STATE OF DELAWARE

BEFORE THE PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE APPLICATION	]	
OF ARTESIAN WATER COMPANY, INC.	]	PSC Docket No. 11-207
FOR A REVISION OF RATES	]	
(Filed April 11, 2011)	]	

DIRECT TESTIMONY OF

ANDREA C. CRANE

RE: REVENUE REQUIREMENTS AND
COST OF CAPITAL

ON BEHALF OF

THE DIVISION OF THE PUBLIC ADVOCATE

September 22, 2011

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I. STATEMENT OF QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Andrea C. Crane and my business address is 90 Grove Street, Suite 211, Ridgefield, CT 06877. (Mailing address: PO Box 810, Georgetown, CT 06829).

Q. By whom are you employed and in what capacity?

A. I am President of The Columbia Group, Inc., a financial consulting firm that specializes in utility regulation. In this capacity, I analyze rate filings, prepare expert testimony, and undertake various studies relating to utility rates and regulatory policy. I have held several positions of increasing responsibility since I joined The Columbia Group, Inc. in January 1989. I became President of the firm in 2008.

Q. Please summarize your professional experience in the utility industry.

A. Prior to my association with The Columbia Group, Inc., I held the position of Economic Policy and Analysis Staff Manager for GTE Service Corporation, from December 1987 to January 1989. From June 1982 to September 1987, I was employed by various Bell Atlantic (now Verizon) subsidiaries. While at Bell Atlantic, I held assignments in the Product Management, Treasury, and Regulatory Departments.

Q. Have you previously testified in regulatory proceedings?

A. Yes, since joining The Columbia Group, Inc., I have testified in approximately 350 regulatory proceedings in the states of Arizona, Arkansas, Connecticut, Delaware, Hawaii, Kansas, Kentucky, Maryland, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Vermont, West Virginia and the District of Columbia. These proceedings involved water, wastewater, gas, electric, telephone, solid waste, cable television, and navigation utilities. A list of dockets in which I have filed testimony since January 2008 is included in Appendix A.

Q. What is your educational background?

A. I received a Master's degree in Business Administration, with a concentration in Finance, from Temple University in Philadelphia, Pennsylvania. My undergraduate degree is a B.A. in Chemistry from Temple University.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. On or about April 11, 2011, Artesian Water Company ("AWC" or "Company") filed a Petition requesting a rate increase of $10,926,304 or approximately 19.5% over its claimed pro forma water sales revenues at present rates. On June 30, 2011, AWC filed Supplemental Testimony claiming a pro forma revenue deficiency of $11,071,868, or approximately 19.7% over its claimed pro forma water sales at present rates. AWC is not seeking to increase its request as a result of its Supplemental Testimony but is requesting that the Delaware Public

Service Commission ("PSC") approve its initial request for a rate increase of $10,926,304.

The Columbia Group, Inc. was engaged by The State of Delaware, Division of the Public Advocate ("Public Advocate") to review the Company's Petition and to provide recommendations to the PSC regarding the Company's revenue requirement claim, including its requested cost of capital.

III. SUMMARY OF CONCLUSIONS

Q. What are your conclusions concerning the Company's revenue requirement and its need for rate relief?

A. Based on my analysis of the Company's filing and other documentation in this case, my conclusions are as follows:

1. I recommend that the Commission adopt a pro forma capital structure for AWC that consists of 44.10% common equity and 55.90% long-term debt (see Schedule ACC-2).
2. The Company has pro forma capital costs of 8.92% for common equity and of 5.88% for long-term debt (see Schedule ACC-2).
3. Based on my recommended capital structure and capital cost rates, I recommend that the Commission adopt an overall cost of capital of 7.22% for AWC (see Schedule ACC-2).
4. The Company has a pro forma test period rate base of $189,067,271 (see Schedule ACC-9).

5. The Company has pro forma test period operating income at present rates of $12,648,142 (see Schedule ACC-18).

6. Based on my analysis, the Company has a revenue deficiency of $1,527,210 (see Schedule ACC-1). This is in contrast to the revenue deficiency of $11,071,868 claimed by AWC.

