

**BEFORE THE  
NORTH CAROLINA UTILITIES COMMISSION**

**DOCKET NO. G-39, SUBS 46 and 47**

**EXHIBIT NO. DH-006**

**PREPARED REBUTTAL TESTIMONY OF**

**DAVID J. HAAG**

**ON BEHALF OF**

**CARDINAL PIPELINE COMPANY, LLC**

**June 27, 2022**

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ON BEHALF OF  
CARDINAL PIPELINE COMPANY, LLC**

1 **Q.1 Please state your name and employer.**

2 A. My name is David J. Haag. I am President and Chief Executive Officer of Brown,  
3 Williams, Moorhead & Quinn, Inc. (“BWMQ”), a nationally recognized energy  
4 consulting firm based in the Washington, D.C. area.

5 **Q.2 Did you previously file testimony in this proceeding?**

6 A. Yes. I filed prepared direct testimony (Exhibit No. DH-001) along with four  
7 supporting exhibits (Exhibit Nos. DH-002 through DH-005) on behalf of Cardinal  
8 Pipeline Company, LLC (“Cardinal”) in this proceeding on March 15, 2022.

9 **Q.3 Please provide a brief overview of the purpose and scope of your rebuttal**  
10 **testimony.**

11 A. I am herewith providing rebuttal testimony on behalf of Cardinal. The purpose of  
12 this rebuttal testimony is to respectfully respond to several of the points contained  
13 in the testimony of Mr. John R. Hinton, who submitted testimony on June 10, 2022  
14 in this proceeding on behalf of the Public Staff of the North Carolina Utilities  
15 Commission. Mr. Hinton’s testimony is focused on the overall cost of capital that  
16 should be utilized for establishing rates for Cardinal in this proceeding.

1 **Q.4 Please summarize Mr. Hinton’s recommendations regarding the cost of capital**  
2 **for Cardinal.**

3 A. Mr. Hinton recommends that, for rate making purposes, Cardinal utilize a cost of  
4 debt of 4.06% and a rate of return on equity (“ROE”) of 9.48%, both applied to a  
5 hypothetical capital structure comprised of 48.04% long term debt and 51.96%  
6 common equity, resulting in an overall weighted cost of capital of 6.88%.

7 These amounts are referred to as hypothetical because as of May 2022,  
8 Cardinal is 100% equity financed by its owners. In these circumstances, an imputed  
9 (or hypothetical) capital structure and cost of debt is generally used to ensure that  
10 just and reasonable rates are determined.

11 However, as discussed in detail below, Mr. Hinton’s recommendations  
12 result in an overall weighted average cost of capital for Cardinal that is both too  
13 low and not reflective of the underlying risks of the pipeline, particularly in light of  
14 current financial market conditions.

15 **Q.5 How has Mr. Hinton calculated his recommended cost of capital for Cardinal?**

16 A. With regards to the cost of debt, Mr. Hinton recommends that Cardinal’s  
17 hypothetical cost of debt be determined by adding a 135-basis point yield spread to  
18 the current five-year treasury yield, which as of May 27, 2022 was 2.71%, yielding  
19 a cost of debt of 4.06%. Mr. Hinton explains that this approach incorporates the  
20 effective yield spread in effect at the time Cardinal entered into its most recent  
21 tranche of approved long-term debt in May 2017.

1 Mr. Hinton has determined his recommended 9.48% cost of equity for  
2 Cardinal by averaging his 9.64% Risk Premium estimate with his average  
3 discounted cash flow (“DCF”) model estimate of 9.33%, as shown in Hinton  
4 Exhibit 8. Mr. Hinton then undertakes a Comparable Earnings analysis as a  
5 reasonableness check on the results of his DCF and Risk Premium estimates and  
6 concludes that the recommended 9.48% cost of equity is reasonable.

7 Finally, Mr. Hinton recommends a hypothetical capital structure comprised  
8 of 48.04% long term debt and 51.96% common equity, based on the average  
9 capitalization ratios for local natural gas distribution companies reported by  
10 Regulatory Research Associates in 2020, 2021, and the first quarter of 2022, as  
11 shown in Hinton Exhibit 2.

