of projected growth rates for his proxy group. These growth rates are
 not meaningful and should be excluded from his DCF analysis.

17 Q. DOES DR. WOOLRIDGE TEST THE REASONABLENESS OF THE INDIVIDUAL

18 **GROWTH ESTIMATES HE RELIED ON TO APPLY THE CONSTANT GROWTH**

- 19 **DCF MODEL?**
- A. No. Despite recognizing that caution is warranted in using historical growth rates, Dr.
 Woolridge simply calculates the average and median of the individual growth rates with no

¹⁵⁶ Exhibit JRW-5, page 1.

consideration for the reasonableness of the underlying data. As demonstrated above, many
 of the cost of equity estimates implied by Dr. Woolridge's DCF application make no
 economic sense.

4

5

Q. DOES REFERENCE TO THE MEDIAN CORRECT FOR ANY UNDERLYING BIAS IN DR. WOOLRIDGE'S HISTORICAL GROWTH RATES?

A. No. The median is simply the observation with an equal number of data values above and
below. For odd-numbered samples, the median relies on only a <u>single number</u>, *e.g.*, the fifth
number in a nine-number set. Reliance on the median value for a series of illogical values
does not correct for the inability of individual cost of equity estimates to pass fundamental
tests of economic logic.

Q. DR. WOOLRIDGE RELIES ON SUSTAINABLE, "BR" GROWTH RATES (EXHIBIT JRW-5, P. 4). SHOULD THE COMMISSION PLACE ANY WEIGHT ON THESE VALUES?

A. No. Dr. Woolridge's internal growth rates are downward biased because of computational
errors and omissions. Dr. Woolridge based his calculations of the internal, "br" retention
growth rate on data from Value Line. These are end-of-period results. If the rate of return, or
"r" component of the internal growth rate, is based on end-of-year book values, such as those
reported by Value Line, it will understate actual returns because of growth in common equity
over the year.

1 Q.

Q. WHAT OTHER CONSIDERATION LEADS TO A DOWNWARD BIAS IN DR.

2

WOOLRIDGE'S CALCULATION OF INTERNAL, "BR" GROWTH?

A. Dr. Woolridge ignored the impact of additional issuances of common stock in his analysis of
the sustainable growth rate. Under DCF theory, the "sv" factor is a component designed to
capture the impact on growth of issuing new common stock at a price above, or below, book
value. As noted by Myron J. Gordon in his 1974 study:

- 7 When a new issue is sold at a price per share P = E, the equity of the new 8 shareholders in the firm is equal to the funds they contribute, and the equity of 9 the existing shareholders is not changed. However, if P > E, part of the funds 10 raised accrues to the existing shareholders. Specifically...[v] is the fraction of the funds raised by the sale of stock that increases the book value of the existing 11 shareholders' common equity. Also, "v" is the fraction of earnings and 12 dividends generated by the new funds that accrues to the existing 13 shareholders.¹⁵⁷ 14
- 15 In other words, the "sv" factor recognizes that when new stock is sold at a price above
- 16 (below) book value, existing shareholders experience equity accretion (dilution). In the case
- 17 of equity accretion, the increment of proceeds above book value (P > E in Professor Gordon's
- 18 example) leads to higher growth because it increases the book value of the existing
- 19 shareholders' equity. In short, the "sv" component is consistent with DCF theory and Dr.
- 20 Woolridge's failure to consider the incremental impact on growth results in another
- 21 downward bias to his "internal" growth rates, which should be given no weight.

¹⁵⁷ Myron J. Gordon, *The Cost of Capital to a Public Utility*, MSU Public Utilities Studies (1974) at 31-32.

B. Capital Asset Pricing Model

1	Q.	WHAT IS THE FUNDAMENTAL PROBLEM ASSOCIATED WITH THE
2		APPROACH THAT DR. WOOLRIDGE USED TO APPLY THE CAPM?
3	A.	The CAPM applications presented by Dr. Woolridge are based entirely on historical rates of
4		return, not current projections. Because he failed to look directly at the returns investors are
5		currently requiring in the capital markets, the 8.92% and 8.73% historical CAPM estimate
6		developed by Dr. Woolridge ¹⁵⁸ fall woefully short of investors' current required rate of
7		return.
8	Q.	DR. WOOLRIDGE CHARACTERIZES HIS RISK PREMIUM AS <i>EX ANTE</i> . ¹⁵⁹ IS
9		THIS AN ACCURATE ASSESSMENT?
10	A.	No. To be considered a forward-looking, ex ante estimate of the current market risk
11		premium, the analysis must be predicated on investors' current expectations. Dr. Woolridge
12		does not attempt to develop a market risk premium using current capital market information.
13		Rather, he simply presents the results of various studies and surveys conducted in the past.
14		Certain of these studies may have attempted to infer the expected equity risk premium at the
15		time they were developed, but data from some point in the past is not equivalent to investors
16		ex ante requirements in capital markets today.
17		As one of Dr. Woolridge's own sources observed, "Since the 2008 crisis, with its
18		aftermath of low government bond rates and a simmering economic crisis, risk premiums in

¹⁵⁸ Exhibit JRW-6, page 1.
¹⁵⁹ Woolridge Direct at 66-69.

the United States have behaved differently than they have historically."¹⁶⁰ There is every indication that the historical CAPM approach used by Dr. Woolridge fails to fully reflect the risk perceptions of real-world investors in today's capital markets, and his results should be ignored.

5 Q. DOES DR. WOOLRIDGE ALSO RECOGNIZE THE WEAKNESS OF 6 HISTORICAL CAPM APPROACHES?

A. Yes. Dr. Woolridge noted that *ex post*, historical rates of return "are not the same as *ex ante* expectations," and observed that, "historical evaluation of returns can be a problem."¹⁶¹ Dr.
Woolridge admitted that "market-risk premiums can change over time ... such that *ex post* historical returns are poor estimates of *ex ante* expectations."¹⁶²

11 Q. IS THERE EVIDENCE THAT THE STUDIES REFERENCED BY DR. 12 WOOLRIDGE DO NOT REFLECT INVESTORS' EXPECTATIONS?

A. Yes. Many of the equity risk premium findings reported by Dr. Woolridge do not make
 economic sense and contradict his own testimony. For example, page 5 of Dr. Woolridge's
 Exhibit JRW-6 reveals that almost half of the studies included in his review found average
 market equity risk premiums of approximately 4.5% or below.¹⁶³ But combining a market
 equity risk premium of 4.5% with Dr. Woolridge's 4.8% risk-free rate results in an indicated

¹⁶⁰ Aswath Damodaran, *Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2025 Edition* (Updated: March 5, 2020) at 14. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5168609 (last visited May 19, 2025).