IV. COST OF CAPITAL AND CAPITAL STRUCTURE

Q. What is the cost of capital and capital structure that the Company is requesting in this case?

A. The Company's claim is based on the following capital structure and cost of capital:

	Percent	Cost	Weighted Cost
Common Equity	49.05%	10.85%	5.32%
Long Term Debt	50.95%	5.88%	3.00%
Total			8.32%

The Company's capital structure claim is based on a projected capital structure for the water utility at September 30, 2011.

Q. Are you recommending any adjustments to the Company's claimed capital structure, cost of debt or cost of equity?

A. Yes, I am recommending adjustments to the Company's claimed capital structure and cost of equity. I am not recommending any adjustment to its claimed cost of debt.

Q. Please describe your adjustment to the Company's capital structure.

A. AWC's proposed capital structure is based on projected levels of debt and equity at September 31, 2011, the end of the Test Period in this case. The projected capital structure contains a higher equity ratio than the Company has traditionally maintained. Since the cost of equity is generally higher than the cost of debt, the higher equity ratio has the effect of increasing the Company's overall cost of capital.

As shown in the response to DPA-A-133, the Company's projected equity ratio of 49.05% is also high relative to actual results during the Test period. At May 31, 2011, the last month for which data was provided, AWC's actual capital structure consisted of 44.10% common equity and 55.90% debt. This is the capital structure that I have reflected in my recommendation, as shown in Schedule ACC-2. The use of an updated actual capital structure is more reasonable than the speculative capital structure proposed by AWC, especially when one considers the fact that the Company's speculative capital structure will increase the overall cost of capital to ratepayers.

Q. What adjustment are you recommending to the Company's proposed cost of equity?

A. I am recommending that the PSC adopt a cost of equity of 8.92% for AWC.

Q. How did you develop your cost of equity recommendation?

A. To develop a recommended cost of equity in this case, I utilized both the Discounted Cash Flow ("DCF") methodology as well as the Capital Asset Pricing Model ("CAPM"). It is my understanding that the Commission has traditionally relied upon the DCF methodology for determining cost of equity for a regulated utility and therefore I have given greater weight to my DCF result.

Q. Please describe the DCF methodology.

A. The DCF methodology is the most frequently used method to determine an appropriate return on equity for a regulated utility. The DCF methodology equates a utility's return on equity to the expected dividend yield plus expected future growth for comparable investments. Specifically, this methodology is based on the following formula:

$$\text{Return on Equity} = \frac{D_1}{P_0} + g$$

where "D_1" is the expected dividend, "P_0" is the current stock price, and "g" is the expected growth in dividends.

Q. What comparable group did you utilize in your analysis?

A. In order to ensure that the return on equity determined for a particular utility is representative of returns for comparable investments of similar risk, the DCF methodology examines returns for similar companies through the use of a "comparable" or "proxy" group. To determine a comparable group of companies, I utilized the same water companies that were analyzed by AWC's witness, Pauline Ahern.

Q. How did you determine an appropriate dividend yield for your DCF analysis?

A. To determine an appropriate dividend yield for comparable companies, i.e. the expected dividend divided by the current price, I calculated the dividend yield of the comparable companies under several scenarios. First, I calculated the dividend yield using the average of the stock prices for each company over the past 60 days. The use of a dividend yield using a 60-day average price mitigates the effect of stock price volatility for any given day. Ms. Ahern also examined historic dividends over a 60-day period. Based on the average stock prices over the past 60 days, and the current dividend for each company, I determined an average dividend yield for the comparable group of 3.32%, as shown in Schedule ACC-5. I also calculated the current dividend yield at August 26, 2011, which showed an average dividend yield for the comparable group of 3.27%, also shown in Schedule ACC-5. I also reviewed the average dividend yield for water companies as reported in the September 2011 edition of AUS Utility Reports, which showed an average dividend yield of 3.4%. Finally, I examined the dividend yields as determined by Ms. Ahern on Exhibit PMA-1, Schedule 8, page 1. In her testimony, she found an average dividend yield of 3.19% for the companies in her comparable group. Based on all of this data, I recommend that a dividend yield of no greater than 3.32% be used in the DCF calculation, which is the average yield based on 60 day stock prices. In addition, my recommended dividend yield will be increased by ½ of my recommended growth rate, as determined below, to reflect the fact that the DCF model is prospective and dividend yields may grow over the next year. Increasing the dividend yield by ½ of the prospective growth rate is commonly referred to as the "half year convention."

