# FLORIDA DIVISION OF
# CHESAPEAKE UTILITIES CORPORATION

Docket No. 000108-GU

Rebuttal Testimony

of

Paul R. Moul, Managing Consultant
P. Moul & Associates, Inc.

Concerning
Cost of Equity

1    **Q. Please state your name, occupation and business address.**

2    A. My name is Paul R. Moul and I am Managing Consultant at P. Moul & Associates, Inc. My

3    business address is Cherry Tree Corporate Center, 535 Route 38 East, Suite 200, Cherry Hill,

4    New Jersey 08002-2953.

5    **Q. Mr. Moul, have you previously submitted Direct Testimony in this proceeding?**

6    A. Yes. My direct testimony and associated financial data was submitted with the Company's case-

7    in-chief on May 15, 2000.

8    **Q. What is the purpose of your Rebuttal Testimony?**

9    A. The Florida Division of Chesapeake Utilities Corporation ("Florida Division" or the "Company")

10    has requested that I comment on and rebut the testimony presented by Mr. David J. Draper, a

11    witness appearing on behalf of the Staff of the Florida Public Service Commission.

12    **Q. Do you have exhibits to accompany your rebuttal testimony?**

13    A. Yes. I have prepared Composite Exhibit No. PRM-3 consisting of 9 schedules to accompany

14    my rebuttal testimony.

15    **Q. Before proceeding with your rebuttal, please describe some of the market events that have**

16    **transpired since the time your direct testimony was prepared.**

17    A. During the past fifteen months, the Federal Reserve Board's Open Market Committee has

18    significantly tightened monetary conditions by increasing the Fed Funds rate on six occasions

19    (i.e., June 30, 1999, August 24, 1999, November 16, 1999, February 2, 2000, March 21, 2000,

20    and May 16, 2000). In taking its action on February 2, the Open Market Committee stated:

21        "The Committee remains concerned that over time increases in demand will
22        continue to exceed the growth in potential supply, even after taking account of
23        the pronounced rise in productivity growth. Such trends could foster

1  inflationary imbalances that would undermine the economy's record economic
2  expansion."
3
4
5  On May 16, the Open Market Committee reiterated its position by stating:
6
7  "Increases in demand have remained in excess of even the rapid pace of
8  productivity-driven gains in potential supply, exerting continued pressure on
9  resources. The Committee is concerned that this disparity in the growth of
10  demand and potential supply will continue, which could foster inflationary
11  imbalances that would undermine the economy's outstanding performance."
12
13  "Against the background of its long-term goals of price stability and sustainable
14  economic growth and of the information already available, the Committee
15  believes the risks are weighted mainly toward conditions that may generate
16  heightened inflation pressures in the foreseeable future."
17
18  The Fed Funds rate has increased by one and three quarters percentage points (i.e., 1.75%) rising

19  to 6.50%, its highest level since the first quarter of 1991. The discount rate is now up by one

20  and one-half percentage points from its low in the fourth quarter of 1998, which coincided with

21  the height of the Asian currency and stock market crisis. Against this backdrop, additional rate

22  increases cannot be ruled out, especially after the presidential election, if inflationary pressures

23  persist.

24  Q.  **How has the Fed's policy impacted the yields on corporate bonds?**

25  A.  Since February 2000 (the latest bond yields contained in my original financial data), the yield on

26  A rated public utility bonds has remained essentially unchanged, albeit it increased through May

27  and declined thereafter (see Composite Exhibit No. PRM-3, Schedule 1). While the cost of

28  corporate capital has remained at about the same levels in July that it was in February 2000, the

29  yield on 30-year Treasury bonds has fallen. As shown by the data presented graphically on

30  Composite Exhibit No. PRM-3, Schedule 2, the interest rate spread between the yields on 30-

31  year Treasury bonds and A rated public utility bonds has expanded from the unusually high levels

1  that I described in my direct testimony. As I described therein, the spread between the yield on

2  A rated public utility bonds and Treasury bonds was about 1.75 percentage points in 1999 (see

3  page 4 of Schedule 10 of Composite Exhibit No. PRM-1). As shown on Composite Exhibit No.

4  PRM-3, Schedule 2, the yield spread between corporate and Treasury bonds has expanded to

5  2.48 percentage points in the second quarter of 2000. This situation continues to point to the

6  high cost of corporate capital vis-a-vis the yield on Treasury obligations.

7  Q.  **Will you identify the areas of controversy concerning the Company's rate of return in this**

8  **proceeding?**

9  A.  The central areas of dispute between Mr. Draper and the me in this case involve: (i) the selection

10  of proxy companies to measure the cost of equity, (ii) the determination of a reasonable DCF

11  cost rate, and (iii) the proper inputs to be used in the CAPM measure of the cost of equity.

12  Q.  **Do you agree with the selection of proxy companies used by Mr. Draper?**

13  A.  Not specifically. I have concerns with the companies that Mr. Draper has used to measure the

14  cost of equity. First, he has employed many of the companies from the Value Line source

15  without narrowing his group further for the risks associated with the Company. Second, he has

16  not eliminated companies that are targets of mergers and acquisitions (M&A).

17  Three companies within the Value Line Group should be eliminated from the proxy group

18  because they are now or recently have been the targets of acquisition. Those companies are

19  CTG Resources, Providence Energy, and Southwest Gas. In an industry significantly influenced

20  by consolidation, the stock prices of the target companies become substantially influenced by

21  acquisition premiums that make a cost of equity determination for those companies problematic.

22  M&A activity has implications for the dividend yield component of the DCF and the growth

1    component of the DCF.

2  Q.  **What specific problems arise when using companies that are targets in M&As?**

3  A.  The M&A activity has a significant impact on investor expected growth. Due to the proposed

4    acquisitions, there has been the run-up in stock prices of the gas utilities related to M&A

5    expectations, either announced or anticipated. This price action has fundamentally changed the

6    investment horizon associated with investors' growth expectations for the gas utilities.

7    Investment horizons have shortened considerably in the context of prices offered in proposed

8    M&A transactions. In the application of the DCF model, future returns are sometimes

9    considered as an infinite number of growing dividends. However, when a company is the target

10    of an acquisition, such as the three companies identified previously, a more defined number of

11    cash flows is reflected in the stock price with particular emphasis being placed on the acquisition

12    price (i.e., the liquidating dividend) of the stock. That is to say, today's stock price is the product

13    primarily of the buy-out price of the stock and not an infinite dividend stream. As such, the long-

14    term horizon of future dividend payments ceases to be the focus of investors. Rather, the

15    acquisition price becomes the paramount consideration because the future value of the stock is

16    established by reference to the acquisition price along with dividend payments that occur up to

17    the time the company is acquired and its stock no longer trades.

18    Further, when a premium is offered to obtain control of a target company and to induce

19    existing stockholders to sell their shares, the stock price disconnects from the earnings forecasts

20    made by securities' analysts when the target company operated independently. After the

21    combination occurs in the merger/acquisition, the surviving company will be able to attain

22    increased shareholder value through economics of scope and scale that increase productivity and

1 profitability to the point where earnings growth will exceed that which was attainable by the pre-

2 merger company. Synergies, such as those mentioned above, are the reason that acquiring

3 companies can offer premiums over pre-announcement stock prices and still anticipate that the

4 acquisition will be accretive to earnings and add shareholder value. Otherwise, acquisitions at

5 premiums would not be economically feasible. While the circumstances described above apply

6 directly to target companies that have agreed to be acquired, similar expectations are reflected

7 in the stock prices of other gas utilities that represent potential candidates for acquisition. That

8 is to say, the stock prices of many gas utilities include some expectation that they may become

9 the target of a takeover during the consolidation of the industry. Stated another way, many gas

10 company stocks reflect some expectation related to M&A activity, just as a rising tide lifts all

11 boats.

