

**I&E Statement No. 2**  
**Witness: Christopher Henkel**

**PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**v.**

**Peoples Natural Gas Company LLC**

**Docket Nos. R-2018-3006818**

**Direct Testimony**

**of**

**Christopher M. Henkel**

**Bureau of Investigation & Enforcement**

**Concerning:**

**Rate of Return**

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1 **INTRODUCTION OF WITNESS**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Christopher M. Henkel. My business address is Pennsylvania Public Utility  
4 Commission, Commonwealth Keystone Building, 400 North Street, Harrisburg, PA  
5 17120.

6

7 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

8 A. I am employed by the Pennsylvania Public Utility Commission (Commission) in the  
9 Bureau of Investigation & Enforcement (I&E) as a Fixed Utility Financial Analyst.

10

11 **Q. WHAT IS YOUR EDUCATIONAL AND EMPLOYMENT EXPERIENCE?**

12 A. My educational and professional background is set forth in Appendix A, which is  
13 attached.

14

15 **Q. PLEASE DESCRIBE THE ROLE OF I&E IN RATE PROCEEDINGS.**

16 A. I&E is responsible for protecting the public interest in proceedings before the  
17 Commission. The I&E analysis and testimony in this proceeding is based on its  
18 responsibility to represent the public interest. This responsibility refers to balancing the  
19 interests of the ratepayers, the regulated utility, and the regulated community as a whole.

1 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

2 A. The purpose of my direct testimony is to address the claimed rate of return, including the  
3 cost of common equity, and the overall fair rate of return for Peoples Natural Gas  
4 Company LLC (Peoples or Company).

5

6 **Q. DOES YOUR DIRECT TESTIMONY INCLUDE AN EXHIBIT?**

7 A. Yes. I&E Exhibit No. 2 contains schedules related to my testimony.

8

9 **BACKGROUND**

10 **Q. WHAT IS THE GENERAL DEFINITION OF RATE OF RETURN IN THE**  
11 **CONTEXT OF A RATE CASE?**

12 A. Rate of return is the amount of revenue an investment generates in the form of net income  
13 and is usually expressed as a percentage of the amount of capital invested over a given  
14 period of time. Rate of return is one of the components of the revenue requirement  
15 formula.

16

17 **Q. WHAT IS THE REVENUE REQUIREMENT FORMULA?**

18 A. The revenue requirement formula used in base rate cases is as follows:  $RR =$   
19  $E + D + T + (RB \times ROR)$

20 Where:

21  $RR =$  Revenue Requirement

22  $E =$  Operating Expenses

23  $D =$  Depreciation Expense

1                    T        =        Taxes  
2                    RB       =        Rate Base  
3                    ROR    =        Overall Rate of Return

4                    In the above formula, the rate of return is expressed as a percentage. The calculation of  
5                    that rate is independent of the determination of the appropriate rate base value for  
6                    ratemaking purposes. The appropriate total dollar return is therefore dependent upon the  
7                    proper computation of the rate of return and the proper valuation of a company's rate  
8                    base.

9  
10 **Q.        WHAT CONSTITUTES A FAIR AND REASONABLE OVERALL RATE OF**  
11 **RETURN?**

12 A.        A fair and reasonable overall rate of return is one that will allow the utility the  
13            opportunity to recover costs prudently incurred for all classes of capital used to finance  
14            the rate base during the prospective period in which its rates will be in effect.

15                    *The Bluefield Water Works & Improvements Co. v. Public Service Comm. of West*  
16                    *Virginia*, 262 U.S. 679, 692-93 (1923), and the *FPC v. Hope Natural Gas Co.*, 320 U.S.  
17                    591, 603 (1944) cases set forth the principles that are generally accepted by regulators  
18                    throughout the country as the appropriate criteria for measuring a fair rate of return:

- 19                    1. A utility is entitled to a return similar to that being earned by other enterprises with  
20                    corresponding risks and uncertainties, but not as high as those earned by highly  
21                    profitable or speculative ventures;  
22                    2. A utility is entitled to a return level reasonably sufficient to assure financial  
23                    soundness;

- 1           3. A utility is entitled to a return sufficient to maintain and support its credit and raise  
2           necessary capital; and
- 3           4. A fair return can change (increase or decrease) along with economic conditions and  
4           capital markets.

5

6 **Q. EXPLAIN HOW THE OVERALL RATE OF RETURN IS TRADITIONALLY**  
7 **CALCULATED IN BASE RATE PROCEEDINGS.**

8 A. In base rate proceedings, the overall rate of return is traditionally calculated using the  
9 weighted average cost of capital method. To calculate the weighted average cost of  
10 capital, a company's capital structure must first be determined by comparing the  
11 percentage of each capitalization component which has financed rate base to total capital.  
12 In this proceeding, the capital components consist of long-term debt, short-term debt, and  
13 common equity. Next, the effective cost rate of each capital structure component must be  
14 determined. The historical component of the cost rate of debt can be computed  
15 accurately and any future debt issuances are based on estimates. The cost rate of  
16 common equity is not fixed and is more difficult to measure, necessitating the use of a  
17 proxy group as discussed later in this testimony. Next, each capital structure component  
18 percentage is multiplied by the corresponding effective cost rate to determine the  
19 weighted capital component cost rate. The I&E table below demonstrates the interaction  
20 of each capital structure component and its corresponding effective cost rate. Finally, the  
21 sum of the weighted cost rates produces the overall rate of return. This overall rate of  
22 return is multiplied by the rate base to determine the return portion of a company's  
23 revenue requirement.

1 **COMPANY POSITION**

2 **Q. WHO IS THE COMPANY'S RATE OF RETURN WITNESS?**

3 A. Paul R. Moul is the primary Company witness addressing rate of return (Peoples  
4 Statement No. 9).

5

6 **Q. PLEASE SUMMARIZE THE COMPANY'S RATE OF RETURN CLAIM IN**  
7 **THIS PROCEEDING.**

8 A. Company witness Paul R. Moul has claimed the following rate of return for Peoples  
9 based on its Fully Projected Future Test Year (FPFTY) ending  
10 October 31, 2020:<sup>1</sup>

<u>Type of Capital</u>	<u>Ratio</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
Long-Term Debt	45.12%	4.22%	1.90%
Short-Term Debt	1.22%	4.69%	0.06%
Common Equity	53.66%	11.25%	6.04%
Total	100.00%		8.00%

11

12 **I&E POSITION**

13 **Q. SUMMARIZE YOUR RATE OF RETURN RECOMMENDATION IN THIS**  
14 **PROCEEDING.**

15 A. I recommend the following rate of return for Peoples:

<u>Type of Capital</u>	<u>Ratio</u>	<u>Cost Rate</u>	<u>Weighted Cost</u>
Long-Term Debt	45.12%	4.08%	1.84%
Short-Term Debt	1.22%	4.69%	0.06%
Common Equity	53.66%	8.97%	4.81%
Total	100.00%		6.71% <sup>2</sup>

<sup>1</sup> Peoples Statement No. 9, p. 2, lines 8-9; p. 21, lines 14-16, Peoples Exhibit No. PRM-1, Schedule 1, p.1/2 and Schedule 6, p.3.

<sup>2</sup> I&E Exhibit No. 2, Schedule 1.

1 **PROXY GROUP**

2 **Q. WHAT IS A PROXY GROUP AS USED IN BASE RATE CASES?**

3 A. A proxy group is a group of companies that have similar traits of risk in comparison to  
4 the subject utility. It acts as a benchmark for determining the subject utility's rate of  
5 return in a base rate case.

6

7 **Q. WHAT ARE THE REASONS FOR USING A PROXY GROUP?**

8 A. A proxy group is used as a benchmark to satisfy the long-established guideline of utility  
9 regulation that seeks to provide the subject utility with the opportunity to earn a return  
10 equal to that of similar risk enterprises.

11 A proxy group is typically utilized since the use of data exclusively from one  
12 company may be less reliable than using data from a group of companies. The lower  
13 reliability occurs because the data for one company may be subject to events that can  
14 cause short-term anomalies in the marketplace. The rate of return on common equity for  
15 a single company could become distorted and would therefore not be representative of  
16 similarly situated companies. The use of a proxy group has the effect of smoothing out  
17 potential anomalies associated with a single company.



1 **Q. WHAT CRITERIA DID YOU USE IN SELECTING YOUR PROXY GROUP**  
2 **COMPANIES?**

3 A. To select a proxy group that resembles the natural gas utility industry, I used the  
4 following criteria:

- 5 1. 50% or more of the company's revenues must be generated from the natural gas  
6 utility industry;
- 7 2. The company's stock must be publicly traded;
- 8 3. Investment information for the company must be available from more than one  
9 source including Value Line;
- 10 4. The company must not be involved in an announced merger or the target of an  
11 announced acquisition when I&E conducts its analysis to determine a fair and  
12 reasonable rate of return for the subject utility; and
- 13 5. The company must have five consecutive years of historic earnings data.

14  
15 **Q. WHAT CRITERIA DID MR. MOUL USE IN SELECTING HIS GAS PROXY**  
16 **GROUP COMPANIES?**

17 A. Mr. Moul began with the ten gas utility companies in Value Line's Investment Survey.  
18 From there, he eliminated one company, UGI Corp., due to its diversified businesses,  
19 which includes six reportable segments. These various business segments include  
20 propane, two international LPG segments, natural gas utility, energy services, and electric  
21 generation.<sup>3</sup> Beyond his rationale for excluding UGI Corp., Mr. Moul has not provided a  
22 list of criteria used to determine the remainder of his "Gas Group".

---

<sup>3</sup> Peoples Statement No. 9, p. 5, lines 4-9.

1                    Additionally, although Mr. Moul bases his recommendation on his own Gas  
 2                    Group, he provides a comparable cost of equity calculation using what he refers to as the  
 3                    “Subgroup”. The Subgroup is made up of the companies the Commission’s Bureau of  
 4                    Technical Utility Services (TUS) uses to calculate the cost of equity in its Quarterly  
 5                    Earnings Reports (QERs). He notes that the six companies comprising this Subgroup are  
 6                    also included in his Gas Group.<sup>4</sup>

7    **Q.    WHAT PROXY GROUP DID YOU USE IN YOUR ANALYSIS?**

8    A.    I included the following six companies in my proxy group:

Atmos Energy Corp.	ATO
NiSource Inc.	NI
Northwest Natural Holding Co.	NWN
ONE Gas, Inc.	OGS
Southwest Gas	SWX
Spire Inc.	SR

9

10   **Q.    WHAT PROXY GROUP DID MR. MOUL USE IN HIS ANALYSIS?**

11   A.    Mr. Moul utilized the following companies in his Gas Group:<sup>5</sup>

Atmos Energy Corp.	ATO
Chesapeake Utilities Corp.	CPK
New Jersey Resources Corp.	NJR
NiSource Inc.	NI
Northwest Natural Holding Co.	NWN
ONE Gas, Inc.	OGS
South Jersey Industries, Inc.	SJI
Southwest Gas Holdings, Inc.	SWX
Spire, Inc.	SR

12

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<sup>4</sup> Peoples Statement No. 9, p. 4, lines 14-21.  
<sup>5</sup> Peoples Exhibit PRM-1, Schedule 3, p. 2.