12 **Q.6 Does Mr. Hinton discuss current financial market conditions?**

13 A. Yes. For example, Mr. Hinton discusses the recent resurgence of inflation and  
14 related increases in interest rates, including recent increases in U.S. Treasury bond  
15 yields and long-term “A” rated utility bonds.<sup>1</sup>

16 **Q.7 Does increased inflation impact the cost of capital required by a regulated**  
17 **pipeline entity?**

18 A. Yes. In general, investors require higher returns from equity investments than from  
19 investments in corporate bonds or debt. This is because equity investments have  
20 higher risks than debt investments and are also more volatile than debt

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<sup>1</sup> For example, see Pages 3 -5 of Mr. Hinton’s prepared testimony.

1 investments.<sup>2</sup> To maintain this parity in the financial markets, the ROEs for  
2 pipelines are therefore also expected to rise as interest rates rise due to increasing  
3 inflation.

4 This is important because in *State ex rel. Utils. Comm'n v. Cooper*, 366 N.C.  
5 484, 739 S.E.2d 541 (2013), the Court held that the Commission must consider  
6 changing economic conditions and the impact of those changes when approving a  
7 return on equity.

8 **Q.8 Are the franchise areas served by Cardinal's Local Distribution Company**  
9 **customers currently facing adverse economic conditions that the Commission**  
10 **should be aware of?**

11 A. Not to my knowledge. As testified by Mr. Hinton, the United States Bureau of  
12 Economic Analysis data for the service areas of Piedmont Natural Gas Company,  
13 Inc. ("Piedmont") and Public Service Company of North Carolina, Inc. ("PSNC")  
14 indicate that from 2017 to 2020, per capita total personal income grew at an average  
15 annual growth rate of 4.3%. Overall per capita income for North Carolina increased  
16 7.9% in 2021. In addition, the United States Bureau of Labor Statistics reports that  
17 North Carolina's unemployment rate fell to just 3.4% in April 2022.

18 These macroeconomic indicators suggest that there are currently no adverse  
19 economic conditions that would arguably require a downward adjustment to  
20 Cardinal's approved rate of return on equity.

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<sup>2</sup> For a general discussion on debt and equity investments see: <https://finance.zacks.com/differences-between-debt-equity-investments-3035.html>

1 **Q.9 Is 4.06% an appropriate hypothetical cost of debt for Cardinal at this time?**

2 A. No. The hypothetical debt cost is intended to be a proxy for the cost of debt that  
3 Cardinal would actually incur if were to enter into a new long-term debt  
4 arrangement today. As discussed below, Mr. Hinton's hypothetical debt cost of  
5 4.06% is therefore too low. In his direct testimony, Mr. Hinton calculates  
6 Cardinal's recommended cost of debt by adding a 135-basis point yield spread to  
7 the current five-year treasury yield, which as of May 27, 2022 was 2.71%, yielding  
8 the recommended cost of debt of 4.06%. Mr. Hinton explains that this approach  
9 incorporates the effective yield spread in effect at the time Cardinal entered into its  
10 most recent tranche of approved long-term debt in May 2017.

11 As of June 14, 2022, the five-year treasury yield has increased to 3.61%,  
12 with this rate expected to continue to rise in the short-term.<sup>3</sup> Thus, even if Cardinal  
13 were to utilize Mr. Hinton's recommended methodology to determine its  
14 hypothetical cost of debt (i.e. for the sake of argument), the appropriate cost of debt  
15 as of June 14, 2022 would be 4.96%.

16 Furthermore, consider that in 1998, prior to Cardinal's more recent long-  
17 term debt agreement which matured in May 2022, Cardinal issued \$48,000,000 in  
18 Senior Secured Notes with an interest rate of 7.30%, with the term of those notes  
19 being 10-years. The average ten-year treasury yield for 1998 was 5.15%<sup>4</sup>, and  
20 therefore Cardinal's cost of debt was 215-basis points higher than the comparable

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<sup>3</sup> For example, see: <https://www.depositaccounts.com/blog/fed-deposit-interest-rate-predictions/>

<sup>4</sup> See: <https://www.macrotrends.net/2522/10-year-treasury-bond-rate-yield-chart>

1 average ten-year treasury yield at the time, further supporting that Mr. Hinton's  
2 proposed 135-basis point adder is insufficient, particularly under current market  
3 conditions.

4 The average five-year treasury rate has risen every month for the past 12  
5 months, and entering into a new long-term debt arrangement today is certainly not  
6 an instantaneous process. Therefore it is highly unlikely that Cardinal would be  
7 able to secure long-term debt at Mr. Hinton's recommended rate of 4.06%,  
8 especially given the current rising interest rate environment.