Q. What growth rate did you utilize?

A. I am recommending a growth rate of 6.00%, as shown on Schedule ACC-4. The actual growth rate used in the DCF analysis is the dividend growth rate. In spite of the fact that the model is based on dividend growth, it is not uncommon for analysts to examine several growth factors, including growth in earnings, dividends, and book value.

Following are the five-year and ten-year historic growth rates for the companies included in my comparable group, as reported by Value Line. Unfortunately, there are not many water companies that are regularly followed by analysts in the financial community and therefore the available information is somewhat thin.

	Historic 5 Year Earnings	**Historic 5 Year Dividends**	**Historic 5 Year Book Value**	**Historic 10 Year Earnings**	**Historic 10 Year Dividends**	**Historic 10 Year Book Value**
American States Water Co.	11.5%	2.5%	5.0%	4.5%	2.0%	5.0%
American Water Works Co., Inc.	n/a	n/a	n/a	n/a	n/a	n/a

Aqua America, Inc.	4.5%	8.0%	7.0%	6.5%	7.5%	9.0%
California Water Services Group	6.5%	1.0%	5.5%	3.0%	1.0%	4.5%
Connecticut Water Services, Inc.	1.5%	1.5%	3.0%	n/a	n/a	n/a
York Water Company	5.0%	5.0%	8.5%	n/a	n/a	n/a
Average	5.80%	3.60%	5.80%	4.67%	3.50%	6.17%

With regard to prospective growth rates, the available Value Line projections are shown below:

	5 Year Projected Earnings	**5 Year Projected Dividends**	**5 Year Projected Book Value**
American States Water Co.	5.5%	4.0%	2.0%
American Water Works Co., Inc.	8.5%	8.0%	-0.5%
Aqua America, Inc.	10.5%	5.5%	6.0%
California Water Services Group	6.0%	3.0%	3.5%
Average	7.63%	5.13%	2.75%

In her testimony, Ms. Ahern also provided projected five year earnings growth rates from Reuters and Zack's. Reuters included a projection for each company in Ms. Ahern's comparable group while Zack's published a projected growth rate for four of the companies followed by Value Line. As shown on Schedule PMA-8, page 1, the average projected five-year earnings growth rates for the companies in Ms. Ahern's comparable group, based on all three sources, is 7.24%.

Q. Why do you believe that it is reasonable to examine historic growth rates as well as projected growth rates when evaluating a utility's cost of equity?

A. I believe that historic growth rates should be considered because security analysts have been notoriously optimistic in forecasting future growth in earnings. At least part of this problem in the past has been the fact that firms that traditionally sell securities are the same firms that provide investors with research on these securities, including forecasts of earnings growth. This results in a direct conflict of interest since it has traditionally been in the best interest of securities firms to provide optimistic earnings forecasts in the hope of selling more stock. Therefore, earnings growth forecasts should be analyzed cautiously by state regulatory commissions.

The continued unreliability of analysts' earnings forecasts has been confirmed with the recent economic problems faced by the financial community in late 2008 and 2009. Many firms, including Value Line, incorrectly forecasted steady growth for companies whose stock prices fell dramatically, and in some cases for firms that eventually required bailouts from other firms or the federal government. Although Value Line does not sell stock, its forecasts appear to be just as optimistic as many of the securities firms. The PSC needs only to examine actual results in 2008 and 2009 to realize that earnings forecasts should be viewed with a healthy does of skepticism.

Q. How do the five-year earnings forecasts in this case compare with the earnings forecast in the last case?

A. The average earnings growth forecast for the companies followed by Value Line has declined, from 9.88% in the last case to 7.63%. For three of the companies, actual five-year earnings growth rates were higher over the past five years than over the five-years reviewed in the last case, while actual five-year earnings growth rates declined for two of the six companies.