12 Q. **What would be the DCF result based upon Mr. Draper's calculations after eliminating the**

13 **three companies that you identified above?**

14 A. As shown on Composite Exhibit No. PRM No. 3, Schedule 3, I have eliminated CTG Resources,

15 Providence Energy, and Southwest Gas from the Value Line group used by Mr. Draper. There,

16 the DCF return is 10.97%. Hence, the change in the composition of the group has a significant

17 impact on the final results. Indeed, the cost of equity increases by 0.69% (10.97% - 10.28%)

18 when the companies subject to M&A are removed.

19 Q. **Do you have any general comments concerning the DCF method?**

20 A. In order for an analyst to properly apply the DCF method, he/she must be sensitive to a particular

21 company's capital needs, risk profile, and credit quality. Failure to consider these important

22 factors will be unfair to the utility and will lead to a higher future cost of capital (both debt and

1   equity).   This is because the cost of capital, like other items of revenues, expenses and

2   investment, must be reflective of the risks which will prevail during the effective period of the

3   new rates.  If the DCF approach cannot cope with general capital market fundamentals, then

4   either the assumptions underlying the DCF method are incomplete or the approach is not being

5   properly implemented.  The DCF model is useful in measuring the cost of equity, but only in

6   conjunction with other methods.  The investment community uses the DCF model and other

7   models in its analysis of common stocks.  Likewise, many regulators typically review the results

8   of multiple methods.  Moreover, in response to the NARUC survey, this Commission indicated

9   that all methods are considered, (see, for example, Utility Regulatory Policy in the United States

10  and Canada 1994-95).

11  **Q.   What form of the DCF model is typically employed in public utility ratesetting?**

12  A.   The constant growth or "Gordon" form of the DCF model is typically used in public utility

13  ratesetting.  In both the Gordon and other forms of the DCF, there is an element of circularity

14  in the DCF model when applied in rate cases.  This is because investors' expectations for the

15  future depend upon regulatory decisions.  Therefore, the use of the DCF in rate cases ensures

16  that regulators will continue to provide high growth companies with a return which sustains that

17  performance.  On the other hand, the use of the DCF for low growth companies perpetuates that

18  performance and hinders any improvement. Due to this circularity, the DCF model may not fully

19  reflect the true risk of a regulated firm.

20  **Q.   Please describe Staff's DCF model.**

21  A.   Mr. Draper has used a DCF model that is based generally upon specific cash flows representing

22  dividend amounts for the next four years plus a terminal cash flow that includes the dividends

1    in the fifth year plus the selling price of the stock, (i.e., the liquidation dividend). From those

2    specific cash flows, Mr. Draper used an internal rate of return ("IRR") approach to produce his

3    DCF result.

4   **Q.**   **Are there shortcomings associated with the implementation of this model?**

5   A.   There are shortcomings inherent in the application of all models that attempt to represent

6    complex expectations of investors. As to the Staff model, the liquidating dividend represents the

7    capitalized value (i.e., price of the stock) of the terminal year dividend which is determined from

8    the resulting cost of equity. This involves an iterative process where an input is a function of

9    result. That dividend in the fifth year has been capitalized at the dividend yield ("D/P") that has

10    been assumed from the cost of equity less the long-term growth rate. The analysis is

11    substantially influenced by the (i) the return on equity forecast by Value Line, (ii) the dividend

12    payout ratio that is revealed by the relationship of Value Line's forecast of earnings per share and

13    dividends per share in the terminal year, and (iii) the implied market-to-book value ratio.

14   **Q.**   **Can you show how these factors are interrelated in Staff's cash flow analysis?**

15   A.   Staff's cash flow analysis is essentially equivalent to the retention growth representation of the

16    DCF model. Unfortunately, this form of the DCF mixes accounting returns and market returns

17    in the following manner:

$$\begin{array}{c} \textbf{E/B} \\ \textbf{-D/B} \\ \underline{\textbf{+D/P}} \\ \underline{\textbf{ROE}} \end{array}$$

where:   E  = earnings per share
D  = dividend per share
B  = book value per share
P  = price per share
ROE  = return on equity

1      The retention growth form of the DCF does not adequately reflect investor expectations of total

2      returns. Since retention growth is intended to describe growth in book value, this method is

3      inappropriate because investors do not necessarily realize growth in the value of their investment

4      at the retention growth rate because utility share prices do not always trade at a constant multiple

5      of book value. I have listed some of the other factors which contribute to earnings growth that

6      are not accounted for by the retention growth approach (see Composite Exhibit No. PRM-2,

7      Appendix E, page E-10).

8    **Q.**    **Can you demonstrate how this has occurred?**

9    A.    Essentially, there are three inputs necessary to solve for the results of the Staff's DCF model.

10      Those are: (i) an assumed return on book common equity ("E/B"), (ii) an assumed dividend

11      payout ratio ("D/E"), and (iii) an assumed market-to-book ratio ("P/B"). For the Natural Gas

12      Distribution Companies, those inputs are: E/B = 12.80%, D/E = .559, and P/B = 1.543. The

13      resulting DCF return, expressed with these values, is:

14          $E/B \quad - \quad D/B \quad + \quad D/P \quad = \quad k$

15          $12.80\% - (12.80\% \times .559) + (12.80\% \times .559) \div 1.543) = 10.28\%$

16      As can be seen from the expression above, the assumed return on book value ("E/B") represents

17      a key component of each term in the Staff's DCF analysis. The E/B is dependent upon the

18      forecast of a single Value Line analyst. A similar representation of the DCF analysis for the

19      Electric Utilities is:

20          $E/B \quad - \quad D/B \quad + \quad D/P \quad = \quad k$

21          $13.55\% - (13.55\% \times .544) + (13.55\% \times .544) \div 1.552) = 10.93\%$

22      Another problem with the approach involves the Value Line forecast of E/B which is based upon

-8-

1     year-end book values. This results in a downward bias because an average book value should

2     be used that produces a higher E/B value. The method to convert the year-end equity return to

3     the average equity return involves the formula $2(1+G)/(2+G)$.

4   **Q. What would the 12.80% ROE forecast by Value Line become with the conversion from**

5       **year-end to average book values?**

6   A.   The forecast return on book common equity must be adjusted by the growth in common equity

7     for the period to derive an average yearly return. The average yearly return ("E/B") is thus

8     13.1516% rather than 12.8%, as shown on Composite Exhibit No. PRM-3, Schedule 4. The

9     resulting cost of equity would be 10.42%

10   **Q. What are the results of the Staff's model if the return on average book value was included**

11      **for the natural gas distribution group when CTG Resources, Providence Energy, and**

12      **Southwest Gas were removed?**

13   A.   Those results are shown on Composite Exhibit No. PRM-3, Schedule 5. There, the cost of

14     equity is shown to be 11.11%.

15   **Q. As to the DCF growth component, what financial variables should be given greatest**

16      **weight when assessing investor expectations?**

17   A.   The theory of DCF indicates that the value of a firm's equity (i.e., share price) will grow at the

18     same rate as earnings per share. Therefore, to properly reflect investor expectations within the

19     limitations of the DCF model, earnings per share growth which is the basis for the capital gains

20     yield and the source of dividend payments must be given primary emphasis.

21   **Q. Are there other reasons that earnings growth should be emphasized?**

22   A.   Yes. Earnings per share growth is the primary determinant of investor expectations concerning

1    their total returns in the stock market. The capital gains yields (i.e., price appreciation) will track

2    earnings growth with a constant price earnings multiple (a key assumption of the DCF model).