¹⁶¹ Woolridge Direct at 62.

 $^{^{162}}$ Id.

¹⁶³ This is also true for ten of the twenty-three individual risk premium studies that Dr. Woolridge classified as "more recent." Exhibit JRW-6, p. 6.

1 cost of equity for the market as a whole of 9.3%, which is below his 9.50% ROE recommendation for Black Hills in this case.

2

As Dr. Woolridge notes, the theory underlying the CAPM holds that beta is the only 3 relevant measure of investment risk and the market is assumed to have a beta of 1.0.¹⁶⁴ 4 5 Given the average betas Dr. Woolridge uses for his proxy groups of 0.82 and 0.79,¹⁶⁵ this indicates that investors' required return on the market as a whole should exceed the cost of 6 7 equity for gas utilities. It follows that a market rate of return that does not significantly 8 exceed his own downward biased ROE recommendation has no relation to the current 9 expectations of real-world investors. The fact that much of his CAPM "evidence" violates 10 the risk-return tradeoff that is fundamental to financial theory clearly illustrates the weakness of Dr. Woolridge's analyses. 11

12 HOW DOES CURB WITNESS WOOLRIDGE ULTIMATELY SELECT HIS **Q**. 13 **MARKET RISK PREMIUM?**

Dr. Woolridge gives primary weight to estimates from four sources, including a 5.50% value 14 A. 15 from a 2024 IESE business school survey, a figure of 4.43% from the website of a finance 16 professor from New York University (Aswath Damodaran), a 5.50% figure published by Kroll, a 5.00% figure provided by KPMG and a 3.90% value from JP Morgan.¹⁶⁶ From 17 these, he selects 5.50% as his market risk premium.¹⁶⁷ 18

¹⁶⁴ Woolridge Direct at 36-37.

¹⁶⁵ Exhibit JRW-6 at 1.

¹⁶⁶ Woolridge Direct at 70.

¹⁶⁷ *Id*.

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Q. DR. WOOLRIDGE CHARACTERIZES HIS 5.50% MARKET RISK PREMIUM AS "APPROPRIATE."¹⁶⁸ DO YOU AGREE?

3 No. Even the authors of a study that Dr. Woolridge cites and discusses at length would A. characterize his 5.50% market risk premium as falling below a "low" estimate.¹⁶⁹ In their 4 5 working paper Rate of Return Regulation Revisited, which I discuss in more detail below, 6 Karl Werner and Stephen Jarvis discuss their market risk premium assumptions: To capture the uncertainty in the market risk premium, in our "low" case we 7 assume a constant MRP of 6 percent and in our "high" case we assume a 8 constant *MRP* of 8 percent.¹⁷⁰ 9 10 This quote shows that these authors view a 5.50% market risk premium as falling 11 outside a reasonable range. 12 Q. WHAT IS YOUR RESPONSE TO THE 5.50% FIGURE SOURCED FROM THE 13 **IESE BUSINESS SCHOOL SURVEY?** 14 The Fernandez survey cited by Dr. Woolridge is the result of a mass solicitation to more than A. 14,000 email addresses, out of which 1,634 responses were received.¹⁷¹ Because the 15 16 wording of the survey is imprecise and open to interpretation, it is impossible to draw any 17 meaningful conclusions from the results. For example, the 2024 survey relied on by Dr. 18 Woolridge simply asks, "The Market Risk Premium that I am using in 2024 for USA is 19 %."¹⁷² This is entirely unclear. The respondent has no idea whether he or she is being

¹⁶⁸ Id.

¹⁶⁹ *Id.* at 21.

¹⁷⁰ Karl Dunkle Werner and Stephen Jarvis, *Rate of Return Regulation Revisited*, Energy Institute at Haas WP 329 (September 2022).

¹⁷¹ Pablo Fernandez, Diego Garcia, and Lucia F. Acin, *Survey: Market Risk Premium and Risk-Free Rate used for 96 countries in 2024* (Mar. 11, 2024). https://papers.csm.com/sol3/papers.cfm?abstract_id=4754347&download=yes (last visited May 19, 2025) ("*Fernandez*").

¹⁷² *Id.* at 13. The paper indicates that the survey was sent in February 2024.

1	queried for a risk premium during 2024 or over some other period; nor is the basis on which
2	the risk premium is calculated even specified. ¹⁷³ It should also be mentioned that these
3	survey responses are now over one year old, and so they cannot be a reflection of current
4	capital market sentiment.
5	In addition, while Dr. Woolridge characterizes the Fernandez publication as a survey
6	of "Academics, Analysts, and Companies," ¹⁷⁴ there is no ability to verify the experience or
7	familiarity of the respondents with the subject matter. Published comments of respondents
8	cast significant doubt on their credibility and the reliability of the results. For example: ¹⁷⁵
9 10 11	• I do not use MRP or a RF for three reasons: 1) I am retired; 2) I do not accept their validity; and, 3) the "new normal" makes no economic or financial sense.
12 13	• "The subject who is truly loyal to the Chief Magistrate will neither advise nor submit to arbitrary measures." Junius
14 15	• Interest rates are artificially well below historic levels. Thus, bonds and equities values are artificially inflated.
16 17	• I use the US Equity premium of Damodaran to avoid explanations or justifications to clients.
18	These responses undermine any confidence in the veracity of the Fernandez publication and
19	its usefulness in this case.

https://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2776636_code12696.pdf?abstractid=2776636&mirid=1&type=2 (last visited May 19, 2025).

¹⁷³ One respondent to a previous *Fernandez* survey characterized the imprecision and ambiguity this way: "You don't define exactly what you mean by "Market Risk Premium". Different authorities define it in different ways. Is it expected return over short-term government securities (*e.g.*, 30 or 90 day T-Bills), or longer-term government bonds?" Pablo Fernandez, Alberto Ortiz Pizarro, and Isabela F. Acin, "Market Risk Premium Used in 71 Countries in 2016: A Survey with 6,932 Answers," (May 2016).

¹⁷⁴ Exhibit JRW-6, page 6.