Q. Based upon your review, what growth rate do you recommend be utilized in the DCF calculation?

A. Based on my review of the data, I believe that a growth rate of no greater than 6.0% should be utilized. This growth rate is higher than the average of the growth in earnings, dividends, or book value over the past five years, and higher than the growth in earnings or dividends over the past ten years. It is also higher than the projected growth rates in dividends, which is the theoretical growth rate used in the DCF, or the projected growth rate in book value. While the average projected growth rate in earnings is higher than my recommended growth rate, I have already discussed the fact that projected growth rates, particularly in earnings, tend to be overly optimistic.

Q. What are the results of your analysis?

A. My analysis indicates a cost of equity using the DCF methodology of 9.42%, as shown below:

Dividend Yield	3.32%
Growth in Dividend Yield	0.10%
Growth Rate	6.00%
Total Cost of Equity	9.42%

Q. Did you also calculate a cost of equity based on the CAPM methodology?

Q. Yes, I did. The CAPM methodology is based on the following formula:

Cost of Equity = Risk Free Rate + Beta (Risk Premium)

or

$$\text{Cost of Equity} = R_f + B(R_m - R_f)$$

The CAPM methodology assumes that the cost of equity is equal to a risk-free rate plus some market-adjusted risk premium. The risk premium is adjusted by Beta, which is a measure of the extent to which an investor can diversify his market risk. The ability to diversify market risk is a measure of the extent to which a particular stock's price changes relative to changes in the overall stock market. Thus, a Beta of 1.00 means that changes in the price of a particular stock can be fully explained by changes in the overall market. A stock with a Beta of 0.60 will exhibit price changes that are only 60% as great as the price changes experienced by the overall market. Utility stocks have traditionally been less volatile than the overall market, i.e., their stock prices do not fluctuate as significantly as the market as a whole.

Q. How did you calculate the cost of equity using the CAPM?

A. My CAPM analysis is shown in Schedule ACC-7. First, I used a risk-free rate of 3.51% for the yield on long-term U.S. Government bonds, which was rate for 30-year Government bonds at September 1, 2011 per the Statistical Release by the Federal Reserve Board. During the past year, this rate has ranged from 3.39% to 4.76%. In addition, I used the average Beta of .71 for the proxy group as determined by Value Line. Finally, since I am using a long-term U.S. Government bond rate as the risk-free rate, the risk premium that should be used is the historic risk premium of stocks over the rates for long-term government bonds. According to the Morningstar publication, *Ibbotson SBBI: 2011 Classic Yearbook: Market Results for Stocks, Bonds, Bills, and Inflation*, 1926-2010, the geometric risk premium of stocks relative to long-term risk-free rates using geometric mean returns is 5.5%. Accordingly, I have used 5.5% as the risk premium in the development of the cost of equity based on the CAPM methodology.

Q. What is the difference between a geometric and an arithmetic mean return?

A. An arithmetic mean is a simple average of each year's percentage return. A geometric mean takes compounding into effect. As a result, the arithmetic mean overstates the return to investors. For example, suppose an investor starts with $100. In year 1, he makes 100% or $100. He now has $200. In year 2, he loses 50%, or $100. He is now back to $100.

The arithmetic mean of these transactions is 100% - 50% or 50%/ 2 = 25% per year. The geometric mean of these transactions is 0%. In this simple example, it is clear that the geometric mean more appropriately reflects the real return to the investor, who started with $100 and who still has $100 two years later. The use of the arithmetic mean would suggest that the investor should have $156.25 after two years ($100 X 1.25 X 1.25), when in fact the investor actually has considerably less. Therefore, a geometric mean return is a more appropriate measure of the real return to an investor, if it is used as I am using it here, i.e., to develop an historic relationship between long-term risk free rates and market risk premiums. Some utilities have criticized me in the past for using a geometric, rather than an arithmetic mean return, arguing that the arithmetic mean should be used when estimating future returns. However, in my case, I am not using the mean to develop an expected outcome, I am simply using the mean returns to develop an historic relationship. Therefore, the geometric mean is the appropriate measure, as illustrated in the above example.