1 **Q. DO YOU AGREE WITH MR. MOUL'S GAS PROXY GROUP?**

2 A. Not entirely. While Mr. Moul's Gas Group includes all six of the companies in my proxy  
3 group, I have excluded three of the companies he uses.

4  
5 **Q. PLEASE LIST THE THREE COMPANIES MR. MOUL INCLUDES THAT YOU**  
6 **DO NOT AND EXPLAIN WHY YOU HAVE EXCLUDED THEM FROM YOUR**  
7 **PROXY GROUP.**

8 A. The three companies Mr. Moul includes in his Gas Group that I have excluded from my  
9 proxy group are Chesapeake Utilities Corp., New Jersey Resources Corp., and South  
10 Jersey Industries, Inc. All three of these companies did not meet my first criterion that  
11 fifty percent or more of the company's revenues must be generated from the regulated  
12 gas utility industry.

13

14 **CAPITAL STRUCTURE**

15 **Q. WHAT IS THE COMPANY'S CLAIMED CAPITAL STRUCTURE?**

16 A. The Company is claiming a capital structure of 45.12% long-term debt, 1.22% short-term  
17 debt, and 53.66% equity for the FPFTY ending October 31, 2020.<sup>6</sup>

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<sup>6</sup> Peoples Exhibit No. PRM-1, Schedule 1.

1 **Q. WHAT IS THE BASIS FOR THE COMPANY'S CLAIMED CAPITAL**  
2 **STRUCTURE?**

3 A. Mr. Moul states that these capital structure ratios are the best approximation of the mix of  
4 capital the Company will employ to finance its rate base during the period that the new  
5 rates are effective.<sup>7</sup> He states that the forecast of the Company's 4.22% embedded cost  
6 rate of long-term debt at October 31, 2020 reflects a 5.10% interest rate on a proposed  
7 issue of \$315 million in October 2020.<sup>8</sup> The Company's short-term debt cost of 4.69% at  
8 October 31, 2020 is derived from the one-month LIBOR rate plus a spread of 1.25%.<sup>9</sup>  
9 Mr. Moul's claimed short-term and long-term debt rates combine to a weighted total debt  
10 rate of 4.24%. Mr. Moul further explains that retained earnings as of October 31, 2020  
11 are forecasted at \$1,214,053,406 based upon a build-up of revenue remaining after  
12 dividends are paid.<sup>10</sup>

13  
14 **Q. DO YOU ACCEPT THE COMPANY'S CLAIMED CAPITAL STRUCTURE?**

15 A. Yes. I recommend using the Company's claimed capital structure of 45.12% long-term  
16 debt, 1.22% short-term debt, and 53.66% equity for the FPFTY ending October 31, 2020.

17  
18 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION TO USE THE**  
19 **COMPANY'S CLAIMED CAPITAL STRUCTURE?**

20 A. The Company's capital structure is appropriate for this proceeding as it is similar to the  
21 range of capital structures within my proxy group. For the past five years, my proxy

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<sup>7</sup> Peoples Statement No. 9, p. 21, lines 16-18.

<sup>8</sup> Peoples Statement No. 9, p. 22, lines 7-9.

<sup>9</sup> Peoples Statement No. 9, p. 22, lines 16-19 and Exhibit PRM-1, Schedule 6, p. 3.

<sup>10</sup> Peoples Exhibit PRM-1, Schedule 5.

1 group's average capital structure components ranged from 37.55% to 54.40% long-term  
2 debt, 1.27% to 9.94% short-term debt, and 37.12% to 55.88% equity. The average  
3 capital structure of my proxy group companies for the past five years was 44.96% long-  
4 term debt, 6.97% short-term debt and 48.07% equity.<sup>11</sup> Additionally, the changes shown  
5 on Schedule 5 of Peoples Exhibit PRM-1 in the debt and equity ratios between the  
6 historic test year of September 30, 2018 and the FPFTY ended October 31, 2020 reflect  
7 changes to the Company's capital structure ratios as forecasted by Mr. Moul above.  
8

#### 9 **COST RATE OF LONG-TERM DEBT**

10 **Q. WHAT IS THE COMPANY'S CLAIMED COST RATE OF LONG-TERM DEBT?**

11 A. Mr. Moul uses a debt cost rate of 4.22% based on the long-term debt outstanding at the  
12 end of the FPFTY.<sup>12</sup>  
13

14 **Q. DO YOU ACCEPT THE COMPANY'S CLAIMED COST RATE OF LONG-  
15 TERM DEBT?**

16 A. No. The Company's projected long-term debt cost rate is overstated in this proceeding.  
17

18 **Q. ON WHAT BASIS IS THE COMPANY'S LONG-TERM DEBT COST RATE  
19 OVERSTATED?**

20 A. The overstatement occurs because the Company's projected issuance of an Intercompany  
21 Promissory Note in the amount of \$315,000,000 with an effective rate of 5.16%<sup>13</sup> dated

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<sup>11</sup> I&E Exhibit No. 2, Schedule 2.

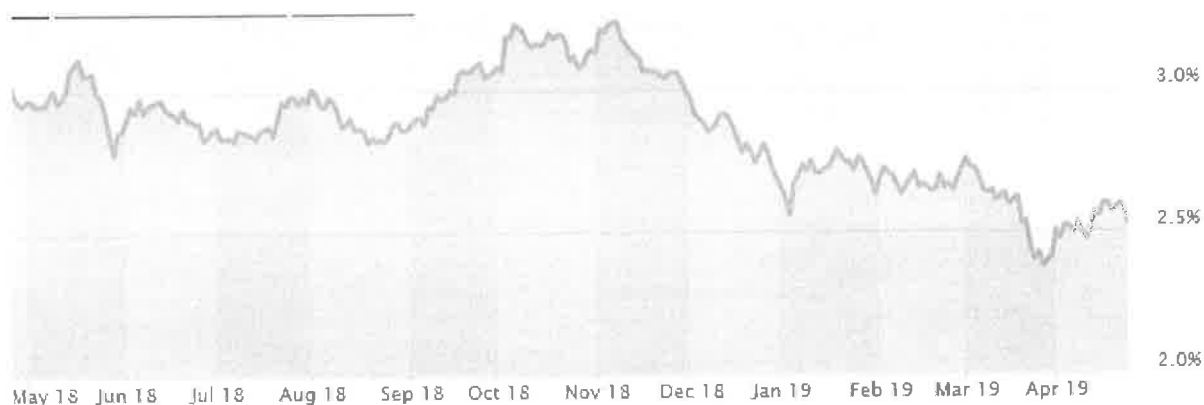
<sup>12</sup> Peoples Exhibit PRM-1, Schedule 6.

<sup>13</sup> Peoples Exhibit PRM-1, Schedule 6, p. 3 of 4.

1 October 31, 2020,<sup>14</sup> inappropriately influences its weighted cost of debt upward. The  
2 note's 5.16% effective interest rate does not reflect stabilized interest rates that are  
3 characteristic of current market conditions and outlooks; rather, the projected October 31,  
4 2020 issuance shows an increase in the Company's borrowing rate. Current conditions  
5 show interest rates stabilizing after about a six-month decline. Additionally, Peoples is in  
6 the midst of a proposed acquisition by another utility company. If the acquisition occurs,  
7 the Company will likely have access to additional capital markets at more reasonable  
8 rates. This is also not reflected in the Company's projected Cost of Debt for its FPFTY.  
9

10 **Q. WHAT EVIDENCE HAVE YOU SEEN THAT INTEREST RATES ARE**  
11 **CURRENTLY DECLINING OR REMAINING STABLE IN THE MARKET**  
12 **PLACE?**

13 A. The following chart reveals the U.S. 10-year treasury note rate stabilized at about  
14 2.5% after a six-month decline:<sup>15</sup>



15  
16 On March 20, 2019, the Federal Reserve issued a press release indicating that economic  
17 activity slowed after a strong fourth quarter. Accordingly, the Federal Open Market

<sup>14</sup> Peoples Exhibit PRM-1, Schedule 6, p. 4 of 4.

<sup>15</sup> <https://www.marketwatch.com/investing/bond/tmubmusd10y?countrycode=bx>, accessed Apr 24, 2019

1 committee decided to maintain the target range for the federal funds rate at 2-1/4 to 2-1/2  
2 percent.<sup>16</sup>

3  
4 **Q. WHAT UTILITY COMPANY IS ATTEMPTING TO ACQUIRE PEOPLES?**

5 A. Aqua America, Inc. (Aqua) is proposing to acquire Peoples at Dockets A-2018-3006061,  
6 A-2018-3006062, and A-2018-3006063.

7  
8 **Q. IN AQUA'S APPLICATION TO ACQUIRE PEOPLES, DOES THE DOCUMENT**  
9 **ADDRESS PEOPLES ACCESS TO DEBT CAPITAL AS A RESULT OF THE**  
10 **ACQUISITION?**

11 A. Yes. The joint application states "As a subsidiary of Aqua America, the Peoples  
12 Companies are expected to be able to raise the substantial amount of debt needed ... at a  
13 cost equal to, or lower than, the current cost incurred by the Peoples Companies, for  
14 comparable tenors."<sup>17</sup>

15  
16 **Q. BASED ON THE EVIDENCE SHOWN ABOVE, WHAT IS YOUR PROJECTED**  
17 **EFFECTIVE COST RATE FOR THE COMPANY'S PROJECTED DEBT**  
18 **ISSUANCE OF OCTOBER 31, 2020?**

19 A. Because the Federal Reserve has elected to maintain interest rates at a steady range of 2-  
20 1/4 to 2-1/2 percent, and the Company is expected to raise debt at a cost equal to the

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<sup>16</sup> I&E Exhibit No. 2, Schedule 3.

<sup>17</sup> Joint Application of Aqua America, Inc., Aqua Pennsylvania, Inc., Aqua Pennsylvania Wastewater, Inc., Peoples Natural Gas Company LLC and Peoples Gas Company LLC, A-2018-3006061, A-2018-3006062, A-2018-3006063, p. 27, paragraph 88.

1 current cost incurred by the Peoples Companies, I will use the Company's effective cost  
2 rate on its most recent issuance of debt, 4.69%, and assign that rate to its projected  
3 issuance of October 31, 2020.<sup>18</sup>

4  
5 **Q. AFTER ADJUSTING THE COST RATE OF THE COMPANY'S OCTOBER 31,**  
6 **2020 ISSUANCE OF DEBT TO 4.69%, WHAT IS ITS WEIGHTED COST OF**  
7 **LONG-TERM DEBT?**

8 A. After, making the adjustment, the Company's weighted long-term debt cost rate is  
9 4.08%.<sup>19</sup> This rate is reasonable as it falls within the 3.67% to 5.64% range of my proxy  
10 group's cost of debt and more closely resembles foreseeable market conditions.<sup>20</sup>

11  
12 **COST OF COMMON EQUITY**

13 **COMMON METHODS**

14 **Q. WHAT METHODS ARE COMMONLY PROPOSED TO DETERMINE THE**  
15 **COST OF COMMON EQUITY?**

16 A. Four methods are commonly proposed to estimate the cost of common equity. They are  
17 the Discounted Cash Flow (DCF) Model, the Capital Asset Pricing Model (CAPM), the  
18 Risk Premium (RP) Method, and the Comparable Earnings (CE) Method.