¹⁷⁵ Pablo Fernandez, Diego Garcia, and Lucia F. Acin, *Survey: Market Risk Premium and Risk-Free Rate used for 96 countries in 2024* (Mar. 11, 2024). <u>https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4754347&download=yes</u> (last visited May 19, 2025).

1

2

Q. ARE THERE OTHER SHORTCOMINGS ASSOCIATED WITH THE SOURCES **CITED BY CURB WITNESS WOOLRIDGE?**

3 Yes. For example, the Damodaran study cited by Dr. Woolridge derives a market risk A. 4 premium by forcing the growth rate for all competitive firms to a constant long-term rate 5 after five years. In addition, Damodaran inexplicably assumes that this long-term rate of 6 growth will equal the current yield on 10-year Treasury bonds. There is no demonstrable link 7 between investors' growth expectations for common stocks and the current Treasury bond 8 yield, and I know of no credible source of investment guidance that is expecting growth for 9 all companies in the economy to equal the yield on Treasury bonds at the end of the next five 10 years. Dr. Damodaran also reports a cost of equity for utilities of 6.28%. This is 11 approximately equal to the yield on Baa-rated utility bonds, which yield the fundamental finance principle that riskier assets mush offer higher rates of return.¹⁷⁶ Similarly, the JP 12 13 Morgan publication relied on by Dr. Woolridge implies a return for the market as a whole of 14 6.70%, which barely exceeds the yields on investment grade utility bonds.

15 Meanwhile, as discussed earlier in response to Staff witness Gatewood, Kroll does 16 not provide any specific guidance as to the specific assumptions or methodology underlying 17 the reported market risk premium, which is also the case with the KPMG publication cited 18 by Dr. Woolridge. The fundamental problem with Dr. Woolridge's approach is that instead 19 of looking directly at an equity risk premium based on current expectations he pursues an 20 unrelated tactic of compiling selected computations from the historical record. The only 21 relevant issue for application of the CAPM in a regulatory context is the return investors

¹⁷⁶ http://www.stern.nyu.edu/~adamodar/pc/datasets/wacc.xls (last visited May 19, 2025).

currently expect to earn on money invested today in the risky market portfolio versus the
 risk-free U.S. Treasury alternative.

3 Q. ARE THERE REPUTABLE SOURCES THAT CONFIRM THE DOWNWARD BIAS
4 INHERENT IN DR. WOOLRIDGE'S CAPM MARKET RATE OF RETURN?

- A. Yes. Morningstar, which is a widely recognized source of current investment information,
 reports a current dividend yield of 1.54% for the S&P 500, with an expected long-term EPS
 growth rate of 9.92%.¹⁷⁷ This implies an expected rate of return for the S&P 500 of 11.46%,
 versus the 11.9% used in my application of the CAPM.¹⁷⁸
- 9 Q. IS DR. WOOLRIDGE JUSTIFIED IN RELYING ON GEOMETRIC MEANS AS A
 10 MEASURE OF AVERAGE RATE OF RETURN WHEN APPLYING THE
 11 HISTORICAL CAPM?¹⁷⁹
- A. No. I addressed this issue earlier in response to Staff witness Gatewood. Arithmetic means
 are the only correct measure for estimating the cost of equity using historical data. For a
 variable series, such as stock returns, the geometric average will <u>always</u> be less than the
 arithmetic average. Accordingly, Dr. Woolridge's reference to geometric average rates of
 return provides yet another element of built-in downward bias.

 ¹⁷⁷ Morningstar, *S&P 500 PR*, https://www.morningstar.com/indexes/spi/spx/portfolio (last visited May 19, 2025).
 ¹⁷⁸ Similarly, State Street Global Advisors reported expected EPS growth of 12.36% for the S&P 500 and a dividend yield of 1.38%, which implies an expected return of 13.74%. State Street Global Advisors, *SPDR*® *S&P 500*®*ETF Trust Fact Sheet* (Mar. 31, 2025). <u>https://www.ssga.com/library-content/products/factsheets/etfs/us/factsheet-us-enspy.pdf</u> (last visited May 19, 2025).
 ¹⁷⁹ Exhibit JRW-6 at 5-6.

Q. DR. WOOLRIDGE CRITICIZES THE MARKET RETURN THAT YOU USE IN YOUR CAPM AND ECAPM ANALYSES CLAIMING THAT "LONG-TERM EPS AND GDP GROWTH ARE DIRECTLY LINKED."¹⁸⁰ WHAT IS YOUR RESPONSE TO THIS CLAIM?

A. Earlier in my response to Mr. Gatewood, I discuss a number of reasons why using long-term
GDP growth as an upper bound to the DCF growth rate is not justified. I also explain why
arguments regarding the sustainability of EPS growth rates any specific firm in the S&P 500
are not relevant. There is no basis for Dr. Woolridge's position that investors' growth
expectations should be constrained by a threshold tied to GDP.

10 Q. IS THERE ANY MERIT TO DR. WOOLRIDGE'S ARGUMENT THAT THE SIZE 11 PREMIUM DOES NOT APPLY TO UTILITY COMMON STOCKS?¹⁸¹

12 A. No. I previously discussed this criticism in my response to Mr. Gatewood. For example, Dr. Woolridge cites a 1993 study by Annie Wong,¹⁸² but a closer examination of this research 13 reveals that it is inconclusive and inconsistent with the CAPM. In fact, her results 14 15 demonstrate no material difference between utilities and industrial firms with respect to size 16 premiums, and her study finds no significant relationship between beta and returns, which contradicts modern portfolio theory and the CAPM. A more recent study published in the 17 Quarterly Review of Economics and Finance reconsiders Wong's evidence and concludes 18 that "new information . . . indicates there is a small firm effect in the utility sector."¹⁸³ 19

¹⁸⁰ Woolridge Direct at 98.

¹⁸¹ *Id.* at 94-97.

¹⁸² *Id.* at 95.

¹⁸³ Thomas M. Zepp, *Utility stocks and the size effect—revisited*, Quarterly Review of Economics and Finance, 43 (2003) 578-582.