3    Moreover, *it is instructive to note that Professor Myron Gordon, the foremost proponent of the*

4    *DCF model in rate cases and the individual whose name is most commonly associated with the*

5    *DCF model, has determined that the best measure of growth in the DCF model is analysts'*

6    forecasted earnings per share growth[1]. Hence, to follow Professor Gordon's findings, earnings

7    per share forecasts must be given primary weight.

8         On Composite Exhibit No. PRM-3, Schedule 6, I have provided the forecasts of earnings

9    per share from I/B/E/S, Zacks, First Call, and Value Line. The I/B/E/S, Zacks, and First Call

10   growth rates are consensus forecasts taken from a survey of analysis that make projections of

11   growth for these companies. The Zacks and First Call estimates are obtained from the Internet

12   and are widely available to investors, free-of-charge. The Value Line forecasts are also widely

13   available to investors and can be obtained by subscription or free-of-charge at most public and

14   collegiate libraries. The I/B/E/S forecasts can be obtained by subscription, or through the S&P

15   Earnings Guide -- the source I have used in this case. As shown by the data contained on

16   Composite Exhibit No. PRM-3, Schedule 6, the average earnings per share growth rate forecast

17   is 6.36% for Mr. Draper's proxy group.

18   **Q.**   **Have other regulatory agencies employed forecasts of earnings per share growth in a**

19        **multi-stage DCF?**

20   **A.**   Yes. The Federal Energy Regulatory Commission ("FERC") has used a form of the DCF that

21        includes multiple growth rates. These growth rates are then weighted and used in the simplified

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22          [1]     "Choice Among Methods of Estimating Share Yield," The Journal of Portfolio Management,
23                 Spring 1989 by Gordon, Gordon & Gould.

1    constant growth DCF model (i.e., the Gordon model). The FERC has evolved its approach in

2    natural gas pipeline orders, including Northwest (79 FERC ¶61,309) Williston Basin (79 FERC

3    ¶61,311), and Transco (84 FERC ¶61,084). FERC began its transition from single to two-stage

4    growth rates in 1994, with its Ozark (68 FERC ¶61,032) decision.

5    **Q.   How has the FERC weighted the two growth rates that is considered important?**

6    A.   The FERC has assigned two-thirds (66.7%) weight to the analysts' forecasts of earnings per

7    share growth and one-third (33.3%) weight to long-term growth. The FERC has used economy

8    wide measures for gauging long-term growth. The reasons given by the FERC for this process

9    were:

10   •   As companies reach maturity over the long-term, their growth slows and their growth
11       rate approaches that of the economy as a whole.
12

13   •   Over the long run, it is reasonable to expect that a regulated firm will grow at the rate
14       of the average firm in the economy, because regulation will generally prevent the firm
15       from being extremely profitable during good periods, but also protects it during bad
16       periods.
17

18   •   The purpose of using the DCF analysis is to approximate the rate of return an investor
19       would reasonably expect from a pipeline company, and that the long-term growth of the
20       economy was used by two large investment houses in conducting the DCF analysis for
21       investment purposes.

22   •   Witnesses have used long-term growth of the economy as a whole as confirmation or
23       support for their own analysis.

24   **Q.   How would you propose to incorporate long-term growth into a two stage DCF analysis?**

25   A.   I propose the use of consensus forecasts of long-term growth that are widely available to

26   investors which would have an influence on the stock prices. In this regard, I propose that the

27   long-term consensus forecast that is published semi-annually by the Blue Chip Economic

28   Indicators ("Blue Chip") should be used as one source of the second-step growth. Blue Chip is

1    a monthly publication that provides forecasts incorporating a wide variety of economic variables

2    assembled from a panel of more than 50 noted expert economists from the banking, investment,

3    industrial, and consulting sectors whose advice affects the investment activities of market

4    participants. It is always preferable to use a consensus forecast taken from a large panel of

5    contributors, rather than to rely upon a narrow sample, or a single source of a forecast. Blue

6    Chip contributors include Bear Stearns, Goldman Sachs, First Union, J.P. Morgan WEFA,

7    Merrill Lynch, Prudential Securities, Moody's and Standard & Poor's. Indeed, Blue Chip is

8    frequently quoted in "The Wall Street Journal," "The New York Times," "Fortune," "Forbes,"

9    and "Business Week."

10   **Q.    What are the Blue Chip forecasts?**

11   A.    The March 10, 2000 Blue Chip long-term forecasts were: 3.1% in real GDP growth; 2.1% in the

12   GDP deflator; 5.2% in nominal GDP growth; and 5.6% in corporate profits (pre-tax). These

13   forecasts are part of an eleven-year horizon.

14   **Q.    Are you aware of other respected surveys of economic growth?**

15   A.    Yes. The Federal Reserve Bank of Philadelphia's Research Department conducts a quarterly

16   survey of forecasts of economic variables prepared by private sector economists. Philadelphia

17   Fed's "The Survey of Professional Forecasters" is a successor to an earlier survey that was begun

18   in 1968 by the American Statistical Association and the National Bureau of Economic Research.

19   Annually, the Philadelphia Fed's survey compiles long-term, defined as 10-years, forecasts of real

20   GDP growth, inflation, and other economic and financial variables. Although this survey

21   maintains the anonymity of the contributors, the 36 participants were from Wall Street financial

22   firms (13 contributors), banks (8 contributors), economic consulting firms (5 contributors),

-12-

1  university research centers (3 contributors), and private firms including chief economists at

2  Fortune 500 firms (7 contributors).  In its first quarter 2000 survey, the Philadelphia Fed released

3  the following forecasts: 3.05% median and 3.097% mean for the growth in real GDP and 2.50%

4  median and 2.506% mean for inflation as measured by the Consumer Price Index.  These forecast

5  confirm the reasonableness of the long-term Blue Chip forecasts.

6  **Q.  How have you used these data to develop the second-stage growth rate?**

7  A.  I have summarized these data on Composite Exhibit No. PRM-3, Schedule 6.  On that schedule,

8  I have provided the forecasts of GDP growth and growth in corporate profits available from Blue

9  Chip.  I have used these data along with the five year forecasts previously described.  I gave two-

10  thirds weight to the earnings per share forecasts and one-third weight to the economy wide long-

11  term forecast.  As shown on Composite Exhibit No. PRM-3, Schedule 7.  I have computed the

12  dividend yields for Mr. Draper's group using the data that he provided on Exhibit DJD-4.

13  Finally, my Composite Exhibit No. PRM-3, Schedule 8, provides the DCF results using the

14  dividend yields and growth rates described previously.

|  | Using 5.2% Second Step Growth (pages 1 and 3) | Using 5.6% Second Step Growth (pages 2 and 4) |
|---|---|---|
| Staff's Proxy Group | 11.01% | 11.14% |
| Commission's Proxy Group | 11.55% | 11.69% |

21  **Q.  Mr. Draper has also used the CAPM to measure the cost of equity.  Have you detected any**

22  **problems with his application of this model?**

23  A.  I have detected two potential problems with his application of the CAPM.  First, and most

24  importantly, the 11.89% total market return used by Mr. Draper is entirely too low.  Second, Mr.