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<sup>18</sup> Peoples Exhibit PRM-1, Schedule 6, p. 3 of 4.

<sup>19</sup> I&E Exhibit No. 2, Schedule 4.

<sup>20</sup> I&E Exhibit No. 2, Schedule 5.



1 **Q. WHAT IS THE THEORETICAL BASIS FOR THE DCF METHOD?**

2 A. The theoretical basis for the DCF method is the “dividend discount model” of financial  
3 theory, which maintains that the value (price) of any security or commodity is the  
4 discounted present value of all future cash flows. The DCF method assumes that  
5 investors evaluate stocks in the classical economic framework, which maintains that the  
6 value of a financial asset is determined by its earning power, or its ability to generate  
7 future cash flows.

8  
9 **Q. WHAT IS THE THEORETICAL BASIS FOR THE CAPM?**

10 A. The Capital Asset Pricing Model theory asserts the basic principle of finance that  
11 investors require rates of return which relate directly to the level of risk associated with  
12 their investment. In other words, as investors bear higher levels of risk in purchasing  
13 stocks, they require higher rates of return as compensation for the risk they assume. The  
14 model measures a company’s risk by utilizing its beta, which indicates how sensitive its  
15 stock price is to changes in the overall market. CAPM predicts that companies with  
16 higher beta factors will command higher rates of return on equity. It assumes that given a  
17 certain level of risk, investors will choose portfolios offering the highest expected return  
18 at that level of risk. In the CAPM, two types of risk are associated with a stock: firm-  
19 specific risk (unsystematic risk) and market risk (systematic risk). The CAPM only  
20 allows for investors to receive a return for bearing systematic risk; unsystematic risk is  
21 assumed to be diversified away and does not earn a return. CAPM calculates a  
22 company’s cost of equity by adding a risk premium to the rate of return on a risk-free

1           asset. The risk premium consists of the difference between the return on the market  
2           overall and the risk-free rate, multiplied by the company's beta factor.

3   **Q.   WHAT IS THE THEORETICAL BASIS FOR THE RP METHOD?**

4   A.   The theoretical basis for the RP method is a simplified version of the CAPM. The RP  
5           method's theory is that common stock is riskier than debt and, as a result, investors  
6           require a higher expected return on stocks than bonds. In the RP approach, the cost of  
7           equity is made up of the cost of debt and a risk premium. While the CAPM uses the  
8           market risk premium, it also directly measures the systematic risk of the company  
9           through the use of beta. The RP method does not measure the specific risk of the  
10          company.

11  
12   **Q.   WHAT IS THE THEORETICAL BASIS FOR THE CE METHOD?**

13   A.   The CE method utilizes the economic concept of "opportunity cost," or the probable  
14          return available to investors from alternative investments of similar risk. Under this  
15          theory, when investors believe that the probable return from a given investment is less  
16          than the return available from another investment of similar risk, they will shift their  
17          capital to the alternative investment.

18  
19   **Q.   IN THIS PROCEEDING, WHAT METHODS DO YOU RECOMMEND TO  
20          DETERMINE THE COST OF COMMON EQUITY?**

21   A.   I recommend using the DCF method as the primary method to determine the cost of  
22          common equity and using the results of the CAPM as a comparison to the DCF results.

1 This is consistent with the methodology historically used by the Commission in base rate  
2 proceedings.<sup>21</sup>

3  
4 **Q. PLEASE EXPLAIN WHY YOU CHOSE TO USE THE DCF AND CAPM IN**  
5 **YOUR ANALYSIS.**

6 A. I chose the DCF model as my primary method for several reasons. First, the DCF  
7 provides a comprehensive measurement of the expected equity return rate. It does so by  
8 adding together the two forms of return that equity investors realize on their investments:  
9 (1) dividends, and (2) capital gains / growth. Second, the DCF provides the most direct  
10 measurement of return on equity. It requires a proxy group made of companies  
11 possessing similar risk characteristics as the subject utility and utilizes inputs of stock  
12 prices, dividend payments, and growth rate forecasts that are specific to those companies.  
13 The inputs are easily accessible through public sources such as Yahoo! Finance, Zacks,  
14 Morningstar, and Value Line. Third, the DCF recognizes the time value of money and is  
15 forward-looking, which is helpful since rate case proceedings often involve fully  
16 projected future test years. Finally, the DCF is commonly used and widely accepted by  
17 Public Utility Commissions across the United States. For the reasons mentioned above, I  
18 believe the DCF is the superior method for determining the required return on equity of a  
19 subject utility in a rate case proceeding.

20 I included a CAPM analysis as a comparison because its inputs generate results  
21 that are reflective of the utility industry; however, the CAPM is far less responsive to

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<sup>21</sup> *Pa. PUC v. City of DuBois – Bureau of Water*; Docket No. R-2016-2554150, pp. 96-97 (Order entered March 28, 2017) and *Pennsylvania Public Utility Commission v. UGI Utilities, Inc. – Electric Division*, Docket No. R- 2017-2640058, pp. 103-106, Order Entered October 25, 2018.

1 changes in the industry in comparison to the DCF. The CAPM is based on the  
2 performance of U.S. treasury bonds and the performance of the market as measured  
3 through the S&P 500, but it is company-specific only through the use of beta, which  
4 reflects a stock's volatility relative to the overall market. Although there is an industry-  
5 specific aspect to the CAPM, it is only as a measure of how reactive the industry is  
6 compared to the market as a whole. While changes in the utility industry are more likely  
7 to be accurately reflected in the DCF model, I included the results of my CAPM analysis  
8 because market changes, whether as a whole or specific to the utility industry, affect the  
9 outcome of each method in different ways. There are weaknesses associated with the  
10 CAPM, however, which is why it should be used as a secondary method.

11  
12 **Q. EXPLAIN THE CAPM'S DISADVANTAGES.**

13 A. The CAPM (and the RP method, because of its similarities) is a less reliable indicator  
14 because it provides an indirect measurement of the cost of equity. CAPM uses U.S.  
15 Treasury bonds and, typically, the return of the S&P 500 as proxies for the risk-free rate  
16 and overall market return, respectively. However, its result can be manipulated based on  
17 the type of debt and equity inputs used; therefore, it introduces a greater amount of  
18 subjectivity with respect to determining the cost of equity of a given company.

19  
20 **Q. ARE YOU AWARE OF ANY ACADEMIC LITERATURE THAT QUESTIONS**  
21 **THE CREDIBILITY OF THE CAPM?**

22 A. Yes. The article, "Market Place; A Study Shakes Confidence in the Volatile-Stock  
23 Theory," which appeared in the *New York Times* on February 18, 1992, summarized a

1 CAPM study conducted by professors Eugene F. Fama and Kenneth R. French.<sup>22</sup> Their  
2 study examined the importance of beta, CAPM's risk factor, in explaining returns on  
3 common stock. In CAPM theory, a stock with a higher beta should have a higher  
4 expected return. Fama and French found that the model did not do well in predicting  
5 actual returns and suggested the use of more elaborate multi-factor models.

6 A more recent article, "The Capital Asset Pricing Model: Theory and Evidence,"  
7 which appeared in the *Journal of Economic Perspectives* states that:

8 The attraction of the CAPM is that it offers powerful and  
9 intuitively pleasing predictions about how to measure risk  
10 and the relation between expected return and risk.  
11 Unfortunately, the empirical record of the model is poor,  
12 poor enough to invalidate the way it is used in applications.  
13 <sup>23</sup>

14 As a result, I conclude that the CAPM's relevance to the investment decision making  
15 process does not carry over into the regulatory rate setting process.

16  
17 **Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE RP METHOD IN**  
18 **YOUR ANALYSIS.**

19 A. The RP method is excluded because it is a simplified version of the CAPM and, in  
20 addition to being subject to the same faults listed above, the RP method does not  
21 recognize company-specific risk through beta.

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<sup>22</sup> Berg, Eric N. "Market Place; A Study Shakes Confidence in the Volatile-Stock Theory" *The New York Times*, Feb 1992: *nytimes.com* Web. 23 Mar 2016.

<sup>23</sup> Fama, Eugene F. and French, Kenneth R., "The Capital Asset Pricing Model: Theory and Evidence." *Journal of Economic Perspectives* (2004): Volume 18, Number 3, pp. 25-46.

1 **Q. EXPLAIN WHY YOU HAVE CHOSEN TO EXCLUDE THE CE METHOD IN**  
2 **YOUR ANALYSIS.**

3 A. The CE method is excluded because the choice of which companies are comparable is  
4 subjective, and it is debatable whether historic accounting values are representative of the  
5 future. Moreover, the Commission has long recognized the problem with this method,  
6 and as a result, its historical usage in this regulatory forum has been minimal.

7

8 **Q. WHAT IS THE COMMISSION'S HISTORICAL TREATMENT OF THE CE**  
9 **APPROACH?**

10 A. Regarding the use of non-utility companies' historical book earnings in an attempt to  
11 determine a cost of equity for a utility, the Commission stated:

12           The use of nonregulated companies as a comparable group for regulated firms  
13           requires numerous unsupportable assumptions which results in a highly  
14           speculative finding.<sup>24</sup>  
15

16 **SUMMARY OF COMPANY'S RESULTS**

17 **Q. WHAT ARE THE RESULTS OF THE COMPANY'S COST OF EQUITY**  
18 **ANALYSES?**

19 A. Mr. Moul's analysis to determine the Company's cost of equity is reliant upon four  
20 methods: the DCF, the RP, the CAPM, and the CE method. The results for each method,

---

<sup>24</sup> *Pennsylvania Public Utility Commission v. Philadelphia Electric Co.* 33 PUR 4<sup>th</sup> 319, 341 (Pa PUC 1980).

1 based on his proxy group of nine gas utility companies and his sub-group are listed  
2 below:

<u>Method</u>	<u>Gas Group</u>	<u>Sub-group<sup>25</sup></u>
DCF	11.19%	11.59%
RP	11.50%	11.50%
CAPM	11.96%	11.96%
CE method	12.45%	12.45%

8  
9 **I&E RECOMMENDATION**

10 **Q. WHAT IS YOUR RECOMMENDATION FOR THE APPROPRIATE COST OF**  
11 **COMMON EQUITY IN THIS PROCEEDING?**

12 A. Based upon my analysis, I recommend a cost of common equity of 8.97%.<sup>26</sup>

13  
14 **Q. WHAT IS THE BASIS FOR YOUR RECOMMENDATION?**

15 A. I arrived at this equity return using the DCF method. As explained below, I used my  
16 CAPM result of 9.72%<sup>27</sup> only to present to the Commission a comparison to my DCF  
17 results. My DCF analysis employed a spot dividend yield, a 52-week dividend yield, and  
18 earnings growth forecasts.

---

<sup>25</sup> Peoples Exhibit PRM-1, Schedule 1, p. 2/2.

<sup>26</sup> I&E Exhibit No. 2, Schedule 6.