1		Moody's also recognizes that firm size is a relevant consideration in evaluating risks
2		in the utility sector, observing that:
3		We generally regard smaller companies as more vulnerable to single event
4		related costs or cash flow pressure because of their lack of economies of scale
5		and market position. Should there be an unforeseen event or regulatory change
6		that causes significant cost increases over a short period of time or reduces
7		sources of cash flow, smaller companies are more at-risk than larger
8		companies, which are able to spread the costs across a larger range of assets or
9		have greater diversification in sources of cash flow. ¹⁸⁴
10		As Duff & Phelps concluded:
11 12 13		[O]bservation of the size effect is consistent with a modification of the pure CAPM. Studies have shown the limitations of beta as a sole measure of risk. The size premium is an empirically derived correction to the pure CAPM. ¹⁸⁵
14	Q.	IS THE SIZE ADJUSTMENT INCORPORATED IN YOUR ANALYSIS
15		CONSISTENT WITH HOW FERC APPLIES THE CAPM?
16	A.	Yes. FERC has observed that "[t]his type of size adjustment is a generally accepted approach
17		to CAPM analyses,"186 and includes the size adjustment in the CAPM under its ROE
18		methodology for electric utilities and natural gas and oil pipelines. ¹⁸⁷ More recently, FERC
19		affirmed its practice of including a size adjustment, concluding that "the size adjustment is
20		necessary to correct for the CAPM's inability to fully account for the impact of firm size
21		when determining the cost of equity." ¹⁸⁸

¹⁸⁴ Moody's Investors Service, Alaska Electric Light and Power Company (AELP), Credit Opinion (Aug. 10, 2021).

¹⁸⁵ Duff & Phelps, 2018 Cost of Capital: Annual U.S. Guidance and Examples, Cost of Capital Navigator at 33.

¹⁸⁶ Coakley v. Bangor-Hydro-Elec. Co., Opinion No. 531-B, 150 FERC ¶ 61,165 at P 117 (2015).

¹⁸⁷ Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., Opinion No. 569-A, 171 FERC ¶ 61,154 (2020); Policy Statement on Determining Return on Equity for Natural Gas and Oil Pipelines, 171 FERC ¶ 61,155 (2020).

¹⁸⁸ Ass'n of Bus. Advocating Tariff Equity v. Midcontinent Indep. Sys. Operator, Inc., Opinion No. 569-B, 173 FERC ¶ 61,159 at P 100 (2020).

C. Other ROE Issues

1	Q.	CURB WITNESS WOOLRIDGE CLAIMS THAT HIS RECOMMENDED ROE OF
2		9.50% IS "SLIGHTLY BELOW THE AVERAGE AUTHORIZED ROES FOR GAS
3		DISTRIBUTION COMPANIES." ¹⁸⁹ IS HE CORRECT?
4	A.	No. The average ROE awarded to gas distribution utilities like Black Hills over the 12
5		months ending March 31, 2025 was 9.73%. ¹⁹⁰ CURB witness Woolridge's recommendation
6		for Black Hills is 23 basis points below this benchmark.
7	Q.	DR. WOOLRIDGE CLAIMS THAT "PAST AUTHORIZED ROES HAVE
8		OVERSTATED THE ACTUAL COST OF EQUITY CAPITAL," AND THAT "THE
9		COMMISSION SHOULD NOT BE CONCERNED THAT MY RECOMMENDED
10		ROE IS BELOW OTHER AUTHORIZED ROES." ¹⁹¹ HOW DO YOU RESPOND?
11	A.	As noted earlier, Dr. Woolridge bases his claim that past authorized ROEs have overstated
12		the actual cost of equity capital on a 2022 Wall Street Journal article that discusses the
13		findings of a working paper by Karl Werner and Stephen Jarvis. ¹⁹² In this paper, the authors
14		purport to show that authorized ROEs for electric and gas utilities have not fallen at the same
15		rate as other capital market benchmarks, such as various bond yields and the authors'
16		estimates of CAPM ROEs. Dr. Woolridge summarizes the results of this unpublished
17		working paper, which has not been peer-reviewed or subject to review by any editorial board,
18		and says "these results indicate that, over the past four decades authorized ROEs have not

 ¹⁸⁹ Woolridge Direct at 22.
 ¹⁹⁰ S&P Global Market Intelligence, *Major energy rate case decisions in the US—January-March 2025*, RRA Regulatory Focus (Apr. 25, 2025). ¹⁹¹ Woolridge Direct at 22.

¹⁹² Karl Dunkle Werner and Stephen Jarvis, Rate of Return Regulation Revisited, Energy Institute at Haas WP 329 (September 2022).

declined in line with capital costs and therefore past authorized ROEs have overstated the
 actual cost of equity capital." ¹⁹³ There are several problems with Dr. Woolridge's
 conclusion.

4 One of the capital market benchmarks the authors use is various bond yields, such as 5 corporate and Treasury bond yields. But as discussed earlier and in my Direct testimony,¹⁹⁴ 6 it is generally accepted that there is an inverse relationship between equity risk premiums 7 and interest rates. In other words, equity risk premiums widen as bond yields decline. As a 8 result, the cost of equity would not be expected to decline as far as bond yields and there is 9 no sound theoretical basis to conclude that there is a gap between authorized ROEs and the 10 "actual cost of equity capital." As Werner and Jarvis concede, "It is not clear that the cost of 11 equity should necessarily move in a one-for-one manner with these two measures of bond yields."195 12

The authors also examine the difference between authorized ROEs and their own CAPM estimates of the cost of equity for utilities, but this formulation has its own problems. For simplicity, the authors assume that the market risk premium over their 40-year study was constant and equal to 6% in the "low" case, and 8% in the "high" case. To begin with, there is no logical support for this assumption. Beyond that, it is apparent that the authors' assumed level of the CAPM market risk premium in their study has a large effect on the "gap" they purport to measure. For example, assuming a 6% market risk premium the authors find a

¹⁹³ Woolridge Direct at 22.

¹⁹⁴ McKenzie Direct at 42-43.

¹⁹⁵ Karl Dunkle Werner and Stephen Jarvis, *Rate of Return Regulation Revisited*, Energy Institute at Haas, WP 329 (September 2022) at 27.