25  Draper made no provision in the CAPM for flotation costs.

1    **Q.**    **Please address the issue of the total market return.**

2    A.    Focusing principally upon forecasts of the total return that could be expected for the future,

3    Zacks and Value Line provide valuable evidence of the type of returns that investors could

4    expect for the future. In this regard, Composite Exhibit No. PRM-3, Schedule 9 shows the

5    inputs available from Value Line. According to the September 1, 2000 edition of Value Line,

6    the median total return that could be expected from the 1,700 stocks that it follows would be:

| | Dividend Yield | | Appreciation Potential | | Total Market Return |
|---|---|---|---|---|---|
| September 1, 2000 | 2.2% | + | 15.8%[2] | = | 18.0% |

11    Supplementing this return, Zacks forecasts that the five-year earnings per share growth rate is

12    12.1% for the S&P 500. Using the average July 2000 dividend yield for the S&P 500 of 1.13%

13    $(16.11 \div 1465.70)$, the DCF cost rate for the S&P 500 is:

$$D_0/P_0 \quad (1 + .5g) \quad + \quad g \quad = \quad k$$

$$1.10\% \quad (1.0605) \quad + \quad 12.1\% \quad = 13.3\%$$

16    **Q.**    **What total market return would you propose in the CAPM?**

17    A.    Using the Zacks and Value Line sources, the total market return that I propose would be 15.65%

18    $(18.0\% + 13.3\% = 31.3\% \div 2)$. This return is reasonable in today's market given the actual

19    performance of the S&P 500 over the past several years, whereby the total return has been:

20    21.04% in 1999, 28.58% in 1998, 33.36% in 1997, 23.07% in 1996, and 34.43% in 1995.

21    **Q.**    **What CAPM cost rate have you calculated with a 15.65% total market return?**

22    A.    The CAPM cost rate would be:

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23       [2]     The estimated median price appreciation potential is forecast to be 80% for 3 to 5 years
24              hence. The annual capital gains yield measured at the 4-year midpoint of the forecast is
25              15.8% $(1.80^{.25} - 1)$.

1 $$Rf + \beta \quad (Rm - Rf) = k$$

2 $$6.02\% + .60 \; (15.65\% - 6.02\%) = 11.80\%$$

3 An adjustment for flotation costs would increase this return.

## SUMMARY

5 Q. **Please summarize your rebuttal testimony.**

6 A. In my opinion, the equity return recommended by Mr. Draper should be increased. My

7 calculation of the DCF returns provides costs rates of 11.01% to 11.69%. I would urge the

8 Commission to focus on the returns after excluding the results for M&A take over targets.

9 Those DCF results would be 11.55% to 11.69%. The CAPM cost rate is 11.80%. As such a

10 reasonable cost of equity would be 11.75% prior to adjusting for the Florida Division's higher

11 risk profile. Those adjustments would include 37 basis points for the Florida Division's smaller

12 size and 65 basis points for competitive risks which would increase the cost of equity by about

13 one percentage point (1.00%) according to Mr. Draper. These risk adjustments would therefore

14 produce a 12.75% (11.75% + 1.00%) cost of equity for the Florida Division which is close to

15 the 13.0% that I recommended for the Company in my direct testimony.

16 Q. **Does this conclude your rebuttal testimony?**

17 A. Yes.

# FLORIDA DIVISION OF
# CHESAPEAKE UTILITIES CORPORATION

Docket No. 000108-GU

Financial Exhibits

to Accompany

the Rebuttal Testimony

of

Paul R. Moul, Managing Consultant
P. Moul & Associates, Inc.

# Interest Rate Trends for Investor-Owned Public Utility Bonds
## Yearly for 1995-1999
## and the Twelve Months Ended July 2000

| Years | Aaa Rated | Aa Rated | A Rated | Baa Rated | Average |
|---|---|---|---|---|---|
| 1995 | 7.68% | 7.77% | 7.89% | 8.29% | 7.91% |
| 1996 | 7.49% | 7.57% | 7.75% | 8.17% | 7.75% |
| 1997 | 7.42% | 7.54% | 7.60% | 7.95% | 7.63% |
| 1998 | 6.77% | 6.91% | 7.04% | 7.26% | 7.00% |
| 1999 | 7.21% | 7.50% | 7.62% | 7.88% | 7.55% |
| **Five-Year Average** | 7.31% | 7.46% | 7.58% | 7.91% | 7.57% |

### Months

| | Aaa Rated | Aa Rated | A Rated | Baa Rated | Average |
|---|---|---|---|---|---|
| August 1999 | 7.54% | 7.82% | 7.91% | 8.16% | 7.86% |
| September 1999 | 7.55% | 7.80% | 7.93% | 8.19% | 7.87% |
| October 1999 | 7.73% | 7.96% | 8.06% | 8.32% | 8.02% |
| November 1999 | 7.56% | 7.82% | 7.94% | 8.12% | 7.86% |
| December 1999 | 7.74% | 8.00% | 8.14% | 8.28% | 8.04% |
| January 2000 | 7.95% | 8.17% | 8.35% | 8.40% | 8.22% |
| February 2000 | 7.82% | 7.99% | 8.25% | 8.33% | 8.10% |
| March 2000 | 7.87% | 7.99% | 8.28% | 8.40% | 8.14% |
| April 2000 | 7.87% | 8.00% | 8.29% | 8.40% | 8.14% |
| May 2000 | 8.22% | 8.44% | 8.70% | 8.86% | 8.55% |
| June 2000 | 7.96% | 8.10% | 8.36% | 8.47% | 8.22% |
| July 2000 | 8.00% | 8.10% | 8.25% | 8.33% | 8.17% |
| **Twelve-Month Average** | 7.82% | 8.02% | 8.21% | 8.36% | 8.10% |
| **Six-Month Average** | 7.96% | 8.10% | 8.36% | 8.47% | 8.22% |
| **Three-Month Average** | 8.06% | 8.21% | 8.44% | 8.55% | 8.31% |

urce of Information:   Moody's Investors Services, Inc.
(Public Utiltiy Manuals and Bond Surveys)