Q. What is the Company's cost of equity using a CAPM approach?

A. Given a long-term risk-free rate of 3.51%, a Beta of 0.71, and a risk premium of 5.5%, the CAPM methodology produces a cost of equity of 7.42%, as shown on Schedule ACC-7.

Risk Free Rate + Beta (Risk Premium) = Cost of Equity

3.51% + (0.71 X 5.5%) = 7.42%

Q. Based on your analysis of the DCF and CAPM results, what cost of equity are you recommending in this case?

A. The DCF methodology and the CAPM methodology suggest that a return on equity of 7.42% to 9.42% would be appropriate. Since I recognize that the Commission has generally relied primarily upon the DCF, I have weighted my results with a 75% weighting for the DCF methodology and a 25% weighting for the CAPM methodology. This results in a cost of equity of 8.92%, as shown below:

DCF Result	9.42% X 75% = 7.07%
CAPM	7.42% X 25% = 1.85%
Total	8.92%

Q. Why is your recommendation substantially lower than the cost of equity recommended by Ms. Ahern?

A. My recommendation is lower than Ms. Ahern's recommendation for several reasons. Ms. Ahern used the average of four methodologies to develop her recommended cost of equity.

Thus, instead of relying primarily upon the DCF, which produced a result of 10.09%, Ms. Ahern gave that method significantly less weight in her analysis. Moreover, the 10.09% DCF result itself was inflated by an overly optimistic growth forecast averaging 7.24%.

With regard to the CAPM analysis, Ms. Ahern's result was based on both a traditional CAPM approach and an empirical model, both of which are based on an unrealistic and speculative risk-free rate of 4.85%. Ms. Ahern's risk-free rate was based on projections of U.S. Treasury bond rates for the six quarters ending in June 2012 at the time her testimony was filed. In addition, she used an unrealistic risk premium of 6.92%, in spite of the fact that the historic risk premium from 1926-2009 for the stocks in the Standard and Poor's 500 Composite Index is only 5.70%, and the risk premium for the Standard and Poor's Public Utility Index is even lower, at 4.17%. Ms. Ahern's third method is a risk premium method. Since the CAPM is also a risk premium methodology, her analysis gives double weight to the risk premium approach, further ignoring the Commission's stated preference for the DCF. Finally, Ms. Ahern used a comparable earnings analysis. The flaw with this method is that the companies used in the analysis, which include such companies as Bristol-Myers Squibb, Hasbro, Inc., and Microsoft Corp., are not comparable to AWC. Ms. Ahern's comparable earnings analysis produced a cost of equity recommendation of 14.00%.

A final flaw in Ms. Ahern's analysis is that she used a small company premium of 20 basis points, which has previously been rejected by the PSC, and a flotation cost adjustment of 10 basis points. Thus, Ms. Ahern reached beyond the traditional cost of equity methodology in order to achieve a higher cost of equity result.

Q. What is the overall cost of capital that you are recommending for AWC?

A. I am recommending an overall cost of capital for AWC of 7.22%, based on the following capital structure and cost rates:

	Percent	Cost	Weighted Cost
Common Equity	44.10%	8.92%	3.93%
Long-Term Debt	55.90%	5.88%	3.29%
Total Cost of Capital			7.22%

V. RATE BASE ISSUES

Q. What Test Year and Test Period did the Company utilize to develop its rate base claim in this proceeding?

A. The Test Year in this case is the twelve-month period ending December 31, 2010. The Test Period is the twelve months ending September 30, 2011. Thus, we do not yet have actual results for the full Test Period.

Q. Are you recommending any adjustments to the Company's rate base claim?

A. Yes, I am recommending adjustments to the Company's claims for utility plant-in-service, accumulated depreciation, contributions in aid of construction ("CIAC"), advances for construction, accumulated depreciation on CIAC and advances, materials and supplies, and working capital.