<sup>27</sup> I&E Exhibit No. 2, Schedule 7.

1 **DISCOUNTED CASH FLOW (DCF)**

2 **Q. PLEASE EXPLAIN YOUR DCF ANALYSIS.**

3 A. My analysis employs the standard discrete DCF model as portrayed in the following  
4 formula:

5 
$$K = D_1/P_0 + g$$

6 Where:

7 K = Cost of equity

8  $D_1$  = Dividend expected during the year

9  $P_0$  = Current price of the stock

10 g = Expected growth rate of dividends

11 When a forecast of  $D_1$  is not available,  $D_0$  (the current dividend) must be adjusted by one-  
12 half of the expected growth rate to account for changes in the dividend paid in period  
13 one. Since forecasts for each company in my proxy group were available from Value  
14 Line, no dividends were adjusted for my analysis.

15

16 **Q. PLEASE EXPLAIN HOW YOU DEVELOPED THE DIVIDEND YIELDS USED**  
17 **IN YOUR DCF ANALYSIS.**

18 A. A representative dividend yield must be calculated over a time frame that avoids the  
19 problems of both short-term anomalies and stale data series. For the purpose of my DCF  
20 analysis, the dividend yield calculation places equal emphasis on the most recent spot and



1 the 52-week average dividend yields. The following table summarizes my dividend yield  
2 computations for the proxy group:

<b>Six Company Proxy Group</b>	<b>Dividend Yield</b>
Spot	2.87%
52-week average	3.07%
Average	2.97% <sup>28</sup>

3  
4 **Q. WHAT INFORMATION DID YOU RELY UPON TO DETERMINE YOUR**  
5 **EXPECTED GROWTH RATE?**

6 A. I examined the earnings growth forecasts and used five-year projected growth rate  
7 estimates from Value Line, Yahoo! Finance, Zacks, and Morningstar.

8  
9 **Q. WHAT WERE THE RESULTS OF YOUR FORECASTED EARNINGS**  
10 **GROWTH RATES?**

11 A. The expected average growth rates for the six-company proxy group ranged from 2.42%  
12 to 25.50% with an overall average of 7.18%. For the purpose of determining the growth  
13 estimate, I subsequently eliminated Northwest Natural Gas Co.'s (Northwest) Value Line  
14 growth estimate of 25.50% to determine a new adjusted average of 6.00%.<sup>29</sup>

15  
16 **Q. EXPLAIN WHY YOU ELIMINATED THE VALUE LINE PROJECTED**  
17 **GROWTH RATE FOR NORTHWEST NATURAL GAS CO.**

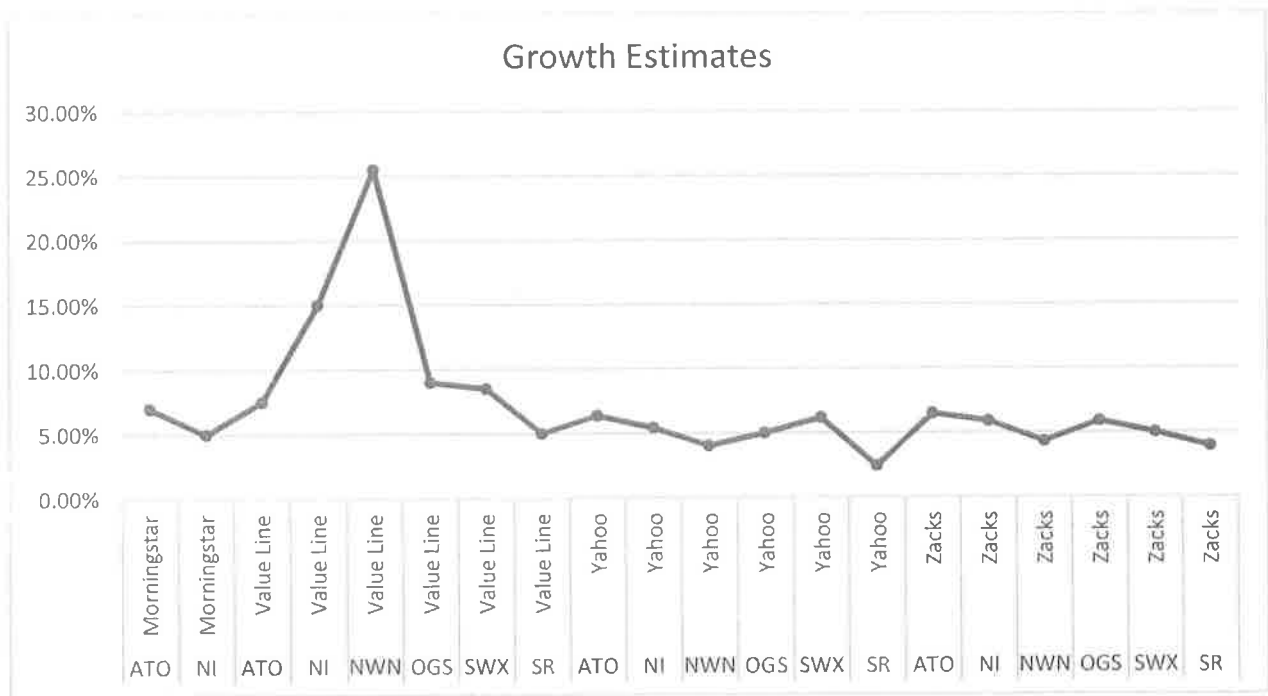
18 A. While the use of a proxy group largely smooths out various anomalies, I feel that Value  
19 Line's growth projection for Northwest is an extreme outlier that would have an

---

<sup>28</sup> I&E Exhibit No. 2, Schedule 8.

<sup>29</sup> I&E Exhibit No. 2, Schedule 9.

1 unnecessary and unwarranted impact on my DCF analysis, which would adversely affect  
 2 my recommendation for the Company's cost of common equity. Value Line's estimate  
 3 of 25.50% is more than 3.5 times higher and greater than three standard deviations over  
 4 the originally calculated 7.18% overall average. Further, the estimate is more than 4  
 5 times higher than the average of the remaining estimates. The following chart clearly  
 6 illustrates how extreme an outlier that Value Line's growth estimate is:



7  
8

9 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS CONCERNING THE**  
 10 **RESULTS OF THE FIVE-YEAR PROJECTED GROWTH RATES?**

11 A. Yes. While these five-year projected growth rates can be used in analyses, one must be  
 12 aware that analysts' estimates may be biased. This bias has been observed in literature.

1 Q. PLEASE EXPLAIN.

2 A. An article authored by Professors Ciciretti, Dwyer, and Hasan in 2009 observed strong  
3 evidence of earnings forecasts being higher than actual earnings.<sup>30</sup> In the spring of 2010,  
4 *McKinsey on Finance* presented an article reporting that after a decade of stricter  
5 regulation, analysts' forecasts are still overly optimistic. The article demonstrates that at  
6 twelve months out, earnings estimates exceed actual earnings while a one-month forecast  
7 is closer to the actual result.<sup>31</sup> Thus, my return on equity recommendation is more than  
8 adequate as it is based upon growth rates that are already upwardly biased.

9  
10 Q. WHAT IS THE RESULT OF YOUR DCF ANALYSIS BASED ON YOUR  
11 RECOMMENDED DIVIDEND YIELDS AND GROWTH RATES?

12 A. The result of my DCF analysis is 8.97%<sup>32</sup> and is calculated as follows:

$$\begin{array}{rccccccc} & K & = & D_1/P_0 & + & g & \\ 13 & 8.97\% & = & 2.97\% & + & 6.00\% & \end{array}$$

---

<sup>30</sup> Ciciretti, Rocco; Dwyer, Gerald R; and Iftekhan Hasan. "Investment Analysts' Forecasts of Earnings" Federal Reserve Bank of St. Louis Review, September/October 2009, 91 (5, part 2) pp. 545-67.

<sup>31</sup> Goedhart, Marc J; Raj, Rishi; and Abhishek Saxena. "Equity analyst: Still too bullish" McKinsey On Finance Number 35 Spring 2010, pp. 14-17.

<sup>32</sup> I&E Exhibit No. 2, Schedule 6.

1 **CAPITAL ASSET PRICING MODEL**

2 **Q. PLEASE EXPLAIN YOUR CAPM ANALYSIS.**

3 A. My analysis employs the standard CAPM as portrayed in the following formula:

4 
$$K = R_f + \beta(R_m - R_f)$$

5 Where:

6 K = Cost of equity

7  $R_f$  = Risk-free rate of return

8  $R_m$  = Expected rate of return on the overall stock

9  $\beta$  = Beta measures the systematic risk of an asset

10

11 **Q. WHAT IS BETA AS EMPLOYED IN YOUR CAPM ANALYSIS?**

12 A. Beta is a measure of the systematic risk of a stock in relation to the rest of the stock  
13 market. A stock's beta is estimated by calculating the linear regression of a stock's return  
14 against the return on the overall stock market. A stock with a price pattern identical to  
15 that of the overall stock market will have a beta of one (1). A stock with a price  
16 movement that is greater than the overall stock market will have a beta that is greater than  
17 one (1) and would be described as having more investment risk than the market.  
18 Conversely, a stock with a price movement that is less than the overall stock market will  
19 have a beta of less than one (1) and would be described as having less investment risk  
20 than the market.

1 **Q. WHAT BETA DID YOU CHOOSE FOR YOUR CAPM ANALYSIS?**

2 A. In estimating an equity cost rate for my proxy group of six gas utilities, I used the average  
3 of the betas for the companies as provided in the Value Line Investment Survey. The  
4 average beta for the proxy group is 0.63, indicating that gas utilities are significantly less  
5 volatile than the overall stock market.<sup>33</sup>

6

7 **Q. WHAT RISK-FREE RATE OF RETURN HAVE YOU CHOSEN FOR YOUR**  
8 **FORECASTED CAPM ANALYSIS?**

9 A. I have chosen to use the risk-free rate of return ( $R_f$ ) from the projected yield on 10-year  
10 Treasury Notes. While the yield on the short-term T-Bill is a more theoretically correct  
11 parameter to represent a risk-free rate of return, it can be extremely volatile. The  
12 volatility of short-term T-Bills is directly influenced by Federal Reserve policy. At the  
13 other extreme, the 30-year Treasury Bond exhibits more stability but is not risk-free.  
14 Long-term Treasury Bonds have substantial maturity risk associated with market risk and  
15 the risk of unexpected inflation. Long-term treasuries normally offer higher yields to  
16 compensate investors for these risks. As a result, I chose to use the yield on the 10-year  
17 Treasury Note because it mitigates the shortcomings of the other two alternatives.  
18 Additionally, the Commission has recently agreed with I&E and recognized the 10-year  
19 Treasury Note as the superior measure of the risk-free rate of return.<sup>34</sup> The forecasted  
20 yield on the 10-year Treasury Note, as can be seen in Blue Chip Financial Forecasts, and  
21 is expected to range between 3.00% and 3.10% from the second quarter of 2019 through

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<sup>33</sup> I&E Exhibit No. 2, Schedule 10.