# Interest Rate Spreads
## A-rated Public Utility Bonds
## over 30-year Treasury Bonds

Percentage Points
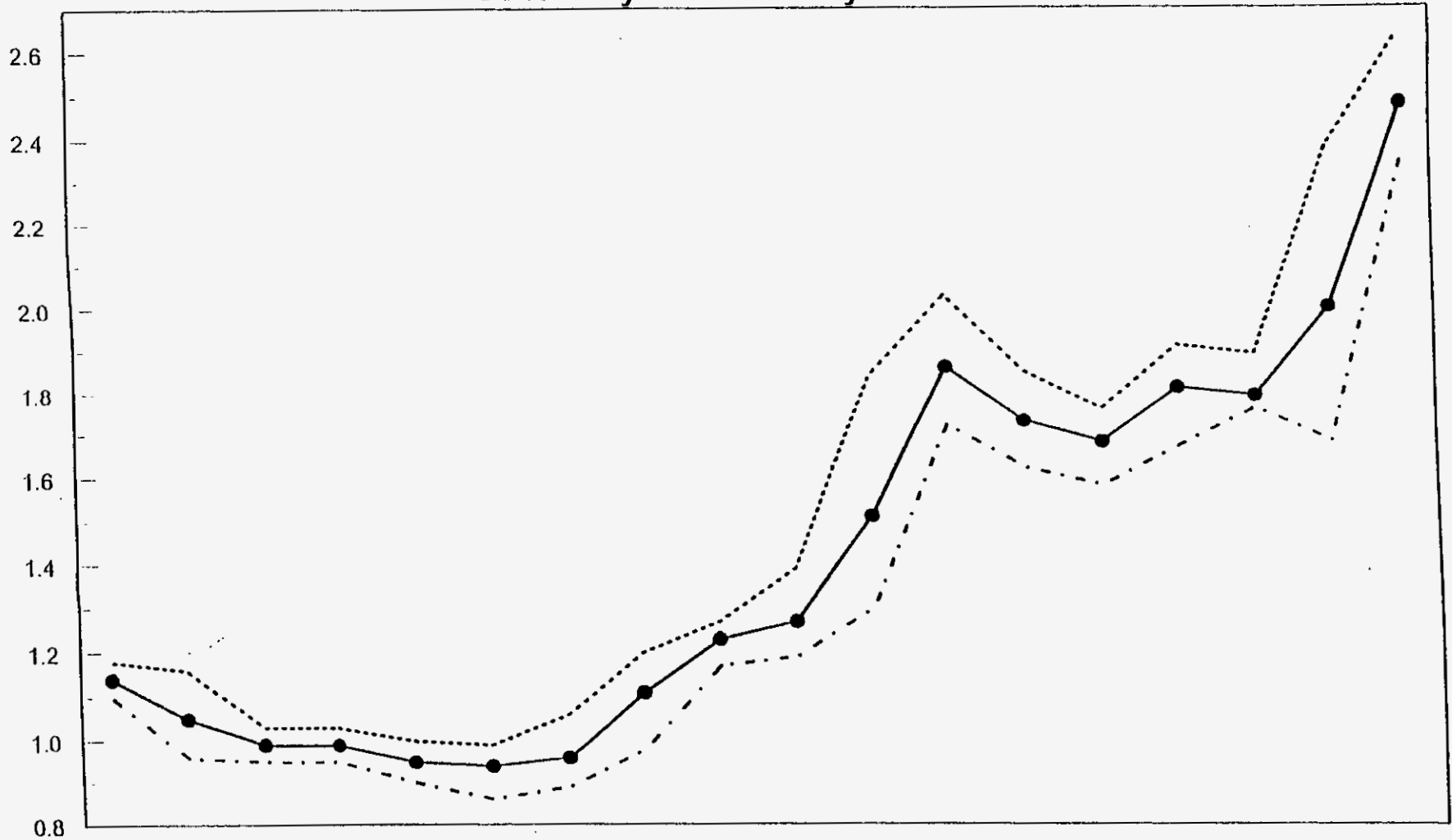


| | Mar-96 | Jun-96 | Sep-96 | Dec-96 | Mar-97 | Jun-97 | Sep-97 | Dec-97 | Mar-98 | Jun-98 | Sep-98 | Dec-98 | Mar-99 | Jun-99 | Sep-99 | Dec-99 | Mar-00 | Jun-00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High ··· | 1.18 | 1.16 | 1.03 | 1.03 | 1.00 | 0.99 | 1.06 | 1.20 | 1.27 | 1.39 | 1.84 | 2.03 | 1.85 | 1.76 | 1.91 | 1.89 | 2.38 | 2.64 |
| Avg ● | 1.14 | 1.05 | 0.99 | 0.99 | 0.95 | 0.94 | 0.96 | 1.11 | 1.23 | 1.27 | 1.51 | 1.86 | 1.73 | 1.68 | 1.81 | 1.79 | 2.00 | 2.48 |
| Low – | 1.10 | 0.96 | 0.95 | 0.95 | 0.90 | 0.86 | 0.89 | 0.98 | 1.17 | 1.19 | 1.30 | 1.72 | 1.62 | 1.58 | 1.67 | 1.76 | 1.68 | 2.35 |

Spreads are calculated daily, with the average covering an entire quarter

Schedule 2

**Chesapeake Utilities Corporation**
Index of Natural Gas Distribution
Discounted Cas Flow Model

| COMPANY | DIV0 | DIV1 | DIV2 | VALUE LINE ISSUE: Ed. 3, 06/23/2000 DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | JULY HI-PR | LO-PR | VER-PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |

| COMPANY | DIV0 | DIV1 | DIV2 | VALUE LINE ISSUE: Ed. 3, 06/23/2000 DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | JULY HI-PR | LO-PR | VER-PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |
| 2 ATMOS ENERGY | 1.14 | 1.18 | 1.23 | 1.29 | 1.35 | 2.40 | 14.50 | 1.0459 | 1.0634 | 20.625 | 17.750 | 19.188 |
| 3 CASCADE NATURAL GAS | 0.96 | 0.97 | 0.98 | 0.99 | 1.00 | 1.80 | 14.00 | 1.0102 | 1.0622 | 17.063 | 15.813 | 16.438 |
| 4 ENERGEN CORP. | 0.67 | 0.70 | 0.73 | 0.77 | 0.80 | 2.00 | 11.50 | 1.0455 | 1.0690 | 24.500 | 21.000 | 22.750 |
| 5 LACLEDE GAS | 1.36 | 1.40 | 1.43 | 1.47 | 1.50 | 2.50 | 14.00 | 1.0233 | 1.0560 | 20.125 | 19.188 | 19.656 |
| 6 NICOR INC. | 1.62 | 1.70 | 1.79 | 1.89 | 2.00 | 4.00 | 18.00 | 1.0557 | 1.0900 | 35.500 | 32.125 | 33.813 |
| 7 NEW JERSEY RESOURCES | 1.72 | 1.76 | 1.80 | 1.84 | 1.88 | 3.60 | 15.50 | 1.0222 | 1.0741 | 40.688 | 37.625 | 39.156 |
| 8 NORTHWEST NAT. GAS | 1.24 | 1.25 | 1.27 | 1.28 | 1.30 | 2.30 | 11.00 | 1.0132 | 1.0478 | 24.000 | 21.625 | 22.813 |
| 9 PEOPLES ENERGY | 2.00 | 2.04 | 2.08 | 2.11 | 2.15 | 3.60 | 12.00 | 1.0177 | 1.0483 | 33.500 | 31.250 | 32.375 |
| 10 PIEDMONT NATURAL GAS | 1.44 | 1.50 | 1.55 | 1.61 | 1.67 | 2.80 | 12.50 | 1.0364 | 1.0504 | 29.125 | 26.875 | 28.000 |
| 11 SOUTH JERSEY INDS. | 1.46 | 1.47 | 1.50 | 1.52 | 1.55 | 2.65 | 11.50 | 1.0178 | 1.0477 | 27.563 | 26.063 | 26.813 |
| 12 WASHINGTON GAS LIGHT | 1.24 | 1.26 | 1.31 | 1.35 | 1.40 | 2.50 | 13.00 | 1.0357 | 1.0572 | 25.500 | 23.938 | 24.719 |
| AVERAGE | 1.3275 | 1.3592 | 1.3978 | 1.4378 | 1.4792 1.5666 | 2.6583 | 13.3333 | 1.0287 | 1.0591 | | | 25.2370 |

COST OF EQUITY

Annual    10.97%

24.47987                    0.104182

24.47987    1.2293    1.1363    1.053127    0.976223    0.916321    19.1686

Source:
S&P STOCK GUIDE: August 2000  with July Stock Prices
Value Line Ed. - 3, June 23, 2000