9 Accordingly, I continue to recommend that Cardinal utilize the average  
10 actual cost of debt observed across the core proxy group entities that I have  
11 recommended in my direct testimony, namely 5.25%, as reflected in my Exhibit  
12 No. DH-005. This hypothetical cost of debt is based not on current rising interest  
13 rates but rather on the actual reported debt costs as of December 2021 of the much  
14 larger and more diversified core proxy group entities (making this a conservative  
15 estimate). Using the actual average cost of debt from the core proxy group is  
16 appropriate in light of the fact that Cardinal does not currently have any stand-alone  
17 debt and will therefore be using an imputed capital structure.

18 **Q.10 Is 9.48% an appropriate rate of return on equity for Cardinal at this time?**

19 A. No. For the reasons I discuss below, amongst others, Mr. Hinton's recommended  
20 9.48% rate of return on equity is also too low for Cardinal at this time. As testified  
21 by Mr. Hinton, if the return is set too low, then "the stockholders will suffer because

1 a declining value of the underlying property will be reflected in a declining value  
2 of the utility's equity shares".<sup>5</sup>

3 However, in spite of this, Mr. Hinton's recommended rate of return on  
4 equity for Cardinal is nevertheless even lower than the recently approved ROEs for  
5 the two local distribution companies ("LDCs") served by Cardinal. Both Piedmont  
6 and PSNC have current authorized rates of return on equity of 9.60%, which is  
7 twelve basis points higher than the rate proposed for Cardinal.<sup>6</sup>

8 **Q.11 Why is Mr. Hinton's recommended rate of return on equity so low?**

9 A. From a mathematical perspective, both Mr. Hinton and I have calculated our  
10 recommended rates of return on equity primarily through the use of a DCF model,  
11 albeit with a number of differences in the way we have structured and utilized the  
12 model. However, the DCF calculations are based on materially different proxy  
13 groups. Mr. Hinton has used a group of nine companies classified by Value Line  
14 as "Natural Gas Distribution Utilities" whereas the proxy group that I have utilized  
15 is comprised of entities that have material interests in interstate natural gas  
16 pipelines, and are classified by Value Line as "Oil/Gas Distribution" companies. I  
17 note that Cardinal is not actually a natural gas distribution utility, but is rather an  
18 intrastate natural gas pipeline.

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<sup>5</sup> See Page 8, Line 22 through Page 9, Line 3 of Mr. Hinton's direct testimony.

<sup>6</sup> See <https://publicstaff.nc.gov/public-staff-divisions/economic-research-division/approved-rate-return>



1 **Q.12 How did you establish your proxy group for Cardinal?**

2 A. My proxy group is comprised of a number of publicly traded entities that own  
3 material levels of regulated interstate natural gas pipelines in addition to owning  
4 intrastate pipeline assets. I have established a proxy group using interstate natural  
5 gas pipelines as at this time there are no stand-alone publicly traded intrastate  
6 pipeline companies that can be directly used to form a comparable proxy group for  
7 Cardinal. Many of the companies that own intrastate pipelines are also heavily  
8 involved in other upstream activities including: exploration and production, gas  
9 gathering and processing, as well as various gas treatment processes.

10 To ensure that the proxy group companies I have selected exhibit risks that  
11 are comparable to Cardinal, my prepared direct testimony discusses the overall  
12 risks of each of the proxy group entities as compared to Cardinal.

13 **Q.13 How has Mr. Hinton established his proxy group?**

14 A. Mr. Hinton states on Page 24 of his testimony that he identified a subset of nine  
15 companies from the list of natural gas distribution utility companies identified by  
16 Value Line. These nine entities are listed in Hinton Exhibit 4. However Mr. Hinton  
17 does not explain with any specificity why these nine entities are of comparable risk  
18 to Cardinal, nor does he provide any detailed risk analysis that compares the risks  
19 faced by Cardinal with each of these nine companies.

20 Further, although Mr. Hinton utilized a nine-member proxy group from the  
21 Value Line natural gas distribution utility companies, there are currently fourteen  
22 entities identified by Value Line in this category. While it is questionable why

1 some of these fourteen entities are classified by Value Line as natural gas utility  
2 companies, Mr. Hinton nevertheless does not explain why he excluded some of  
3 these entities. For example, two entities that were excluded include Corning  
4 Natural Gas Holding Company and RGC Resources, Inc.