1		4.31% gap in 2010 for natural gas utilities, while the gap is -0.516 under their assumption of
2		an 8% market risk premium. ¹⁹⁶ Moreover, there is no consistent relationship between the
3		CAPM cost of equity derived by the authors and the allowed ROE over the four-decade study
4		period. For example, in six of the eight periods reported in the working paper, the allowed
5		ROE for gas utilities fell below the "high" CAPM result, indicating that authorized ROEs
6		were understated. These results are dependent on arbitrary and unsupported assumptions
7		about the CAPM market risk premium, and Dr. Woolridge is cavalier to conclude that this
8		working paper demonstrates that "past authorized ROEs have overstated the actual cost of
9		equity capital."
10	Q.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES
10 11	Q.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID?
10 11 12	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned
10 11 12 13	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned by utilities in recent years have been in excess of their cost of capital. For example, he states
10 11 12 13 14	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned by utilities in recent years have been in excess of their cost of capital. For example, he states that "since utilities have been selling at market-to-book ratios exceeding 1.0 for many years
10 11 12 13 14 15	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned by utilities in recent years have been in excess of their cost of capital. For example, he states that "since utilities have been selling at market-to-book ratios exceeding 1.0 for many years [t]his indicates that the authorized rates of return have been greater than the return that
10 11 12 13 14 15 16	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned by utilities in recent years have been in excess of their cost of capital. For example, he states that "since utilities have been selling at market-to-book ratios exceeding 1.0 for many years [t]his indicates that the authorized rates of return have been greater than the return that investors require." ¹⁹⁸ Dr. Woolridge summarizes his position, stating that "a market-to-book
 10 11 12 13 14 15 16 17 	Q. A.	DR. WOOLRIDGE DISCUSSES MARKET-TO-BOOK RATIOS AND REACHES SEVERAL CONCLUSIONS IN THIS AREA. ¹⁹⁷ ARE HIS CONCLUSIONS VALID? No. Dr. Woolridge uses the M/B ratio as a type of indicator as to whether the returns earned by utilities in recent years have been in excess of their cost of capital. For example, he states that "since utilities have been selling at market-to-book ratios exceeding 1.0 for many years [t]his indicates that the authorized rates of return have been greater than the return that investors require." ¹⁹⁸ Dr. Woolridge summarizes his position, stating that "a market-to-book ratio above 1.0 indicates a company's ROE is above its equity cost rate." ¹⁹⁹

I strongly disagree with the suggestion that market-to-book ratios are a valid 18 indicator as to the reasonableness of earned returns or that they should be considered in 19

¹⁹⁶ A negative "gap" implies that the authorized ROE is less than the cost of equity indicated by the CAPM analysis.
¹⁹⁷ Woolridge Direct at 10, 33-35, 75, 103.
¹⁹⁸ *Id.* at 103.

¹⁹⁹ Id.

setting the allowed ROE for utilities. With market-to-book ratios for most utilities above 1.0,
 CURB witness Woolridge is suggesting that, unless book value grows rapidly, regulators
 should establish ROEs that will cause share prices to fall. Given the regulatory imperative

4 of preserving a utility's ability to attract capital, this would be a nonsensical result.

5 Q. IS THE SIMPLISTIC NOTION THAT REGULATION SHOULD RESULT IN AN 6 MARKET-TO-BOOK RATIO OF 1.0 FOR UTILITIES CONTRADICTED BY 7 AUTHORITATIVE SOURCES?

8 A. Yes. In a 1988 publication, James C. Bonbright noted that focus on market-to-book ratios

- 9 was unwarranted and outside the role of regulators:
- 10 In the first place, commissioners cannot forecast, except within wide limits, the 11 effect their rate orders will have on the market prices of the stocks of the companies they regulate. In the second place, whatever the initial market prices 12 13 may be, they are sure to change not only with the changing prospects for 14 earnings, but with the changing outlook of an inherently volatile stock market. In short, market prices are beyond the control, though not beyond the influence, 15 16 of rate regulation. Moreover, even if a commission did possess the power of control, any attempt to exercise it . . . would result in harmful, uneconomic 17 shifts in public utility rate levels.²⁰⁰ 18
- 19 The well-known financial researcher Stewart C. Myers also observed the disconnect
- 20 between regulation and the resulting market-to-book ratio:

21[A] straightforward application of the cost of capital to a book value rate base22does not automatically imply that the market and book values will be equal.23This is an obvious but important point. If straightforward approaches did imply24equality of market and book values, then there would be no need to estimate25the cost of capital.

²⁰⁰ James C. Bonbright, Albert L. Danielsen, and David R. Kamerschen, *Principles of Public Utility Rates*, Pub. Utils. Reports, Inc. (1988) at 334.

²⁰¹ Stewart C. Myers, *The Application of Finance Theory to Public Utility Rate Cases*, Bell J. Econ. & Mgmt. Science (Spring 1972) at 58-59.

1		Similarly, Charles F. Phillips also recognized the divergence between the
2		implications of theoretical models and real-world considerations:
3 4 5 6		Many question the assumption that market price should equal book value, believing that the earnings of utilities should be sufficiently high to achieve market-to-book ratios which are consistent with those prevailing for stocks of unregulated companies. ²⁰²
7		More recently, New Regulatory Finance noted that:
8 9 10 11 12 13 14		The stock price is set by the market, not by regulators. The market-to-book ratio is the end result of regulation, and not its starting point. The view that regulation should set an allowed rate of return so as to produce a market-to-book of 1.0, presumes that investors are irrational. They commit capital to a utility with a market-to-book in excess of 1.0, knowing full well that they will be inflicted a capital loss by regulators. This is certainly not a realistic or accurate view of regulation. ²⁰³
15		The market-to-book ratio is determined by investors in the stock market, and a utility
16		would be foreclosed from attracting capital if regulators were to push the market-to-book
17		ratio to 1.0 while other firms command prices well in excess of 1.0 times book value.
18	Q.	ARE ADJUSTMENTS BASED ON MARET-TO-BOOK RATIOS A COMMON
19		FEATURE IN DETERMINING ALLOWED ROES FOR UTILITIES?
20	A.	No. While arguments regarding the implications of a market-to-book ratio greater than 1.0
21		are not uncommon, I am not aware of a single instance in recent history where a state
22		regulator has approved a market-to-book ratio adjustment in establishing a fair ROE.
23		Meanwhile, FERC has explicitly recognized the fallacy of relying on market-to-book ratios
24		in evaluating cost of equity estimates, labelling such proposals as "academic rhetoric."204

²⁰² Charles F. Phillips, *The Regulation of Public Utilities-Theory and Practice*, Pub. Utils. Reports, Inc. (1993) at 395 (internal quotes omitted).
²⁰³ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 376.
²⁰⁴ See, e.g., Orange & Rockland Utilities, Inc., Initial Decision, 40 FERC ¶ 63,053, 1987 WL 118,352 (F.E.R.C.).