Schedule 3

**Chesapeake Utilities Corporation**
Index of Natural Gas Distribution
Discounted Cas Flow Model

Exhibit DJD-4 (Page 1 of 1)

|  | | | | | | VALUE LINE ISSUE: Ed. 3, 06/23/2000 | | | | | JULY | | |
| COMPANY | DIV0 | DIV1 | DIV2 | DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | HI-PR | LO-PR | VER-PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |

| | | | | | | VALUE LINE ISSUE: Ed. 3, 06/23/2000 | | | | | JULY | | |
| COMPANY | DIV0 | DIV1 | DIV2 | DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | HI-PR | LO-PR | VER-PR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |
| 2 ATMOS ENERGY | 1.14 | 1.18 | 1.23 | 1.29 | 1.35 | 2.40 | 14.50 | 1.0459 | 1.0634 | 20.625 | 17.750 | 19.188 |
| 3 CTG RESOURCES | 1.04 | 1.08 | 1.12 | 1.16 | 1.20 | 2.45 | 12.50 | 1.0357 | 1.0638 | 37.688 | 36.000 | 36.844 |
| 4 CASCADE NATURAL GAS | 0.96 | 0.97 | 0.98 | 0.99 | 1.00 | 1.80 | 14.00 | 1.0102 | 1.0622 | 17.063 | 15.813 | 16.438 |
| 5 ENERGEN CORP. | 0.67 | 0.70 | 0.73 | 0.77 | 0.80 | 2.00 | 11.50 | 1.0455 | 1.0690 | 24.500 | 21.000 | 22.750 |
| 6 LACLEDE GAS | 1.36 | 1.40 | 1.43 | 1.47 | 1.50 | 2.50 | 14.00 | 1.0233 | 1.0560 | 20.125 | 19.188 | 19.656 |
| 7 NICOR INC. | 1.62 | 1.70 | 1.79 | 1.89 | 2.00 | 4.00 | 18.00 | 1.0557 | 1.0900 | 35.500 | 32.125 | 33.813 |
| 8 NEW JERSEY RESOURCES | 1.72 | 1.76 | 1.80 | 1.84 | 1.88 | 3.60 | 15.50 | 1.0222 | 1.0741 | 40.688 | 37.625 | 39.156 |
| 9 NORTHWEST NAT. GAS | 1.24 | 1.25 | 1.27 | 1.28 | 1.30 | 2.30 | 11.00 | 1.0132 | 1.0478 | 24.000 | 21.625 | 22.813 |
| 10 PEOPLES ENERGY | 2.00 | 2.04 | 2.08 | 2.11 | 2.15 | 3.60 | 12.00 | 1.0177 | 1.0483 | 33.500 | 31.250 | 32.375 |
| 11 PIEDMONT NATURAL GAS | 1.44 | 1.50 | 1.55 | 1.61 | 1.67 | 2.80 | 12.50 | 1.0364 | 1.0504 | 29.125 | 26.875 | 28.000 |
| 12 PROVIDENCE ENERGY | 1.08 | 1.08 | 1.19 | 1.31 | 1.45 | 2.10 | 10.50 | 1.1032 | 1.0325 | 42.250 | 40.750 | 41.500 |
| 13 SOUTH JERSEY INDS. | 1.46 | 1.47 | 1.50 | 1.52 | 1.55 | 2.65 | 11.50 | 1.0178 | 1.0477 | 27.563 | 26.063 | 26.813 |
| 14 SOUTHWEST GAS | 0.82 | 0.82 | 0.85 | 0.89 | 0.92 | 1.70 | 9.00 | 1.0391 | 1.0413 | 18.563 | 16.875 | 17.719 |
| 15 WASHINGTON GAS LIGHT | 1.24 | 1.26 | 1.31 | 1.35 | 1.40 | 2.50 | 13.00 | 1.0357 | 1.0572 | 25.500 | 23.938 | 24.719 |
| AVERAGE | 1.2580 | 1.2860 | 1.3290 | 1.3741 | 1.4213 1.5016 | 2.5433 | 12.8000 13.15106 | 1.0349 | 1.0564 1.0580 | | | 26.5938 |

COST OF EQUITY

Annual   **10.42%**

25.79594

25.79594    1.16905    1.087349    1.017924    0.953349    0.901197    20.66707

Source:
S&P STOCK GUIDE: August 2000 with July Stock Prices
Value Line Ed. - 3, June 23, 2000

Schedule 4

**Chesapeake Utilities Corporation**
Index of Natural Gas Distribution
Discounted Cas Flow Model

| COMPANY | DIV0 | DIV1 | DIV2 | DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | HI-PR | LO-PR | VER-PR |
|---------|------|------|------|------|------|------|------|-------|------|-------|-------|--------|
| | | | | VALUE LINE ISSUE: Ed. 3, 06/23/2000 | | | | | | JULY | | |
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |

| COMPANY | DIV0 | DIV1 | DIV2 | DIV3 | DIV4 | EPS4 | ROE4 | GR1-4 | GR4+ | HI-PR | LO-PR | VER-PR |
|---------|------|------|------|------|------|------|------|-------|------|-------|-------|--------|
| | | | | VALUE LINE ISSUE: Ed. 3, 06/23/2000 | | | | | | JULY | | |
| 1 AGL RESOURCES | 1.08 | 1.08 | 1.10 | 1.13 | 1.15 | 1.75 | 12.50 | 1.0212 | 1.0429 | 18.188 | 16.063 | 17.125 |
| 2 ATMOS ENERGY | 1.14 | 1.18 | 1.23 | 1.29 | 1.35 | 2.40 | 14.50 | 1.0459 | 1.0634 | 20.625 | 17.750 | 19.188 |
| 3 CASCADE NATURAL GAS | 0.96 | 0.97 | 0.98 | 0.99 | 1.00 | 1.80 | 14.00 | 1.0102 | 1.0622 | 17.063 | 15.813 | 16.438 |
| 4 ENERGEN CORP. | 0.67 | 0.70 | 0.73 | 0.77 | 0.80 | 2.00 | 11.50 | 1.0455 | 1.0690 | 24.500 | 21.000 | 22.750 |
| 5 LACLEDE GAS | 1.36 | 1.40 | 1.43 | 1.47 | 1.50 | 2.50 | 14.00 | 1.0233 | 1.0560 | 20.125 | 19.188 | 19.656 |
| 6 NICOR INC. | 1.62 | 1.70 | 1.79 | 1.89 | 2.00 | 4.00 | 18.00 | 1.0557 | 1.0900 | 35.500 | 32.125 | 33.813 |
| 7 NEW JERSEY RESOURCES | 1.72 | 1.76 | 1.80 | 1.84 | 1.88 | 3.60 | 15.50 | 1.0222 | 1.0741 | 40.688 | 37.625 | 39.156 |
| 8 NORTHWEST NAT. GAS | 1.24 | 1.25 | 1.27 | 1.28 | 1.30 | 2.30 | 11.00 | 1.0132 | 1.0478 | 24.000 | 21.625 | 22.813 |
| 9 PEOPLES ENERGY | 2.00 | 2.04 | 2.08 | 2.11 | 2.15 | 3.60 | 12.00 | 1.0177 | 1.0483 | 33.500 | 31.250 | 32.375 |
| 10 PIEDMONT NATURAL GAS | 1.44 | 1.50 | 1.55 | 1.61 | 1.67 | 2.80 | 12.50 | 1.0364 | 1.0504 | 29.125 | 26.875 | 28.000 |
| 11 SOUTH JERSEY INDS. | 1.46 | 1.47 | 1.50 | 1.52 | 1.55 | 2.65 | 11.50 | 1.0178 | 1.0477 | 27.563 | 26.063 | 26.813 |
| 12 WASHINGTON GAS LIGHT | 1.24 | 1.26 | 1.31 | 1.35 | 1.40 | 2.50 | 13.00 | 1.0357 | 1.0572 | 25.500 | 23.938 | 24.719 |
| AVERAGE | 1.3275 | 1.3592 | 1.3978 | 1.4378 | 1.4792 | 2.6583 | 13.3333 | 1.0287 | 1.0591 | | | 25.2370 |
| | | | | | 1.5666 | | 13.69902 | | 1.0608 | | | |