A. Utility Plant-In-Service

Q. Please describe your adjustment to the Company's utility plant-in-service claim.

A. The Company's rate base claim is based on a partially forecasted Test Period. This claim includes projected capital expenditures and related retirements through September 30, 2011. However, over the past several years, AWC's actual capital expenditures have generally fallen far short of its projections. Following is the history of budgeted vs. actual capital expenditures for each of the past five years, per the response to DPA-A-57:

Year	Budget ($000)	Actual ($000)	Percent
2010	$20,112	$13,216	88.69%
2009	$15,303	$13,553	81.68%
2008	$43,989	$36,151	82.18%
2007	$20,912	$17,081	88.56%
2006	$18,573	$16,473	65.71%
5 Year Average	$118,889	$96,474	81.15%

As shown above, actual capital expenditures during this period have been significantly below budget, averaging approximately 81.15% of budget over the five-year period. This is important since the Company's Test Period is partially projected. Thus, the ability of AWC to accurately project capital expenditures is crucial in evaluating an appropriate utility plant-in-service balance for setting utility rates.

Q. What do you recommend?

A. Given the fact that AWC has, on average, not met its capital budget projections, I am recommending that the PSC utilize the most recent data to determine pro forma utility plant-in-service. According to the response to DPA-D-23, the Company's actual utility plant-in-service balance at May 31, 2011 was $369,460,761, excluding intangible plant, or over $10.0 million less than its Test Period claim. This is the utility plant-in-service balance that I have reflected in my pro forma rate base recommendation, at Schedule ACC-10. I recommend that this balance be updated with actual monthly balances through the end of the Test Period as this proceeding progresses.

B. Accumulated Depreciation

Q. Please describe your adjustment to the Company's claim for accumulated depreciation.

A. Consistent with my adjustment to reflect the most recent balance for utility plant-in-service, I am also recommending that the PSC utilize the most recent balance for accumulated depreciation, as shown on Schedule ACC-11.

C. Contributions and Advances

Q. Are you recommending any adjustment to the Company's claim for contributions in aid of construction ("CIAC") and advances for construction?

A. Yes, I am. Since a portion of the Company's utility plant-in-service is financed by developers through advances and contributions, it is necessary to ensure that pro forma advances and contributions are synchronized to the level of utility plant-in-service reflected in rate base. Advances and contributions, which are deductions to rate base, generally increase with increases in utility plant-in-service. Alternatively, if the Company's actual utility plant-in-service balance is below projections, it may be that the Company did not receive all of the CIAC and/or advances that it anticipated. Therefore, adjusting utility plant-in-service without making a corresponding adjustment to advances and contributions would tend to understate the Company's rate base. Since I have reflected a utility plant-in-service balance as of May 31, 2011 in my pro forma rate base recommendation, it is reasonable to also reflect the actual balance of advances and contributions at the end of May 2011. My adjustment to the Company's CIAC claim is shown in Schedule ACC-12. My adjustment to the Company's claim for advances is shown in Schedule ACC-13.

Q. Are you making a corresponding adjustment to accumulated depreciation associated with CIAC and advances?

A. Yes, I am. The Company does not charge ratepayers for depreciation expense on its contributions and advances, although this plant is written down over its useful life. Therefore, it is the net book value of contributions and advances, i.e., CIAC and advances net of the associated accumulated depreciation, that should be used to reduce rate base. Since I am adjusting the balance of CIAC and advances to reflect actual balances at May 31, 2011, it is necessary to make a corresponding adjustment to reflect accumulated depreciation on

CIAC and advances as of that same date. Accordingly, at Schedules ACC-14 and ACC-15, I have updated the Company's claims for accumulated depreciation on CIAC and advances with the actual balances at May 31, 2011.

D. Materials and Supplies

Q. How did AWC develop its claim for materials and supplies?

A. The Company's claim for materials and supplies is based on a thirteen-month average balance. Thus, the Company used the average of the thirteen monthly balances from December 2009 through December 2010.

Q. Are you recommending any adjustment to the Company's claim?

A. Yes, I am recommending one adjustment. Consistent with my other rate base recommendations, I have adjusted the Company's claim for materials and supplies to reflect the most recent thirteen-month average balance, based on the thirteen months ending May 31, 2011. My adjustment is shown in Schedule ACC-16.