<sup>34</sup> *Pa. PUC v. UGI Utilities, Inc. – Electric Division*; Docket No. R-2017-2640058 (Order entered October 25, 2018).  
*See generally* Disposition of Capital Asset Pricing Model (CAPM), p. 99.

1 the fourth quarter of 2019, and it is forecasted to be 3.60% from 2020-2024.<sup>35</sup> For my  
2 forecasted CAPM analysis, I chose 3.20%, which is the average of all the yield forecasts I  
3 observed.

4  
5 **Q. HOW DID YOU DETERMINE THE RETURN ON THE OVERALL STOCK**  
6 **MARKET EMPLOYED IN YOUR FORECASTED CAPM ANALYSIS?**

7 A. To arrive at a representative expected return on the overall stock market, I observed  
8 Value Line's 1700 stocks and the S&P 500. Value Line expects its universe of 1700  
9 stocks to have an average yearly return of 13.88% over the next three to five years, based  
10 on a forecasted dividend yield of 2.30% and a yearly index appreciation of 55%. The  
11 S&P 500 index is expected to have an average yearly return of 13.11% over the next five  
12 years, based upon Barron's forecasted dividend yield of 2.00% and Yahoo!'s expected  
13 increase in the S&P 500 index of 11.00%.<sup>36</sup>

14  
15 **Q. WHAT IS THE EXPECTED RETURN ON THE OVERALL STOCK MARKET**  
16 **BASED ON YOUR FORECASTED ANALYSIS?**

17 A. The expected return on the overall market is 13.49% for my forecasted analysis.<sup>37</sup>

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<sup>35</sup> I&E Exhibit No. 2, Schedule 11.

<sup>36</sup> I&E Exhibit No. 2, Schedule 12.

<sup>37</sup> I&E Exhibit No. 2, Schedule 12.

1 **Q. WHAT IS THE COST OF EQUITY RESULT FROM YOUR CAPM ANALYSIS?**

2 A. The result of my analysis is as follows:<sup>38</sup>

$$\begin{aligned} 3 \quad K &= R_f + \beta(R_m - R_f) \\ 4 \quad 9.72\% &= 3.20\% + 0.63(13.49\% - 3.20\%) \end{aligned}$$

5

6 **CRITIQUE OF COMPANY'S CLAIM**

7 **Q. DO YOU AGREE WITH MR. MOUL'S PROPOSED COST OF EQUITY?**

8 A. No. Mr. Moul's claimed cost of equity is overstated for several reasons. First, Mr. Moul  
9 gives undue weight to his CAPM, RP, and CE methods, which is neither valid nor  
10 representative of previous Commission methodology. Second, Mr. Moul uses a double-  
11 adjusted beta in his CAPM analysis, which inflates his cost of equity recommendation.  
12 Finally, Mr. Moul makes several unsupported adjustments (including size and leverage)  
13 to either the inputs or the results of his analyses, all of which also serve to inflate his  
14 recommendation. Mr. Moul also suggested a 25 basis-point addition to the Company's  
15 allowed ROE based on management performance.

16

17 **CRITIQUE OF PEOPLES' PROPOSED COST OF EQUITY**

18 **Q. DO YOU AGREE WITH MR. MOUL'S PROPOSED COST OF EQUITY?**

19 A. No. I disagree with Mr. Moul's proposed cost of equity analysis for several reasons.  
20 First, I disagree with the weights given to the results of Mr. Moul's CAPM, RP, and CE  
21 analyses in his recommendation. Second, I take issue with certain aspects of Mr. Moul's  
22 discussion of Peoples' risk and his claims regarding the effect of the Tax Cut and Jobs

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<sup>38</sup> I&E Exhibit No. 2, Schedule 7.

1 Act of 2017. Third, I disagree with his application of the DCF including the forecasted  
2 growth rate and leverage adjustment he uses. Fourth, I do not agree with his inclusion of  
3 a size adjustment, his reliance on the 30-year Treasury Bond for his risk-free rate, and his  
4 use of a double-adjusted beta in his CAPM analysis. Finally, I believe his request for an  
5 additional 25 basis points for “strong management performance” is unjustified.

6  
7 **WEIGHTS GIVEN TO METHODS**

8 **Q. DO YOU AGREE WITH THE COMPANY’S RELIANCE ON THE CAPM, RP,**  
9 **AND CE MODELS?**

10 A. No. While I support providing the Commission with the CAPM results for establishing a  
11 point of comparison to the DCF model, I oppose assigning weight to the CAPM, RP, or  
12 CE model results. For reasons discussed above, Mr. Moul’s application of weight to his  
13 RP results is inappropriate. The CAPM measures the cost of equity indirectly and can be  
14 manipulated by the time period, risk-free rate, and measure of the market that is chosen.  
15 Since the RP is a simplified version of the CAPM, it suffers these same flaws and is not  
16 company-specific. In addition to the flaws already discussed, the CE model has  
17 limitations that are discussed below.

18 Two recent Commission Orders affirmed reliance primarily on the DCF and  
19 rejected giving equal weight to the other methodologies. The first Order states:

20 [T]he City’s cost of equity in this proceeding should be based upon  
21 the use of the DCF methodology, with the other methodology  
22 results used as a check on the reasonableness of the DCF results.  
23 We note that we have primarily relied upon the DCF methodology  
24 in arriving at previous determinations of the proper cost of equity  
25 and utilized the results of methods other than the DCF, such as the  
26 CAPM and RP methods, as a check upon the reasonableness of the  
27 DCF derived equity return calculation, tempered by informed



1 judgement. We are not persuaded by the arguments of the City that  
2 we should assign equal weight to the multiple methodologies.<sup>39</sup>  
3

4 And the second Order states as follows:

5 The ALJs adopted the positions of I&E and the OCA that the DCF method should  
6 be the primary method used to determine the cost of common equity, and that the  
7 results of the CAPM should be used as a comparison to the DCF results. The  
8 ALJs found no reason to deviate from these preferred methods in this proceeding.  
9 Therefore, the ALJs recommended against the use of the RP and CE methods  
10 proffered by UGI. Further, the ALJs noted that the companies analyzed under the  
11 CE model are too dissimilar to a regulated public utility company. R.D. at 60, 76,  
12 81-82. ... we shall adopt the positions of I&E and the OCA and shall base our  
13 determination of the appropriate cost of equity on the results of the DCF method  
14 and shall use the CAPM results as a comparison thereto. As both Parties noted,  
15 the use of the DCF model has historically been our preferred methodology. This  
16 was recently affirmed in *Pa. PUC, et. al v. City of Dubois-Bureau of Water*,  
17 Docket No. R-2016-2554150, *et. al.* (Order entered March 28, 2017). Like the  
18 ALJs, we find no reason to deviate from the use of this method in the instant case.  
19 Accordingly, we shall deny UGI's Exceptions on this issue.<sup>40</sup>  
20

21 **Q. WHAT ARE THE LIMITATIONS OF THE CE APPROACH?**

22 A. The limitations of the CE approach have been partially discussed above. Additionally,  
23 Mr. Moul's CE model includes companies that have different business and financial risk  
24 profiles than Peoples.<sup>41</sup> Mr. Moul's CE analysis features a mix of companies that are not  
25 regulated utilities; therefore, they are too dissimilar to be used as a proxy to measure the  
26 Company's return on equity. Specifically, the criteria Mr. Moul employs in his screening  
27 process for his CE approach result in the selection of such entities as The Cheesecake  
28 Factory Inc., Capitol Federal Financial Inc., Hershey Company, and Forrester Research  
29 Inc. Regulated natural gas companies are monopolies; they have very low business risk

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<sup>39</sup> *Pennsylvania Public Utility Commission v. City of DuBois – Bureau of Water*, Docket No. R-2016-2554150, pp. 96-97, Order Entered March 28, 2017.

<sup>40</sup> *Pennsylvania Public Utility Commission v. UGI Utilities, Inc. – Electric Division*, Docket No. R- 2017-2640058, pp. 103-106, Order Entered October 25, 2018.

<sup>41</sup> Peoples Exhibit No. PRM-1, Schedule 14, p. 1/3.

1 and can maintain higher financial risk profiles with more leverage. The companies in Mr.  
2 Moul's CE proxy group operate in a competitive environment with higher levels of  
3 business risk. They must maintain lower financial risk profiles by using smaller amounts  
4 of leverage.

5  
6 **RISK ANALYSIS**

7 **Q. HOW DOES MR. MOUL SUMMARIZE THE COMPANY'S RISK FACTORS?**

8 A. Mr. Moul describes the Company's risk factors in two categories: qualitative and  
9 quantitative. He discusses its qualitative risk factors under "Natural Gas Risk Factors"<sup>42</sup>  
10 and its quantitative risk factors under "Fundamental Risk Analysis."<sup>43</sup>

11 In Peoples' qualitative risks, he claims those associated with competition, the  
12 Company's construction program, and the Tax Cuts and Jobs Act (TCJA).

13 When discussing quantitative risks, he cites the Company's relatively small size,  
14 beta value, and various performance measurements including its common equity ratio,  
15 operating ratios, interest coverage, quality of earnings, and internally generated funds.

16  
17 **Q. WHAT ARE THE COMPANY'S RISKS THAT MR. MOUL CLAIMS ARE**  
18 **ASSOCIATED WITH COMPETITION?**

19 A. Mr. Moul suggests that the existence of local gas production in the Company's service  
20 territory and potential access to interstate pipelines provide a bypass threat to the  
21 Company.<sup>44</sup> Mr. Moul also states a material portion of the large customer throughput can

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<sup>42</sup> Peoples Statement No. 9, p. 7, line 3.

<sup>43</sup> Peoples Statement No. 9, p. 12, line 15.

<sup>44</sup> Peoples Statement No. 9, p. 7, lines 15-20.

1 be exposed to fuel switching alternatives such as coal, oil, propane, or other energy  
2 sources depending on the fluctuating costs of these different fuels in comparison with  
3 natural gas.<sup>45</sup>

4  
5 **Q. WHAT ARE YOUR OBSERVATIONS REGARDING MR. MOUL'S CLAIMED**  
6 **RISKS RESULTING FROM COMPETITION?**

7 A. Since deregulation that occurred in the 1980s and 1990s, most companies in the natural  
8 gas utility sector face similar risks of competition with other suppliers in today's market  
9 place. In this regard, the companies within my proxy group provide a good measurement  
10 of the risk associated with competition from alternate suppliers. Risks associated with  
11 switching to alternative forms of energy are largely mitigated by high conversion costs.  
12 Additionally, the Company states that no large customers were lost in the years ended  
13 December 31, 2016 through December 31, 2018.<sup>46</sup> While the Company states some large  
14 customers were lost in prior years, it provided no information with respect to what year or  
15 how many were lost or gained, or the reason for the loss. My proxy group adequately  
16 measures the risks associated with competition that Peoples faces.

17  
18 **Q. WHAT CLAIM DOES MR. MOUL MAKE REGARDING ADDITIONAL RISK**  
19 **DUE TO THE COMPANY'S COSTRUCTION PROGRAM AND UPGRADING**  
20 **EXISTING FACILITIES?**

21 A. Mr. Moul claims that the Company must undertake investments to maintain and upgrade  
22 existing facilities in its service territory in order to maintain safe and reliable service to

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<sup>45</sup> Peoples Statement No. 9, p. 9, lines 17-19.