5 Corning Natural Gas Holding Company has three utility subsidiaries.  
6 Corning Natural Gas is a local distribution company with approximately 15,000  
7 natural gas customers. Gas deliveries are made throughout the Southern Tier and  
8 central regions of New York State. Pike County Light & Power is a combination  
9 gas and electric utility serving approximately 6,000 customers in Pike County, PA.  
10 Leatherstocking Gas is a gas utility serving approximately 300 customers in the  
11 counties of Susquehanna and Bradford, PA.

12 RGC Resources Inc. is a public utility holding company providing energy  
13 and related products and services through its operating subsidiaries Roanoke Gas  
14 Company and RGC Midstream, LLC. Roanoke Gas provides natural gas service  
15 to more than 60,000 customers in the greater Roanoke Valley of Virginia. RGC  
16 Midstream owns a 1 percent interest in the Mountain Valley Pipeline project.

17 Even if it were to be determined that LDC's should be included in the proxy  
18 group for Cardinal, more details are still required to determine the risk  
19 comparability of each of these specific entities, and their levels of risk relative to  
20 Cardinal, prior to utilizing any of these fourteen entities to estimate the proper rate  
21 of return on equity for Cardinal.

1 **Q.14 Is a proxy group composed solely of Natural Gas Distribution utilities more**  
2 **comparable to Cardinal in terms of overall risk than a proxy group of**  
3 **interstate natural gas pipeline companies?**

4 A. No. Although Mr. Hinton maintains that the investment risk profile of Cardinal is  
5 more akin to a local distribution company than to an interstate pipeline company,  
6 there are a number of reasons why Cardinal, as an intrastate natural gas pipeline,  
7 has risks that are greater than an LDC, rendering it more closely comparable to an  
8 interstate natural gas pipeline. In my direct testimony, I have discussed the  
9 significant reasons supporting the conclusion that Cardinal's risks are not  
10 comparable to those of an LDC, including the fact that unlike LDCs, Cardinal does  
11 not have a dedicated service territory.

12 In addition to the multiple reasons discussed in my direct testimony, LDC  
13 distribution lines are typically operated at much lower pressures than Cardinal's  
14 transmission lines. Cardinal's transmission lines are subject to a Maximum  
15 Allowed Operating Pressure of 1,000 psig, which is comparable to many large  
16 interstate natural gas pipelines. In comparison, at LDC gate stations, pressure is  
17 reduced to between 0.25 and 200 psig which is a significant difference from the  
18 operations of Cardinal. Higher operating pressures present greater operating risks.

19 LDCs are also not subject to the same Pipeline and Hazardous Materials  
20 Safety Administration pipeline integrity requirements as Cardinal. Gas  
21 transmission pipeline integrity management programs are governed by 49 CFR Part  
22 192, Subpart O. Distribution pipeline integrity management programs are governed  
23 by 49 CFR Part 192, Subpart P, another significant difference.

1           The State of North Carolina also offers certain incentive programs  
2 exclusively to local distribution companies. For example, in North Carolina, LDCs  
3 can recover even the economically infeasible portion of a line extension through its  
4 rates for line extensions, provided that they invest at least \$200 million in  
5 improvements and employ at least 1,500 employees. Provided the project is  
6 approved, the economically infeasible costs of the infrastructure are permitted to  
7 be recovered in a rate rider.<sup>7</sup> I am not aware of any such incentive program being  
8 available to Cardinal or to an interstate natural gas pipeline in North Carolina.

9           LDCs typically require a rate of return on equity that is lower than that  
10 required for natural gas pipelines, as LDC's face risks that are generally lower than  
11 natural gas pipelines. However, the risks faced by Cardinal are clearly greater than  
12 those faced by an average LDC, and as such, a proxy group of interstate natural gas  
13 pipeline entities, as I have complied in my direct testimony, provides for a more  
14 risk appropriate proxy group to determine a just and reasonable rate of return on  
15 equity for Cardinal at this time.

16 **Q.15 Do you have any concerns with the use of a Comparable Earnings analysis for**  
17 **a regulated pipeline entity?**

18 A. Yes. Although Mr. Hinton does not rely directly on the results of his Comparable  
19 Earnings Analysis, there are a number of fundamental concerns with utilizing a  
20 Comparable Earnings Analysis for a regulated pipeline entity such as Cardinal.