COST OF EQUITY

Annual    **11.11%**

24.47987

24.47987    1.22799    1.133679    1.049377    0.971523    0.910763    19.18653

Schedule 5

## Chesapeake Utilities Corporation
### Index of Natural Gas Distribution
#### Growth Rates

| | COMPANY | IBES | Zacks | First Call | Value Line | Average Earnings | Long-term GDP | Long-term Corp. Profits | Weighted Average Growth with GDP | Weighted Average Growth with Corp. Profits |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | 6.00% | 5.80% | 5.50% | 6.00% | 5.83% | 5.20% | 5.60% | 5.62% | 5.75% |
| 2 | ATMOS ENERGY | 7.00% | 6.80% | 7.00% | 10.50% | 7.83% | 5.20% | 5.60% | 6.95% | 7.09% |
| 3 | CTG RESOURCES | 6.00% | 5.50% | | 6.60% | 6.03% | 5.20% | 5.60% | 5.75% | 5.89% |
| 4 | CASCADE NATURAL GAS | 4.00% | 5.30% | 4.00% | 10.50% | 5.95% | 5.20% | 5.60% | 5.70% | 5.83% |
| 5 | ENERGEN CORP. | 8.00% | 12.40% | 15.00% | 8.50% | 10.98% | 5.20% | 5.60% | 9.05% | 9.19% |
| 6 | LACLEDE GAS | 4.00% | 3.50% | 4.00% | 7.50% | 4.75% | 5.20% | 5.60% | 4.90% | 5.03% |
| 7 | NICOR INC. | 6.00% | 6.10% | 6.50% | 8.50% | 6.78% | 5.20% | 5.60% | 6.25% | 6.39% |
| 8 | NEW JERSEY RESOURCE | 6.00% | 6.40% | 7.00% | 7.50% | 6.73% | 5.20% | 5.60% | 6.22% | 6.35% |
| 9 | NORTHWEST NAT. GAS | 5.00% | 4.40% | 4.00% | 7.50% | 5.23% | 5.20% | 5.60% | 5.22% | 5.35% |
| 10 | PEOPLES ENERGY | 6.00% | 5.40% | 6.00% | 6.50% | 5.98% | 5.20% | 5.60% | 5.72% | 5.85% |
| 11 | PIEDMONT NATURAL GAS | 6.00% | 6.30% | 6.50% | 7.00% | 6.45% | 5.20% | 5.60% | 6.03% | 6.17% |
| 12 | PROVIDENCE ENERGY | 7.00% | 4.00% | 5.00% | 8.50% | 6.13% | 5.20% | 5.60% | 5.82% | 5.95% |
| 13 | SOUTH JERSEY INDS. | 5.00% | 5.30% | 5.00% | 8.00% | 5.83% | 5.20% | 5.60% | 5.62% | 5.75% |
| 14 | SOUTHWEST GAS | 5.00% | 4.80% | 5.00% | 5.50% | 5.08% | 5.20% | 5.60% | 5.12% | 5.25% |
| 15 | WASHINGTON GAS LIGHT | 5.00% | 5.80% | 5.00% | 7.50% | 5.83% | 5.20% | 5.60% | 5.62% | 5.75% |
| | AVERAGE | | | | | 6.36% | | | 5.97% | 6.11% |

# Chesapeake Utilities Corporation
## Index of Natural Gas Distribution
### Dividend Yield Calculations

| | COMPANY | DIV0 | JULY HI-PR | LO-PR | AVER-PR | Average Dividend Yield |
|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | $1.08 | $18.19 | $16.06 | $17.13 | 6.31% |
| 2 | ATMOS ENERGY | $1.14 | $20.63 | $17.75 | $19.19 | 5.94% |
| 3 | CTG RESOURCES | $1.04 | $37.69 | $36.00 | $36.84 | 2.82% |
| 4 | CASCADE NATURAL GAS | $0.96 | $17.06 | $15.81 | $16.44 | 5.84% |
| 5 | ENERGEN CORP. | $0.67 | $24.50 | $21.00 | $22.75 | 2.95% |
| 6 | LACLEDE GAS | $1.36 | $20.13 | $19.19 | $19.66 | 6.92% |
| 7 | NICOR INC. | $1.62 | $35.50 | $32.13 | $33.81 | 4.79% |
| 8 | NEW JERSEY RESOURC | $1.72 | $40.69 | $37.63 | $39.16 | 4.39% |
| 9 | NORTHWEST NAT. GAS | $1.24 | $24.00 | $21.63 | $22.81 | 5.44% |
| 10 | PEOPLES ENERGY | $2.00 | $33.50 | $31.25 | $32.38 | 6.18% |
| 11 | PIEDMONT NATURAL GA | $1.44 | $29.13 | $26.88 | $28.00 | 5.14% |
| 12 | PROVIDENCE ENERGY | $1.08 | $42.25 | $40.75 | $41.50 | 2.60% |
| 13 | SOUTH JERSEY INDS. | $1.46 | $27.56 | $26.06 | $26.81 | 5.45% |
| 14 | SOUTHWEST GAS | $0.82 | $18.56 | $16.88 | $17.72 | 4.63% |
| 15 | WASHINGTON GAS LIGHT | $1.24 | $25.50 | $23.94 | $24.72 | 5.02% |

AVERAGE     4.96%

Source:
S&P STOCK GUIDE: August 2000  with July Stock Prices
Value Line Ed. - 3, June 23, 2000

# Chesapeake Utilities Corporation
## Index of Natural Gas Distribution
### Return on Common Equity Calculation

| | COMPANY | Dividend Yield (D/P) | × | 1+0.5 (g) | = | Adjusted Dividend Yield (D1/P) | + | Growth Rate (g) | = | Cost of Equity (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | 6.31% | × | 1.02810 | = | 6.49% | + | 5.62% | = | 12.11% |
| 2 | ATMOS ENERGY | 5.94% | × | 1.03475 | = | 6.15% | + | 6.95% | = | 13.10% |
| 3 | CTG RESOURCES | 2.82% | × | 1.02875 | = | 2.90% | + | 5.75% | = | 8.65% |
| 4 | CASCADE NATURAL GAS | 5.84% | × | 1.02850 | = | 6.01% | + | 5.70% | = | 11.71% |
| 5 | ENERGEN CORP. | 2.95% | × | 1.04525 | = | 3.08% | + | 9.05% | = | 12.13% |
| 6 | LACLEDE GAS | 6.92% | × | 1.02450 | = | 7.09% | + | 4.90% | = | 11.99% |
| 7 | NICOR INC. | 4.79% | × | 1.03125 | = | 4.94% | + | 6.25% | = | 11.19% |
| 8 | NEW JERSEY RESOURCE | 4.39% | × | 1.03110 | = | 4.53% | + | 6.22% | = | 10.75% |
| 9 | NORTHWEST NAT. GAS | 5.44% | × | 1.02610 | = | 5.58% | + | 5.22% | = | 10.80% |
| 10 | PEOPLES ENERGY | 6.18% | × | 1.02860 | = | 6.36% | + | 5.72% | = | 12.08% |
| 11 | PIEDMONT NATURAL GA | 5.14% | × | 1.03015 | = | 5.29% | + | 6.03% | = | 11.32% |
| 12 | PROVIDENCE ENERGY | 2.60% | × | 1.02910 | = | 2.68% | + | 5.82% | = | 8.50% |
| 13 | SOUTH JERSEY INDS. | 5.45% | × | 1.02810 | = | 5.60% | + | 5.62% | = | 11.22% |
| 14 | SOUTHWEST GAS | 4.63% | × | 1.02560 | = | 4.75% | + | 5.12% | = | 9.87% |
| 15 | WASHINGTON GAS LIGH | 5.02% | × | 1.02810 | = | 5.16% | + | 5.62% | = | 10.78% |