<sup>46</sup> I&E Exhibit 1, Schedule 13.

1 existing customers. He adds that as of year-end 2017, 27% of the Company's distribution  
2 mains were comprised of aging cast iron and unprotected steel pipe. Finally, he states  
3 that the Company's capital expenditures over the next two years will equate to 27% of  
4 the net utility plant in service at September 30,2018.<sup>47</sup>

5  
6 **Q. WHAT IS YOUR RESPONSE TO MR. MOUL'S CLAIM REGARDING RISK**  
7 **DUE TO THE COMPANY'S SPENDING ON INFRASTRUCTURE?**

8 A. Every gas utility faces the same issues of upgrading or replacing its infrastructure. As  
9 costs for replacing infrastructure increase, Peoples, as well as any other regulated gas  
10 utility, has the option to file a base rate case to address revenue inadequacy due to  
11 increasing costs, infrastructure replacement, or any other associated issues. A base rate  
12 case allows a utility to recover its costs and provides it with the *opportunity* to earn a  
13 reasonable return on capital investments. Mr. Moul has not demonstrated any material  
14 difference in risk associated with infrastructure spending between Peoples and his Gas  
15 Group companies.

16  
17 **Q. EXPLAIN THE CONCERNS EXPRESSED BY MR. MOUL REGARDING THE**  
18 **CLAIMED ADDED RISKS DUE TO RECENT FEDERAL INCOME TAX LAW**  
19 **CHANGES.**

20 A. Some of the concerns Mr. Moul mentions include lower pre-tax interest coverage that  
21 will reduce credit quality, increased variability of revenues, expenses, and investor

---

<sup>47</sup> Peoples Statement No. 9, p. 10, lines 5-17.

1 returns, and that utilities will require more investor supplied capital due to the decline of  
2 internally generated funds to fund Peoples' construction program.<sup>48</sup>

3  
4 **Q. WHAT IS YOUR OBSERVATION REGARDING MR. MOUL'S PROJECTION**  
5 **THAT PEOPLES' INTEREST COVERAGE RATIO AND CREDIT QUALITY**  
6 **WILL DECLINE?**

7 A. Assuming Mr. Moul's projected interest coverage ratio for the Company includes an  
8 Allowance for Funds Used During Construction, it is projected to be 5.22<sup>49</sup> in the  
9 FPFTY, after factoring in the effects of the TCJA. The average interest coverage for his  
10 Gas Group from 2013-2017 (before the TCJA was in effect) was 4.60.<sup>50</sup> The policies of  
11 the TCJA affect Peoples and Mr. Moul's Gas Group companies equally. Therefore, once  
12 the effects of the TCJA are measured for the Gas Group, its average interest coverage  
13 ratio will likely drop in a similar manner that it dropped for the Company. Peoples is  
14 significantly less risky than the Gas Group in terms of interest coverage. Moreover,  
15 analysts are well aware of the TCJA, its policies, and its impact on gas utility companies;  
16 accordingly, their forecasts have the effects of the TCJA, along with host of other factors,  
17 built into them.

---

<sup>48</sup> Peoples Statement No. 9, pp. 10-12.

<sup>49</sup> Peoples Statement No. 9, p. 12, lines 4-6.

<sup>50</sup> Peoples Exhibit No. PRM-1, Schedule 3.

1 Q. WHAT ARE YOUR OBSERVATIONS REGARDING MR. MOUL'S CLAIM  
2 THAT UTILITIES WILL REQUIRE MORE INVESTOR SUPPLIED CAPITAL  
3 BECAUSE OF THE DECLINE OF INTERNALLY GENERATED FUNDS TO  
4 FUND CONSTRUCTION AS A RESULT OF TAX REFORM?

5 A. The TCJA reduces deferred taxes and eliminates bonus depreciation for utilities;  
6 consequently, this reduces the percentage of internally generated funds (IGF) for  
7 construction. However, Peoples' IGF is much higher than the Gas Group: 92.2% vs.  
8 71.7%.<sup>51</sup> This indicates less risk for the Company in terms of absorbing any potential  
9 negative effects from the TCJA to its IGF ratio.

10

11 Q. DISCUSS MR. MOUL'S ASSERTION THAT THE COMPANY'S INCOME AND  
12 EXPENSE VARIABILITY WILL INCREASE DUE TO TAX REFORM.

13 A. I agree that income and expense variability will increase due to taxes representing a  
14 reduced percentage of costs; however, I doubt that any company would advocate for  
15 higher taxes for the sake of reduced income and expense variability. Further, all other  
16 things remaining equal, as the provisions of the TCJA become established in the  
17 economy, the income and expense variability related to the new tax rate will become the  
18 new norm. Since all gas utility companies are subject to the same increase of income and  
19 expense variability because they are equally affected by the TCJA, the results for my  
20 proxy group certainly reflect this issue in analyst forecasts.

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<sup>51</sup> Peoples Exhibit No. PRM-1, Schedules 2 and 3.

1 **Q. DO YOU HAVE ANY ADDITIONAL COMMENTS IN RESPONSE TO MR.**  
2 **MOUL’S CONCERNS REGARDING POTENTIAL IMPACTS OF TAX**  
3 **REFORM?**

4 A. Yes. Changes resulting from the TCJA will likely not prevent the Company from being  
5 creditworthy, nor impact its ability to access capital at fair rates. The TCJA is in its  
6 second year and the full impact of Tax Reform has not been realized for the utility  
7 industry; therefore, it is inappropriate to make dire premonitions and return on equity  
8 adjustments in this proceeding.

9  
10 **Q. DO YOU AGREE WITH MR. MOUL’S ASSESSMENT OF THE**  
11 **QUANTITATIVE RISKS IN HIS FUNDAMENTAL RISK ANALYSIS?**

12 A. No. I disagree with his analysis pertaining to company size, fixed charge coverage,  
13 common equity ratio, and return on book equity. Return on book equity, the common  
14 equity ratio, and utility size are discussed and disputed below, and interest coverage was  
15 discussed and disputed earlier in this testimony.

16  
17 **Q. SUMMARIZE MR. MOUL’S CLAIM REGARDING THE COMPANY’S**  
18 **COMMON EQUITY RATIO.**

19 A. Mr. Moul asserts that a firm with a high common equity ratio has lower financial risk in  
20 comparison to a firm with a low common equity ratio.<sup>52</sup> He then points to five-year  
21 averages of common ratios, asserting that Peoples has higher financial risk in comparison

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<sup>52</sup> Peoples Statement No. 9, p. 16, lines 1-3.

1 to the Gas Group because the Company's 51.4% equity ratio is comparatively lower than  
2 the 53.8% equity ratio of his Gas Group.<sup>53</sup>

3  
4 **Q. WHAT ARE YOUR OBSERVATIONS WITH RESPECT TO MR. MOUL'S**  
5 **ASSERTION OF COMPARITIVE RISK ASSOCIATED WITH THE**  
6 **COMPANY'S COMMON EQUITY RATIO?**

7 A. To begin, the difference between the Company's 51.4% average equity ratio of the past  
8 five years and the Gas Group (53.8%) is so small that a reasonable conclusion is the  
9 Company and the Gas Group are similarly situated in terms of financial risk resulting  
10 from their capital structures. More importantly, Mr. Moul refers to rate-setting as  
11 'prospective,'<sup>54</sup> and asserts that a rate of return should reflect known or reasonably  
12 foreseeable changes which will occur during the course of the FPFTY.<sup>55</sup> Accordingly,  
13 Mr. Moul indicates that for the instant case, he is adopting the Company's projected  
14 common equity ratio of 53.66%.<sup>56</sup> Without short-term debt in the Company's capital  
15 structure, Mr. Moul places the Company's common equity ratio at 54.32% for the  
16 FPFTY<sup>57</sup> and further describes it as reasonable.<sup>58</sup> Clearly, Mr. Moul's assertion that the  
17 Company has higher financial risk based upon its common equity ratio is baseless.

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<sup>53</sup> Peoples Statement No. 9, p. 16, lines 3-7.

<sup>54</sup> Peoples Statement No. 9, p. 21, line 12.

<sup>55</sup> Peoples Statement No. 9, p. 21, lines 13-14.

<sup>56</sup> Peoples Statement No. 9, p. 21, lines 14-18.

<sup>57</sup> Peoples Statement No. 9, p. 20, line 13.

<sup>58</sup> Peoples Statement No. 9, p. 20, lines 13-14.



1 **Q. DISCUSS MR. MOUL'S CLAIM REGARDING RETURN ON BOOK EQUITY.**

2 A. The coefficient of variation of the rate of return on book common equity measures a  
3 firm's risk associated with its variability of earned returns. Greater amounts of variability  
4 indicate higher levels of risk. Mr. Moul asserts changes in federal income tax law will  
5 likely place upward pressure on the Company's variability statistics.<sup>59</sup> For the five-year  
6 period of 2013-2017, the coefficient of variation was 0.182 for the Company,<sup>60</sup> 0.146 for  
7 Mr. Moul's Sub-Group,<sup>61</sup> 0.076 for the Gas Group, and 0.064 for the S&P Public  
8 Utilities.<sup>62</sup> What is missing from Mr. Moul's analysis is a sense of scale, or  
9 proportionality, in terms of risk associated with the coefficient of variation. Coefficients  
10 of variation that are less than 1.00 indicate low variability; therefore, the degree of  
11 difference in variability between the Company and the Gas Group is insignificant.  
12 Peoples is relatively comparable to the Gas Group in terms of variability of earned  
13 returns.

14  
15 **Q. SUMMARIZE THE COMPANY'S QUANTITATIVE RISK FACTORS.**

16 A. Overall, I disagree with Mr. Moul that the Company is in a position of greater risk in  
17 comparison with the Gas Group.<sup>63</sup> The size risk, as discussed below, does not apply in  
18 this proceeding. The Company's common equity ratio indicates it is comparable to the  
19 Gas Group in terms of financial risk, and the difference in variability of return on book  
20 equity between Peoples and the Gas Group and Sub Group is negligible. Threats of

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<sup>59</sup> Peoples Statement No. 9, p. 16, lines 16-18.

<sup>60</sup> Peoples Statement No. 9, p. 16, lines 12.

<sup>61</sup> I&E Exhibit No. 2, Schedule 14.

<sup>62</sup> Peoples Statement No. 9, p. 16, lines 12-13.

<sup>63</sup> Peoples Statement No. 9, pp. 18-19.

1 bypass, replacing aging infrastructure and the use of throughput for alternate sources of  
2 gas are all risk factors that are common to the natural gas utility industry. Therefore, the  
3 cost of equity, as measured by my proxy group, adequately measures the cost of equity  
4 for Peoples.