FERC has specifically rejected similar arguments from CURB witness Woolridge, concluding that "[i]f, all else being equal, the regulator sets a utility's ROE so that the utility does not have the opportunity to earn a return on its book value comparable to the amount that investors expect that other utilities of comparable risk will earn on their book equity, the utility will not be able to provide investors the return they require to invest in that utility."²⁰⁵

6 Q. DOES A DIFFERENCE BETWEEN BOOK AND MARKET VALUES ALSO RAISE 7 CONCERNS FOR THE DCF MODEL?

8 A. Yes. A market-to-book ratio above 1.0 also highlights the differences between market
9 realities and the theoretical assumptions underlying the DCF model. As one researcher
10 summarized in the early days before the DCF became a regulatory mainstay:

- 11 We conclude that the [DCF] formula is logically incorrect for public utility 12 regulation whenever stocks are selling at a price in excess of their book equity 13 per share. . . Although it purports to satisfy investor expectations, it is in fact 14 designed to defeat the expectations of any investor who pays a market price in 15 excess of book. It satisfies the expectations only of the investor who buys at 16 book and expects market prices to remain at book.²⁰⁶
- 17 In other words, when the market-to-book ratio exceeds 1.0, applying a market-based
- 18 DCF cost of equity to a book value rate base will understate investors required returns. This
- 19 is not to say that the DCF model is not a useful methodology when considered along with
- 20 other methods. But as this discussion makes clear, Dr. Woolridge's arguments based on
- 21 market-to-book ratios cut both ways.

²⁰⁵ Martha Coakely, et al., Opinion No. 531-B, 150 FERC ¶ 61,165 at P 129 (2015).

²⁰⁶ Walter A. Morton, *The Investor Capitalization Theory of the Cost of Equity Capital*, Land Econ. 248-63 (Aug. 1970).

Q. DR. WOOLRIDGE ASSERTS THAT THE ECAPM "HAS NOT BEEN THEORETICALLY OR EMPIRICALLY VALIDATED IN SCHOLARLY JOURNALS."²⁰⁷ IS THIS AN ACCURATE ASSESSMENT?

- A. No. The ECAPM equation relied on in my testimony is based on the results of a number of
 empirical studies reported in the financial literature, as documented in *New Regulatory* Finance.²⁰⁸
- _

7 Q. HAVE OTHER REGULATORS RELIED ON THE ECAPM?

8 Yes. The ECAPM approach has been recognized by a number of regulatory agencies and A. 9 adopted by numerous witnesses representing a variety of parties in utility rate proceedings. 10 For example, the Staff of the Colorado Public Utilities Commission has noted that, "The 11 ECAPM is an empirical method that attempts to enhance the CAPM analysis by flattening the risk-return relationship."²⁰⁹ The Staff witness in that case relied on the exact same 12 standard ECAPM equation used in my Direct testimony.²¹⁰ The ECAPM approach has been 13 relied on by the Staff of the Maryland Public Service Commission, with one Staff witness 14 noting that "the ECAPM model adjusts for the tendency of the CAPM model to 15

²⁰⁷ Woolridge Direct at 80.

²⁰⁸ Roger A. Morin, *New Regulatory Finance*, Pub. Utils. Reports, Inc. (2006) at 190 (*citing*, Black, Fischer, *Beta and Return*, Journal of Portfolio Management (Fall 1993); Black, Fischer, Jensen, M.C., Scholes, M, *The Capital Asset Pricing Model: Some Empirical Tests*, Studies I the Theory of Capital Markets, Praeger Publishers, Inc. (1972); Fama, E.F. and MacBeth, J.D., *Risk, Returns and Equilibrium:Empirical Tests*, Journal of Political Economy (Sep. 1972); Fama, E.F. and French, K.R., *The Cross-Section of Expected Stock Returns*, Journal of Finance (June 1992); Litzenberger, R.H. and Ramaswamy, K., *The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence*, Journal of Financial Economics (June 1979); Litzenberger, R.H., Ramaswamy, K., and sosin, H., *On the CAPM Approach to the Estimation of a Public Utility's Cost of Equity Capital*, Journal of Finance (May 1980); Pettengill, G.N., Sundaram, S. and Mathur, I., *The Conditional Relation Between Beta and Returns*, Journal of Financial and Quantitative Analysis, Vol. 30, No. 1 (Mar. 1995)).

²⁰⁹ Colorado Public Utilities Commission, Proceeding No. 13AL-0067G, *Answer Testimony and Exhibits of Scott England* (July 31, 2013) at 47.

²¹⁰ *Id.* at 48.

1	underestimate returns for low Beta stocks," and concluding that, "the ECAPM gives a more
2	realistic measure of the ROE than the CAPM model does." ²¹¹ The Regulatory Commission
3	of Alaska has also relied on the ECAPM approach, noting that:
4 5 6 7 8	Tesoro averaged the results it obtained from CAPM and ECAPM while at the same time providing empirical testimony that the ECAPM results are more accurate then [sic] traditional CAPM results. The reasonable investor would be aware of these empirical results. Therefore, we adjust Tesoro's recommendation to reflect only the ECAPM result. ²¹²
9	The New York Department of Public Service also routinely incorporates the results
10	of the ECAPM approach, which it refers to as the "zero-beta CAPM." ²¹³ Similarly, the
11	Montana Public Service Commission has also relied on the ECAPM in past decisions. ²¹⁴
12	The Wyoming Office of Consumer Advocate, an independent division of the Commission,
13	has also relied on this ECAPM formula in estimating the cost of equity for a regulated
14	utility, ²¹⁵ as have witnesses for the Office of Arkansas Attorney General ²¹⁶ and other public
15	authorities. ²¹⁷

²¹¹ Maryland Public Service Commission, Case No. 9299 Direct Testimony and Exhibits of Julie McKenna (Oct. 12, 2012) at 9.

²¹² Regulatory Commission of Alaska, Order No. P-97-004(151) (Nov. 27, 2002) at 145.

²¹³ See, e.g., New York Department of Public Service, Cases 19-E-0065 19-G-0066, Prepared Fully Redacted *Testimony of Staff Finance Panel* (May 2019) at 94-95. ²¹⁴ *Mont. Pub. Serv. Comm'n*, Order No. 7575c at P 114 (Sept. 26, 2018).