Average  11.01%

AVERAGE

# Chesapeake Utilities Corporation
## Index of Natural Gas Distribution
### Return on Common Equity Calculation

| | COMPANY | Dividend Yield (D/P) | × | 1+0.5 (g) | = | Adjusted Dividend Yield (D1/P) | + | Growth Rate (g) | = | Cost of Equity (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | 6.31% | × | 1.02875 | = | 6.49% | + | 5.75% | = | 12.24% |
| 2 | ATMOS ENERGY | 5.94% | × | 1.03545 | = | 6.15% | + | 7.09% | = | 13.24% |
| 3 | CTG RESOURCES | 2.82% | × | 1.02945 | = | 2.90% | + | 5.89% | = | 8.79% |
| 4 | CASCADE NATURAL GAS | 5.84% | × | 1.02915 | = | 6.01% | + | 5.83% | = | 11.84% |
| 5 | ENERGEN CORP. | 2.95% | × | 1.04595 | = | 3.09% | + | 9.19% | = | 12.28% |
| 6 | LACLEDE GAS | 6.92% | × | 1.02515 | = | 7.09% | + | 5.03% | = | 12.12% |
| 7 | NICOR INC. | 4.79% | × | 1.03195 | = | 4.94% | + | 6.39% | = | 11.33% |
| 8 | NEW JERSEY RESOURCE | 4.39% | × | 1.03175 | = | 4.53% | + | 6.35% | = | 10.88% |
| 9 | NORTHWEST NAT. GAS | 5.44% | × | 1.02675 | = | 5.59% | + | 5.35% | = | 10.94% |
| 10 | PEOPLES ENERGY | 6.18% | × | 1.02925 | = | 6.36% | + | 5.85% | = | 12.21% |
| 11 | PIEDMONT NATURAL GA | 5.14% | × | 1.03085 | = | 5.30% | + | 6.17% | = | 11.47% |
| 12 | PROVIDENCE ENERGY | 2.60% | × | 1.02975 | = | 2.68% | + | 5.95% | = | 8.63% |
| 13 | SOUTH JERSEY INDS. | 5.45% | × | 1.02875 | = | 5.61% | + | 5.75% | = | 11.36% |
| 14 | SOUTHWEST GAS | 4.63% | × | 1.02625 | = | 4.75% | + | 5.25% | = | 10.00% |
| 15 | WASHINGTON GAS LIGH | 5.02% | × | 1.02875 | = | 5.16% | + | 5.75% | = | 10.91% |

Average    11.14%

AVERAGE

## Chesapeake Utilities Corporation
Index of Natural Gas Distribution
### Return on Common Equity Calculation

| | COMPANY | Dividend Yield (D/P) | × | 1+0.5 (g) | = | Adjusted Dividend Yield (D1/P) | + | Growth Rate (g) | = | Cost of Equity (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | 6.31% | × | 1.02810 | = | 6.49% | + | 5.62% | = | 12.11% |
| 2 | ATMOS ENERGY | 5.94% | × | 1.03475 | = | 6.15% | + | 6.95% | = | 13.10% |
| 3 | CASCADE NATURAL GAS | 5.84% | × | 1.02850 | = | 6.01% | + | 5.70% | = | 11.71% |
| 4 | ENERGEN CORP. | 2.95% | × | 1.04525 | = | 3.08% | + | 9.05% | = | 12.13% |
| 5 | LACLEDE GAS | 6.92% | × | 1.02450 | = | 7.09% | + | 4.90% | = | 11.99% |
| 6 | NICOR INC. | 4.79% | × | 1.03125 | = | 4.94% | + | 6.25% | = | 11.19% |
| 7 | NEW JERSEY RESOURCE | 4.39% | × | 1.03110 | = | 4.53% | + | 6.22% | = | 10.75% |
| 8 | NORTHWEST NAT. GAS | 5.44% | × | 1.02610 | = | 5.58% | + | 5.22% | = | 10.80% |
| 9 | PEOPLES ENERGY | 6.18% | × | 1.02860 | = | 6.36% | + | 5.72% | = | 12.08% |
| 10 | PIEDMONT NATURAL GA | 5.14% | × | 1.03015 | = | 5.29% | + | 6.03% | = | 11.32% |
| 11 | SOUTH JERSEY INDS. | 5.45% | × | 1.02810 | = | 5.60% | + | 5.62% | = | 11.22% |
| 12 | WASHINGTON GAS LIGH | 5.02% | × | 1.02810 | = | 5.16% | + | 5.62% | = | 10.78% |

Average 11.55%

# Chesapeake Utilities Corporation
## Index of Natural Gas Distribution
### Return on Common Equity Calculation

| | COMPANY | Dividend Yield (D/P) | × | 1+0.5 (g) | = | Adjusted Dividend Yield (D1/P) | + | Growth Rate (g) | = | Cost of Equity (K) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AGL RESOURCES | 6.31% | × | 1.02875 | = | 6.49% | + | 5.75% | = | 12.24% |
| 2 | ATMOS ENERGY | 5.94% | × | 1.03545 | = | 6.15% | + | 7.09% | = | 13.24% |
| 3 | CASCADE NATURAL GAS | 5.84% | × | 1.02915 | = | 6.01% | + | 5.83% | = | 11.84% |
| 4 | ENERGEN CORP. | 2.95% | × | 1.04595 | = | 3.09% | + | 9.19% | = | 12.28% |
| 5 | LACLEDE GAS | 6.92% | × | 1.02515 | = | 7.09% | + | 5.03% | = | 12.12% |
| 6 | NICOR INC. | 4.79% | × | 1.03195 | = | 4.94% | + | 6.39% | = | 11.33% |
| 7 | NEW JERSEY RESOURCES | 4.39% | × | 1.03175 | = | 4.53% | + | 6.35% | = | 10.88% |
| 8 | NORTHWEST NAT. GAS | 5.44% | × | 1.02675 | = | 5.59% | + | 5.35% | = | 10.94% |
| 9 | PEOPLES ENERGY | 6.18% | × | 1.02925 | = | 6.36% | + | 5.85% | = | 12.21% |
| 10 | PIEDMONT NATURAL GAS | 5.14% | × | 1.03085 | = | 5.30% | + | 6.17% | = | 11.47% |
| 11 | SOUTH JERSEY INDS. | 5.45% | × | 1.02875 | = | 5.61% | + | 5.75% | = | 11.36% |
| 12 | WASHINGTON GAS LIGHT | 5.02% | × | 1.02875 | = | 5.16% | + | 5.75% | = | 10.91% |

Average    11.69%

# THE VALUE LINE Investment Survey®

**Part 1 — Summary & Index**

## September 1, 2000

## TABLE OF SUMMARY & INDEX CONTENTS

Summary & Index Page Number

| The Median of Estimated PRICE-EARNINGS RATIOS of all stocks with earnings | The Median of Estimated DIVIDEND YIELDS (next 12 months) of all dividend paying stocks under review | The Estimated Median Price APPRECIATION POTENTIAL of all 1700 stocks in the hypothesized economic environment 3 to 5 years hence |
|---|---|---|
| **14.1** | **2.2%** | **80%** |

| | 26 Weeks Ago | Market Low 10-28-87 | Market High 4-22-98 |
|---|---|---|---|
| PRICE-EARNINGS RATIOS | 13.4 | 10.6 | 19.7 |
| DIVIDEND YIELDS | 2.4% | 3.7% | 1.6% |
| APPRECIATION POTENTIAL | 90% | 120% | 35% |

## ANALYSES OF INDUSTRIES IN ALPHABETICAL ORDER WITH PAGE NUMBER
Numeral in parenthesis after the industry is rank for probable performance (next 12 months).

*Reviewed in this week's edition.