5  
6 **MR. MOUL'S ADDITIONAL EQUITY ADJUSTMENTS**

7 **Q. WHAT ADJUSTMENTS HAS THE COMPANY MADE TO ITS COST OF**  
8 **EQUITY ANALYSIS?**

9 A. First, Mr. Moul adds 142-basis points to his Gas Group DCF model results and 160-basis  
10 points to his Subgroup DCF model results to account for a claimed leverage risk.<sup>64</sup>  
11 Second, in his CAPM analysis, Mr. Moul incorporates an inflated beta value which spurs  
12 a chain-like reaction, causing the market risk premium factor, and consequently, the cost  
13 of equity to be overstated in his CAPM model.<sup>65</sup> Third, Mr. Moul further distorts his  
14 CAPM result by adding a 102-basis point size adjustment to his recommended cost of  
15 equity.<sup>66</sup> Finally, Mr. Moul suggests a 25-basis point increase in recognition of claimed  
16 exemplary management performance.<sup>67</sup> Each of these adjustments as proposed by Mr.  
17 Moul are discussed in more detail below.

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<sup>64</sup> Peoples Statement No. 9, pp. 44-45.

<sup>65</sup> Peoples Statement No. 9, p. 43, lines 3-23.

<sup>66</sup> Peoples Statement No. 9, p. 48, lines 17-19.

<sup>67</sup> Peoples Statement No. 9, p. 6, lines 4-6.

1 **DCF ADJUSTMENT**

2 **Q. WHAT ADJUSTMENT HAS MR. MOUL ADDED TO THE RESULT OF HIS**  
3 **DCF ANALYSIS?**

4 A. Mr. Moul proposes to add a 142-basis point leverage adjustment to the results of his Gas  
5 Group DCF analysis and a 160-basis point leverage adjustment to the results of his  
6 Subgroup analysis to account for applying a market valued cost of equity to a book  
7 valued equity capital measure.<sup>68</sup>

8

9 **Q. WHAT IS FINANCIAL LEVERAGE?**

10 A. Financial leverage is the use of debt capital to acquire assets. It supplements equity  
11 capital in the acquisition process. A firm with significantly more debt than equity is  
12 considered to be highly leveraged.

13

14 **Q. WHAT IS A MARKET-TO-BOOK RATIO?**

15 A. A market-to-book ratio is used to evaluate a public firm's equity value. This is done by  
16 comparing the market value (M) and book value (B) of a company's equity. This can be  
17 calculated by dividing the current price per share of stock by the book value per share. A  
18 M/B result of greater than one (1) is desirable.

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<sup>68</sup> Peoples Statement No. 9, pp. 33-37.

1 **Q. IS MR. MOUL ADJUSTING THE RESULT OF HIS DCF ANALYSIS TO**  
2 **RECOGNIZE HOW THE COMPANY IS LEVERAGED?**

3 A. No. Mr. Moul does not propose to change the capital structure of the utility (a leverage  
4 adjustment), nor does he propose to apply the market-to-book ratio to the DCF model (a  
5 market-to-book adjustment). Instead, Mr. Moul is proposing to make an adjustment to  
6 account for applying the market value cost rate of equity to the book value of the utility's  
7 equity. To my knowledge, there is currently no term in academic journals or textbooks  
8 that describes this type of adjustment.

9  
10 **Q. WHAT IS THE BASIS FOR MR. MOUL'S PROPOSED LEVERAGE**  
11 **ADJUSTMENT?**

12 A. Mr. Moul theorizes that a leverage adjustment is needed when the results of the DCF  
13 model are applied to a capital structure (book value) that is different from what is  
14 indicated by the market price. He opines that the financial risk of the Gas Group is  
15 measured by the capital structure ratios calculated from the market capitalization of each  
16 company.<sup>69</sup> He claims that market value capital structures contain more equity, less debt,  
17 and therefore, less risk than book value capital structures.<sup>70</sup>

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<sup>69</sup> Peoples Statement No. 9, p. 34, lines 11-13.

<sup>70</sup> Peoples Statement No. 9, pp. 33-34.

1 Q. HOW DOES MR. MOUL CALCULATE THE LEVERAGE ADJUSTMENT USED  
2 IN HIS ANALYSIS?

3 A. Mr. Moul states:

4 I know of no means to mathematically solve for the 1.42% leverage adjustment by  
5 expressing it in terms of any particular relationship of market price to book value.  
6 The 1.42% adjustment is merely a convenient way to compare the 11.19% return  
7 computed directly with the Modigliani & Miller formulas to the 9.77% return  
8 generated by the DCF model based on a market value capital structure.<sup>71</sup>  
9

10 Q. HOW DOES MR. MOUL CALCULATE HIS CLAIMED 11.19% RETURN THAT  
11 HE COMPUTES DIRECTLY WITH THE MODIGLIANI AND MILLER  
12 FORMULAS?

13 A. Mr. Moul uses the following formulas:<sup>72</sup>

14 
$$k_u = k_e - (((k_u - i) 1 - t) D/E) - (k_u - d) P/E$$

15 and 
$$k_e = k_u + (((k_u - i) 1 - t) D/E + (k_u - d) P/E$$

16 **Where:**

17  $k_u$  = cost of equity for an all-equity firm

18  $k_e$  = market determined cost of equity

19  $i$  = cost of debt

20  $t$  = tax rate

21  $d$  = dividend rate on preferred stock

22  $D$  = debt ratio

23  $P$  = preferred stock ratio

24  $E$  = common equity ratio

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<sup>71</sup> Peoples Statement No. 9, p. 37, lines 10-12.

<sup>72</sup> Peoples Exhibit No. PRM-1, Schedule 10.

1 **Q. DO YOU AGREE WITH MR. MOUL'S LEVERAGE ADJUSTMENT?**

2 A. No. For several reasons, including mischaracterization of risk, precedent set by the  
3 Commission, and lack of academic support, Mr. Moul's adjustment is inappropriate.  
4 Additionally, his basis for the adjustment is inconsistent.

5  
6 **Q. HOW IS MR. MOUL'S BASIS FOR HIS LEVERAGE ADJUSTMENT  
7 INCONSISTENT?**

8 A. The premise for Mr. Moul's adjustment is his assertion that the DCF result cannot be  
9 applied, unadjusted, to the book value capital structure of the Company because the  
10 inputs (i.e., stock price, dividend yields, and growth rates) of the DCF model are market  
11 price values. Mr. Moul also claims his leverage adjustment is not intended as a means of  
12 performing a market-to-book adjustment to his DCF result;<sup>73</sup> however, the adjustment is  
13 predicated upon the difference of the market value and the book value of a firm's capital  
14 structure. He further contradicts the premise for his leverage adjustment by saying  
15 "...any observations concerning market prices relative to book are not on point."<sup>74</sup>

16  
17 **Q. EXPLAIN HOW FINANCIAL RISK IS ASSESSED BY RATING AGENCIES.**

18 A. Rating agencies assess financial risk based upon a company's booked debt obligations  
19 and the ability of its cash flow to cover the interest payments on those obligations. The  
20 agencies use a company's financial statements for their analysis, not market capital  
21 structure. The income statement reflects the financial risk of a company because it  
22 represents the performance of the company over a certain period of time. A change in the

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<sup>73</sup> Peoples Statement No. 9, p. 35, lines 11-13.

<sup>74</sup> Peoples Statement No. 9, p. 35, lines 10-11.

1 market value of the stock is not reflected in the income statement nor is a change in  
2 market value capital structure reflected in the book value capital structure unless treasury  
3 stock is purchased. It is a company's financial statements that affect the market value of  
4 the stock and, therefore, the financial statements and the book value capital structure that  
5 are relied upon in an analysis such as that done by rating agencies.

6  
7 **Q. TO YOUR KNOWLEDGE, WHAT ARE THE MOST RECENT COMMISSION**  
8 **DECISIONS REGARDING LEVERAGE ADJUSTMENTS?**

9 A. To my knowledge, the following cases are the most recent instances where the  
10 Commission has addressed the use of leverage adjustments. In both cases, the proposed  
11 leverage adjustment was denied.

12 *In Pennsylvania Public Utility Commission v. Aqua Pennsylvania, Inc.*, at Docket  
13 No. R-00072711 (Order Entered July 31, 2008), p. 38, the Commission rejected the  
14 ALJ's recommendation for a leverage adjustment stating, "[t]he fact that we have granted  
15 leverage adjustments in the past does not mean that such adjustments are indicated in all  
16 cases."

17 *In Pennsylvania Public Utility Commission, et al v. City of Lancaster – Bureau of*  
18 *Water*, at Docket No. R-2010-2179103 (Order Entered July 14, 2011), p. 79, the  
19 Commission agreed with the I&E position and stated, "any adjustment to the results of  
20 the market based DCF are unnecessary and will harm ratepayers. Consistent with our  
21 determination in *Aqua 2008* there is no need to add a leverage adjustment..."

22 Most recently, in the case of *Pennsylvania Public Utility Commission, et al v.*  
23 *UGI Utilities – Electric Division*, Docket No. R-2017-2640058 (Order Entered October

1 25, 2018), p. 93, the Commission stated "...we conclude that an artificial adjustment in  
2 this proceeding is unnecessary and contrary to the public interest. Accordingly, we  
3 decline to include a leverage adjustment in our calculation of the DCF cost of equity."

4  
5 **Q. DISCUSS THE LACK OF SUPPORT IN ACADEMIC LITERATURE FOR MR.**  
6 **MOUL'S LEVERAGE ADJUSTMENT.**

7 A. Mr. Moul cites to Modigliani and Miller's research about capital structure and cost of  
8 capital as justification for his leverage adjustment.<sup>75</sup> However, Mr. Moul has  
9 misinterpreted Modigliani and Miller's theory and used it in a way the researchers never  
10 advocated.

11 Modigliani and Miller's research was geared primarily toward understanding  
12 company capital investment behavior, not the financial risk associated with a stock's  
13 market price divergence from its book value.

14  
15 **Q. WHAT DOES THE WORK OF MODIGLIANI AND MILLER STATE ABOUT**  
16 **THE EFFECT OF THE TYPE OF CAPITAL EMPLOYED (DEBT OR EQUITY)**  
17 **UPON THE VALUE OF THE FIRM?**

18 A. The work of Modigliani and Miller supports a conclusion opposite to that of Mr. Moul,  
19 namely that "the market value of any firm is independent of its capital structure."<sup>76</sup>  
20 Moreover, as they state, "the value of any firm must be independent of its financial  
21 structure."<sup>77</sup>

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<sup>75</sup> Peoples Statement No. 9, p. 37, line 14.

<sup>76</sup> Modigliani, Franco and Miller, Merton H. "The Cost of Capital, Corporation Finance, and the Theory of Investment" *American Economic Review*, June 1958, p. 268.

<sup>77</sup> Modigliani, Franco and Miller, Merton H. "The Cost of Capital, Corporation Finance, and the Theory of Investment: Reply" *American Economic Review*, June 1965, p. 525.



1 **Q. ARE YOU AWARE OF ANY OTHER ACADEMIC LITERATURE THAT**  
2 **SUPPORTS MR. MOUL'S LEVERAGE ADJUSTMENT?**

3 A. No. I am not aware of any other academic literature that supports Mr. Moul's leverage  
4 adjustment. Furthermore, the formulas employed by Mr. Moul do not appear anywhere  
5 in the research he cites.