²¹⁵ Wyoming Public Service Commission, Docket No. 30011-97-GR-17, Pre-Filed Direct Testimony of Anthony J. Ornelas (May 1, 2018) at 52-53.

²¹⁶ Arkansas Public Service Commission, Docket No. 17-071-U, Direct Testimony of Marlon F. Griffing, PH.D. (May 29, 2018) at 33-35.

²¹⁷ New Mexico Public Regulation Commission, Case No. 22-00270-UT, Direct Testimony of Maureen L. Reno on Behalf of Bernalillo County (Jun. 23, 2023) at 45-46.

Q. DR. WOOLRIDGE ARGUES THAT YOUR RISK PREMIUM APPROACH "IS A GAUGE OF *COMMISSION* BEHAVIOR, NOT *INVESTOR* BEHAVIOR."²¹⁸ IS THERE ANY MERIT TO THIS CLAIM?

4 A. No. The authorized ROEs for electric utilities come in the context of rate hearings such as 5 this one, and embody careful consideration of current and expected capital market 6 conditions. Contrary to Dr. Woolridge's statement, allowed ROEs are a direct reflection of 7 investor requirements because that is what the individual regulatory commissions are attempting to gauge each time they reach a decision. In fact, authorized ROEs are closely 8 9 followed by investors, and provide a direct signal that influences their expectations and 10 required rates of return. With respect to risk premiums based on allowed ROEs, such as the 11 approach relied on in my testimony, Dr. Morin, the author of New Regulatory Finance, 12 concluded:

13Investors do indeed take into account returns granted by various regulators in14formulating their risk and return expectations, as evidenced by the availability15of commercial publications disseminating such data, including Value Line and16SNL Financial (formerly Regulatory Research Associates).

17 The data I use in my risk premium study are spread across many decades, across 18 many states, and considers many ROE approaches; there are literally hundreds of individual 19 commission decisions contained in the underlying averages. When considered over a long 20 historical horizon and in light of current capital market conditions, this data provides 21 meaningful insight into current investor expectations of a reasonable ROE.

²¹⁸ Woolridge Direct at 103 (emphasis in original).

²¹⁹ Prepared Direct Testimony of Roger A. Morin, Ph.D. on Behalf of San Diego Gas & Electric Company, California Public Utilities Commission, Application No. A.12-04-015, at 56 (Apr. 20, 2012) (footnotes omitted).

I	Q.	HAVE OTHER REGULATORS ADOPTED A SIMILAR METHODOLOGY BASED
2		ON RISK PREMIUMS CALCULATED AGAINST PUBLIC UTILITY BOND
3		YIELDS?
4	A.	Yes. The Mississippi Public Service Commission relies on the same approach applied in my
5		Direct testimony to establish the cost of equity under formula rate plans approved in that
6		state. ²²⁰
7	Q.	DR. WOOLRIDGE IS CRITICAL OF YOUR EXPECTED EARNINGS
8		APPROACH. ²²¹ WHAT IS YOUR RESPONSE?
9	A.	I addressed the majority of Dr. Woolridge's complaints earlier in my response to Staff
10		Witness Gatewood and CURB witness Woolridge's contentions regarding the significance
11		of market-to-book ratios.
12		A research paper by Dr. Aswath Damodaran—a researcher cited by Dr.
13		Woolridge 222 —emphasized the importance of considering returns on book value in
14		evaluating performance and alternative investments. ²²³ Contradicting Dr. Woolridge's
15		conclusion that returns on book value are unrelated to an evaluation of investors' expected
16		return on investment, Dr. Damodaran noted that, "[w]hile returns on equity and capital are
17		based upon accounting earnings and capital, and are designed to measure the quality of a
18		firm's existing investments, they are correlated with returns you would make investing in

 ²²⁰ See, e.g., Entergy Mississippi, Inc., Formula Rate Plan Rider Schedule FRP-7, <u>https://cdn.entergy-mississippi.com/userfiles/content/price/tariffs/eml_frp.pdf</u> (last visited May 19, 2025).
 ²²¹ Woolridge Direct at 104-106.

²²² Id. at 83 and Exhibit JRW-6, pages 5 and 6.

²²³ Aswath Damodaran, *Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE): Measurement and Implications*, New York University, Stern School of Business (July 2007).

the publicly traded equity of the firm."²²⁴ A number of other peer-reviewed research studies
 also confirm the relationship between accounting-based performance measures, such as the
 return on book equity, and market-based measures such as stock returns.²²⁵

4 As Dr. Damodaran stated, "we can safely conclude that the key number in a valuation 5 is not the cost of capital that we assign a firm, but the return earned on capital that we attribute to it."226 This is exactly what the expected earnings method seeks to measure. If 6 7 the allowed ROE is insufficient to provide a return on the book value of a utility's investment 8 as compared with what investors expect other utilities of comparable risk to earn, the utility's 9 ability to compete for capital will be undermined. The expected earnings approach provides 10 a measure of this necessary return as one component of the evaluation of a just and 11 reasonable ROE.

12 Q. DR. WOOLRIDGE CONTENDS THAT THE EXPECTED EARNINGS APPROACH

13

IS CIRCULAR.²²⁷ IS THIS CONCERN JUSTIFIED?

A. No. While expected earned rates of return for utilities are certainly influenced by the returns
 authorized by regulators, these allowed ROEs themselves are premised on a variety of
 information, which presumably would include the results of market-based methods, such as
 the DCF and CAPM approaches. Regulatory agencies routinely consider the results of

²²⁴ *Id.* at 49.

²²⁵ See, e.g., Kenneth Lehn, Anil Makhija, EVA, Accounting Profits, and CEO Turnover: An Empirical Examination, 1985-1994, Journal of Applied Corporate Finance, Vol 10.2 (Summer 1997) at 90 (documenting a significant, positive correlation between ROE and stock returns); D. Craig Nichols, James M. Wahlen, How Do Earnings Numbers Relate to Stock Returns? A Review of Classic Accounting Research with Updated Evidence, Accounting Horizons, Vol 18, No. 4 (Dec. 2004) at 272–274, 285 (documenting a significant positive relationship between stock returns and earnings relative to assets measured at book value).

²²⁶ Aswath Damodaran, *Return on Capital (ROC), Return on Invested Capital (ROIC) and Return on Equity (ROE):* Measurement and Implications, New York University, Stern School of Business (July 2007).

²²⁷ Woolridge Direct at 106.