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<sup>7</sup> <https://edpnc.com/incentives/natural-gas-infrastructure/>

1           As a starting point, the Comparable Earnings Analysis is a method of  
2 calculating the earnings that an investor expects to receive on the book value of a  
3 particular stock by examining actual past earned returns. However, a regulated  
4 pipeline (and in particular an LDC), is generally expected to earn its allowed ROE,  
5 on average. Thus, by definition, a review of past accounting returns would be  
6 expected to show that the allowed ROE was achieved, at least on average. As such,  
7 setting a pipelines rate of return on equity based upon its realized accounting returns  
8 becomes circular in that the return becomes a “self-fulfilling prophecy” regardless  
9 of changes in operating, market, or industry conditions. Changes in macro-  
10 economic industry risks are not captured in a Comparable Earnings Analysis, as the  
11 model relies on historical realized returns.

12 **Q.16 Is Mr. Hinton’s recommended hypothetical capital structure appropriate for**  
13 **Cardinal at this time?**

14 A. No. Mr. Hinton has recommended a hypothetical capital structure comprised of  
15 48.04% long term debt and 51.96% common equity, reflecting the average  
16 capitalization ratios for local natural gas distribution companies as reported by  
17 Regulatory Research Associates in 2020, 2021, and the first quarter of 2022, as  
18 shown in Hinton Exhibit 2.

19           It is important to understand that there is a relatively large variance  
20 contained in the data set of common equity ratios shown in Hinton Exhibit 2, which  
21 has a minimum value of 46.26% and a maximum value of 60.12%. The standard

1 deviation of the data set is 3.04284, which tells us that the maximum observation  
2 is nearly three standard deviations away from the mean value of 51.96%.<sup>8</sup>

3 The fact that the data set contains such a significant dispersion tells us that,  
4 among LDCs there are material differences in the capital structures approved by  
5 the various State Commissions, clearly reflecting different underlying levels of  
6 relative risk for the various LDC entities. Thus, if the North Carolina Utilities  
7 Commission were to utilize Mr. Hinton's approach of assigning Cardinal a  
8 hypothetical capital structure based on the approved capital structures of the various  
9 LDC entities reflected in Hinton Exhibit 2, it would be necessary to first determine  
10 the relative risks of Cardinal as compared to each of the LDCs contained in the list,  
11 to ensure that the recommended hypothetical capital structure for Cardinal produces  
12 an overall weighted average cost of capital that is just and reasonable given  
13 Cardinals unique risks that I have discussed above and in my direct testimony.

14 In light of the fact that Cardinal will now be financed entirely by equity  
15 from its corporate parents, I have recommended that Cardinal utilize an imputed  
16 capital structure of 60% equity and 40% debt for rate-making purposes at this time.  
17 This capital structure is consistent with Cardinal's last rate filing, which was  
18 comprised of 59.23% equity and 40.77% long-term debt, which I have rounded to  
19 60% equity and 40% debt.

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<sup>8</sup> A standard deviation is a measure of how dispersed the data is in relation to the average. In a normal distribution, approximately 68% of all values are within one standard deviation of the average, 95% of all values are within two standard deviations of the average, and 99.7% of values are within three standard deviations of the average.

1           A 60% equity ratio would also correctly place Cardinal near the top of the  
2 range of the LDC entities contained in Hinton Exhibit 2. Given that the Cardinal  
3 system has risks that are greater than that of an average LDC entity, the data  
4 contained in Hinton Exhibit 2 also supports that my recommendation is reasonable.

5 **Q.17 Please summarize your findings and recommendations.**

6 A.       After a careful review, there is nothing in Mr. Hinton's testimony that would cause  
7 me to conclude that the overall cost of capital recommendations contained in my  
8 prepared direct testimony require any downward adjustments at this time,  
9 particularly in light of the current macro-economic environment of increasing  
10 inflation.

11           Therefore, I continue to recommend that Cardinal should reflect an after-  
12 tax ROE of 11.04% and a cost of debt of 5.25% for its cost of capital in this  
13 proceeding. This recommended ROE is appropriate for Cardinal at this time given  
14 the relative level of risks that Cardinal faces as compared to the much larger and  
15 more diversified core proxy group entities.

16           My recommended hypothetical debt cost of 5.25% reflects the average  
17 actual cost of debt of the entities included in the core proxy group as of December  
18 2021.

19           With regards to an appropriate capital structure, given that Cardinal will not  
20 be issuing any stand-alone replacement debt and instead will be financed entirely  
21 by equity from its corporate parents, I recommend that Cardinal continue to utilize

1 an imputed capital structure of 60% equity and 40% debt for rate-making purposes  
2 at this time, as this is consistent with Cardinal's relative level of risks.

3 **Q.18 Does this conclude your prepared Rebuttal Testimony?**

4 A. Yes, it does.