6  
7 **Q. PLEASE SUMMARIZE YOUR RECOMMENDATION REGARDING MR.**  
8 **MOUL'S LEVERAGE ADJUSTMENT?**

9 A. I recommend that Mr. Moul's 142-basis point and 160-basis point leverage adjustments  
10 be rejected. There is no academic support for such adjustments in a DCF setting, true  
11 financial risk is a function of the amount of interest expense, and the Commission, in its  
12 most recent cases considering the issue, has rejected leverage adjustments. Investors  
13 consider a company's leverage and market value capital structure ratios in the process of  
14 buying, holding, and selling its common equity. Investors that voluntarily buy and hold a  
15 company's stock at a price other than book value have accepted the gap between a  
16 company's market and book value capital structures and the level of return that the  
17 company's stock price implies. Share price is a key input to the DCF model; therefore,  
18 the divergence between market value and book value capital structures of the Gas Group,  
19 which serves as the foundation of Mr. Moul's leverage adjustments, has already been  
20 factored into the DCF. Mr. Moul's leverage adjustments serve only to tamper with the  
21 DCF's market-based methodology, and, in a manner that inflates his recommended return  
22 on equity. In short, no adjustment is needed.

1 **Q. WHAT WOULD MR. MOUL'S DCF RESULT BE WITHOUT HIS LEVERAGE**  
2 **ADJUSTMENT?**

3 A. Without his leverage adjustment, Mr. Moul's DCF model consists of a dividend yield of  
4 2.77% and a growth rate of 7.00%, resulting in a return on equity of 9.77%. For Mr.  
5 Moul's Subgroup, the DCF model dividend yield is 2.74% and its growth rate is 7.25%,  
6 indicating a return on equity of 9.99% for this proceeding.<sup>78</sup>

7

8 **INFLATED CAPM BETA**

9 **Q. HOW HAS MR. MOUL INFLATED THE BETA FIGURE USED IN HIS CAPM**  
10 **ANALYSIS?**

11 A. Mr. Moul calculated the average of the beta values published by Value Line for each  
12 company in his Gas Group. He then inflated the average from 0.67 to 0.84 using the  
13 same means he used to enhance his DCF returns: through a financial risk or leverage  
14 adjustment.<sup>79</sup> The beta values published by Value Line are already adjusted to account  
15 for the fact that, over time, they shift toward the Security Market Line value of 1.00.<sup>80</sup>  
16 Such enhancements are unwarranted for beta in a CAPM analysis for the same reasons  
17 that enhancements are unwarranted for DCF results. If the Value Line betas do not  
18 reflect an accurate investment risk as Mr. Moul contends, the question naturally arises as  
19 to why Value Line does not publish betas that are adjusted for leverage. Until this type of  
20 adjustment is demonstrated in academic literature to be valid, such leverage-adjusted  
21 betas in a CAPM should be rejected.

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<sup>78</sup> Peoples Exhibit PRM-1, Schedule 1.

<sup>79</sup> Peoples Statement No. 9, pp. 44-45.

<sup>80</sup> Andrew J. Cueter, "Using Beta," October 2, 2012, *Value Line Educational Article*.

1 **SIZE ADJUSTMENT**

2 **Q. WHAT IS MR. MOUL'S SIZE ADJUSTMENT?**

3 A. Mr. Moul's size adjustment consists of a 102-basis point addition to his CAPM indicated  
4 cost of common equity. He opines that as the size of a firm decreases, its risk and  
5 required return increases; therefore, the size adjustment is needed to account for his  
6 claimed size risk. Mr. Moul relies upon the work of Professor Brigham, technical  
7 literature including a Fama and French study, and an article published in *Public Utilities*  
8 *Fortnightly*.<sup>81</sup>

9  
10 **Q. WHY IS MR. MOUL'S SIZE ADJUSTMENT UNNECESSARY?**

11 A. Mr. Moul's size adjustment is unnecessary because none of the technical literature he  
12 cites supporting investment adjustments related to the size of a company is specific to the  
13 utility industry; therefore, such an adjustment is not relevant in the proceeding.

14  
15 **Q. IS THERE ANY ACADEMIC EVIDENCE THAT SUPPORTS YOUR**  
16 **CONCLUSION THAT THE SIZE ADJUSTMENT FOR RISK IS NOT**  
17 **APPLICABLE TO UTILITY COMPANIES?**

18 A. Yes. In the article "Utility Stocks and the Size Effect: An Empirical Analysis," Dr.  
19 Annie Wong concludes:

20 The objective of this study is to examine if the size effect exists in the utility  
21 industry. After controlling for equity values, there is some weak evidence that  
22 firm size is a missing factor from the CAPM for the industrial but not for utility  
23 stocks. This implies that although the size phenomenon has been strongly

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<sup>81</sup> Peoples Statement No. 9, p. 48, lines 5-19.

1 documented for the industrials, the findings suggest that there is no need to adjust  
2 for the firm size in utility rate regulation.<sup>82</sup>

3  
4 The Company presents no evidence to support the application of a non-utility study  
5 regarding a size adjustment for risk to a utility setting. Absent any credible article to  
6 refute Dr. Wong's findings, Mr. Moul's size adjustment to his CAPM results should be  
7 rejected.

8  
9 **Q. WHAT WOULD MR. MOUL'S CAPM RECOMMENDED COST OF EQUITY BE**  
10 **WITHOUT HIS SIZE AND BETA ADJUSTMENTS?**

11 A. Without his size and beta adjustments, Mr. Moul's CAPM analysis calculates as follows:

$$\begin{array}{rccccccccc} R_f & + & \beta & \times & (R_m - R_f) & + & \text{size} & = & k \\ 3.75\% & + & 0.67 & \times & (8.56\%) & + & 0 & = & 9.49\% \end{array}$$

12  
13  
14  
15 Mr. Moul's CAPM model, without adjustments, results in a 9.49% return on equity.

16  
17 **MANAGEMENT RECOGNITION POINTS**

18 **Q. WHAT IS THE COMPANY'S REQUEST FOR MANAGEMENT RECOGNITION**  
19 **POINTS?**

20 A. Mr. Moul explains that his 11.25% cost of equity recommendation includes 25 basis  
21 points in consideration of the Company's exemplary management performance.<sup>83</sup> Mr.  
22 Moul points to the testimony of Company Witness O'Brien to support his increase to the  
23 requested return on equity.<sup>84</sup>

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<sup>82</sup> Wong, Annie, "Utility Stocks and the Size Effect: An Empirical Analysis" *Journal of the Midwest Finance Association* (1993): 95-101.

<sup>83</sup> Peoples Statement No. 9, p. 6, lines 5-6.

<sup>84</sup> Peoples Statement No. 9, p. 6, lines 7-9.

1 **Q. WHAT EVIDENCE DOES MR. O'BRIEN PROVIDE AS EXCEPTIONAL**  
2 **MANAGEMENT PERFORMANCE?**

3 A. Mr. O'Brien claims that Peoples' exceptional management performance is demonstrated  
4 through among other things, its LTIP plan and investment in infrastructure, community  
5 support and volunteerism, safety record, commitment to support and encourage natural  
6 gas production, and customer service initiatives with respect to improvements in  
7 appointment scheduling, increased bill payment options offered to its customers, and  
8 meeting performance metrics.<sup>85</sup>

9

10 **Q. WHAT IS YOUR RECOMMENDATION REGARDING THE CONSIDERATION**  
11 **OF 25 ADDITIONAL BASIS POINTS FOR THE COMPANY'S MANAGEMENT**  
12 **PERFORMANCE?**

13 A. Ultimately, for any company, true management effectiveness is earning a higher return  
14 through its efficient use of resources and cost cutting measures. The greater net income  
15 resulting from cost savings and true efficiency in management and operations is available  
16 to be passed on to shareholders. I do not feel that Peoples, or any utility should be gifted  
17 additional basis points for doing what they are required to do in order to provide  
18 adequate, efficient, safe, and reasonable service under 66 Pa C.S.A. §1501.

19 Furthermore, the 2017 Customer Service Performance Report for Pennsylvania  
20 Electric and Gas Distribution Companies (Issued August 2018) notes the following  
21 deficits regarding Peoples customer service that further illustrate why awarding  
22 management recognition points would be inappropriate:

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<sup>85</sup> Peoples Statement No. 1, pp. 8-20.

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- Page 11 – Peoples percent of calls answered within 30 seconds has steadily declined since 2015;
- Page 16 – Peoples number of residential meters not read in 6 months has steadily increased since 2015;
- Page 38 – Peoples’ customer’s satisfaction with the way field representatives handled premise visits and customer satisfaction that work was completed promptly has declined since 2015;
- Page 39 – Peoples’ customer’s satisfaction with field representative’s respect for their property has declined from 2015 to 2017;

For these reasons, I recommend that any addition of basis points to the cost of equity for management effectiveness be disallowed.

**OVERALL RATE OF RETURN**

**Q. WHAT IS THE COMPANY’S PROPOSED OVERALL RATE OF RETURN?**

A. The Company’s proposed overall rate of return is 8.00% (Peoples Exhibit No. PRM-1, Schedule 1).

**Q. WHAT IS I&E’S RECOMMENDED OVERALL RATE OF RETURN?**

A. I&E Exhibit No. 2, Schedule No. 1 shows the calculation of an appropriate overall rate of return for Peoples to be 6.71%.

1 Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

2 A. Yes.

**CHRISTOPHER M. HENKEL**  
**PROFESSIONAL EXPERIENCE AND EDUCATION**

---

**EMPLOYMENT:**

Fixed Utility Financial Analyst 2018 – Present	PA Public Utility Commission Bureau of Investigation & Enforcement
Transportation Analyst 1 year	Woodstream Corporation
Senior Payroll Coordinator 12 years	Susquehanna Bancshares, Inc.

**EDUCATION/CERTIFICATION:**

Millersville University, B.S. Business Administration / Finance – 2016

Certificate, Eastern NARUC Utility Rate School, Michigan State University

51<sup>st</sup> Annual SURFA Conference, New Orleans, LA - 2019

Certificate, Bloomberg Market Concepts

**TESTIMONY SUBMITTED:**

R-2018-2647577	Columbia Gas of Pennsylvania, Inc.
R-2018-3000019	The York Water Company
R-2018-3001306	Hidden Valley Utility Services, L.P. – Water
R-2015-3001307	Hidden Valley Utility Services, L.P. – WW
R-2018-3003141	Borough of Indiana – Sewer Fund
R-2018-3003558	Aqua Pennsylvania, Inc.
R-2018-3003561	Aqua Pennsylvania Wastewater, Inc.

**ASSISTED WITH THE FOLLOWING CASES:**

R-2017-2640058	UGI Utilities, Inc. – Electric Division
R-2018-3000124	Duquesne Light Company
R-2018-3000164	PECO Energy Company
P-2018-3006500	Valley Energy, Inc.



Pennsylvania Public Utility Commission


v.

Peoples Natural Gas Company LLC

Docket No. R-2018-3006818

**VERIFICATION**

I, Christopher Henkel hereby state that the facts set forth in the foregoing document are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at any hearing. I understand that the statements herein are made subject to the penalties of 18 Pa. C.S. §4904 (relating to unsworn falsification to authorities)

  
\_\_\_\_\_  
Christopher Henkel

Apr 24 2019  
Date