1 multiple financial models in their deliberations. As a result, it is wrong to suggest that 2 reference to projected earned returns on book value as one facet of the Commission's fact-3 finding is somehow circular.

4 Moreover, given the importance of the return on equity component of a utility's 5 revenue requirements, virtually every measure of future financial performance-including 6 cash flow measures, profitability, and dividend policies-is impacted by the ROE 7 established by regulators. As a result, the projections of earned returns used to apply the 8 expected earnings approach are no more susceptible to concerns over regulatory influence 9 (past, present, or future) than the growth rates used to apply the DCF model. If analysts' 10 estimates are rendered unusable because they are, in part, a function of expectations 11 regarding future allowed ROEs, then under Dr. Woolridge's own logic, the DCF model must 12 be rejected as well. This is misguided and the Commission should dismiss such arguments.

13 Q. DR. WOOLRIDGE CRITICIZES YOUR USE OF A LOW-RISK GROUP OF NON-

UTILITY COMPANIES AS AN ROE CHECK OF REASONABLENESS.²²⁸ ARE

14

15

HIS CRITICISMS JUSTIFIED?

16 A. No. The implication that an estimate of the required return for firms in the competitive sector 17 of the economy is not useful in determining the appropriate return to be allowed for rate-18 setting purposes is wrong and inconsistent with reality, investor behavior, and the *Bluefield* 19 and *Hope* decisions. In fact, returns in the competitive sector of the economy form the very 20 underpinning for utility ROEs because regulation purports to serve as a substitute for the 21 actions of competitive markets.

²²⁸ *Id.* at 101.

1	The cost of capital is an opportunity cost based on the returns that investors could
2	realize by putting their money in other alternatives, which include all other securities
3	available in the stock, bond or money markets. Consistent with this view, Dr. Woolridge
4	noted the Supreme Court's economic standards and concluded that the fair rate of return on
5	equity should be "comparable to returns investors expect to earn on investments with similar
6	risks." ²²⁹ The cost of capital is an opportunity cost based on the returns that investors could
7	realize by putting their money in other alternatives, and the total capital invested in utility
8	stocks is only the tip of the iceberg of total common stock investment.
9	True enough, utilities are sheltered from competition, but they undertake other
10	obligations and lose the ability to set their own prices and decide when to exit a market. The
11	Supreme Court has recognized that it is the degree of risk, not the nature of the business,
12	which is relevant in evaluating an allowed ROE for a utility.

13 Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

14 A. Yes.

²²⁹ *Id.* at 3.

AFFIDAVIT OF ADRIEN M. MCKENZIE

State of Texas County of Travis

))ss)

I, ADRIEN M. MCKENZIE, being first duly sworn on oath, depose and state that I am the same Adrien M. McKenzie identified in the foregoing Rebuttal Testimony; that I have caused the foregoing Rebuttal Testimony to be prepared and am familiar with the contents thereof; and that the foregoing Rebuttal Testimony is true and correct to the best of my knowledge, information, and belief as of the date of this Affidavit.

Adrien M. McKenzie

Subscribed and sworn to before me, A Notary Public, in and for said County and State, this 2^{19} day of <u>May</u>, 2025.

2/25/2027

luch

Notary Pub/ic

My Commission expires:

BRUCE HARCUM FAIRCHILD Notary ID #131906507 My Commission Expires February 25, 2027

IMPLIED COST OF EQUITY

NATIONAL ALLOWED ROES

		Natural Gas
1	Allowed ROE (2020 - Q1 2025)	9.61%
2	Average Baa UtilityYield (2020 - Q1 2025)	4.74%
3	Implied Risk Premium	4.87%
4	April 2025 Baa Utility Yield	<u>6.11%</u>
5	Change in Bond Yield	1.37%
6	Risk Premium/Interest Rate Relationship	-0.4744
7	Adjustment to Risk Premium	-0.65%
8	Adjusted Risk Premium	4.22%
9	Adjusted ROE	10.33%

1 S&P Global Market Intelligence, RRA Regulatory Focus (Apr. 25, 2025).

- 2 Moody's Credit Trends.
- 3 (1) (2).
- 4 Moody's Credit Trends.
- 5 (4) (2).
- 6 KGS Direct Exhibit AMM-8 at 1.
- 7 (5) x (6).
- 8 (3) + (7).
- 9 (4) + (8).

IMPLIED COST OF EQUITY

KCC DETERMINED ALLOWED ROES

		Atmos	KCPL	Atmos	KCPL	KCPL	Westar	Westar	KGS
1	Order Date	2/24/2020	9/10/2015	9/4/2014	12/13/2012	11/22/2010	12/28/2005	7/25/2001	4/15/1996
1	Approved ROE	9.10%	9.30%	9.10%	9.50%	10.00%	10.00%	11.02%	10.50%
2	Baa UtilityYield	<u>3.51%</u>	<u>5.44%</u>	<u>4.70%</u>	<u>4.66%</u>	<u>5.94%</u>	<u>6.35%</u>	<u>7.78%</u>	<u>8.19%</u>
3	Implied Risk Premium	5.59%	3.86%	4.40%	4.84%	4.06%	3.65%	3.24%	2.31%
4	April 2025 Baa Utility Yield	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>	<u>6.11%</u>
5	Change in Bond Yield	2.60%	0.67%	1.41%	1.45%	0.17%	-0.24%	-1.67%	-2.08%
6	Risk Premium/Interest Rate Relationship	<u>-0.4744</u>	<u>-0.4744</u>	<u>-0.4744</u>	<u>-0.4744</u>	<u>-0.4744</u>	<u>-0.4744</u>	-0.4744	-0.4744
7	Adjustment to Risk Premium	-1.23%	-0.32%	-0.67%	-0.69%	-0.08%	0.11%	0.79%	0.99%
8	Adjusted Risk Premium	4.36%	3.54%	3.73%	4.15%	3.98%	3.76%	4.03%	3.30%
9	Adjusted ROE	10.47%	9.65%	9.84%	10.26%	10.09%	9.87%	10.14%	9.41%

AVERAGE

9.97%

1 Gatewood Direct at 26.

- 2 Gatewood Direct at 26.
- 3 (1) (2).
- 4 Moody's Credit Trends.
- 5 (4) (2).
- 6 KGS Direct Exhibit AMM-8 at 1.
- 7 (5) x (6).
- 8 (3) + (7).
- 9 (4) + (8).