E. Working Capital

Q. How did the Company develop its working capital claim?

A. There are three components to the Company's working capital claim. First, AWC developed a claim for cash working capital of $4,589,000, as described in more detail below. AWC then offset this cash working capital requirement to reflect the working capital $812,619 provided by customer deposits and the working capital of $680,277 provided by service deposits, as shown in DBS Exhibit 1R, Schedule 2-E, resulting in a total working capital claim of $3,096,104.

Q. What is cash working capital?

A. Cash working capital is the amount of cash that is required by a utility in order to cover cash outflows between the time that revenues are received from customers and the time that expenses must be paid. For example, assume that a utility bills its customers monthly and that it receives monthly revenues approximately 30 days after the midpoint of the date that service is provided. If the Company pays its employees weekly, it will have a need for cash prior to receiving the monthly revenue stream. If, on the other hand, the Company pays its interest expense quarterly, it will receive these revenues well in advance of needing the funds to pay interest expense.

Q. Do companies always have a positive cash working capital requirement?

A. No, they do not. The actual amount and timing of cash flows dictate whether or not a utility requires a cash working capital allowance. Therefore, one should examine actual cash flows through a lead/lag study in order to accurately measure a utility's need for cash working capital. The Company provided the results of a lead/lag study to support its cash working capital claim.

Q. What revenue lag is reflected in the Company's lead/lag study?

A. AWC's cash working capital claim is based on a revenue lag of 48.12 days. This revenue lag assumes that the Company receives revenues, on average, 48.12 days after the midpoint of the service period. The Company developed this revenue lag by examining the average outstanding accounts receivable balance.

There are two significant factors that impact the Company's revenue lag. First, AWC bills the vast majority of its customers on a quarterly, rather than monthly, basis. Quarterly billing generally results in a much longer revenue lag than monthly billing. However, in AWC's case, this extended lag is somewhat mitigated by the fact that the Company bills a portion of its charges, i.e., its customer charges, in advance of service being rendered. Advance billing has the opposite effect on a Company's cash working capital requirement. Thus, while quarterly billing tends to delay the receipt of revenue, advance billing accelerates the receipt of revenue, thereby reducing a utility's need for cash working capital.

Q. Is AWC proposing to change its billing frequency?

A. Yes, it is. In this case, AWC is proposing to convert virtually all customers from quarterly to monthly billing. This will significantly increase the Company's cash flow and reduce its need for cash working capital. However, in response to PSC-LA-156, the Company indicated that it would cease billing its customer charge in advance once it converts to monthly billing. AWC did not adjust its revenue lag to reflect either the conversion to monthly billing or the termination of billing its customer service charges in advance of service being rendered.

Q. Did the Company estimate the net impact of these billing changes on its need for cash working capital?

A. No, it did not. In response to PSC-LA-156, AWC stated that it did not adjust its cash working capital claim to reflect these billing changes. The Company also stated that it "could not specifically delineate a change in customer payment time and the implementation would be phased in outside the test period in this case." However, AWC did go on in that response to estimate a revenue lag of 45 days if monthly billing is implemented.

Q. If the PSC approves the Company's proposal to adopt monthly billing, do you believe that it is reasonable to adjust its revenue lag to reflect the impact of monthly billing?

A. Yes, I do. The Company has indicated that it intends to convert all customers to monthly billing in the near future. The Company has also included pro forma expense adjustments to reflect incremental costs of lock box services, billing and postage assuming that all customers are billed monthly. If the PSC approves the Company's request for monthly billing, and reflects these incremental costs in utility rates, then it is reasonable to adjust the Company's cash working capital claim to reflect the impact of monthly billing. In that case, the PSC should reflect a revenue lag of 45 days. This would reduce the Company's cash working capital claim by approximately $384,000. As noted in the response to PSC-LA-156, this assumes a service period of 15 days, a billing period of 5 days, and a payment period of 25 days. The resulting revenue lag of 45 days is reasonable relative to the revenue lags of other utilities that bill monthly.

Q. Did you reflect an adjustment to the Company's revenue lag in your revenue requirement recommendation?

A. No, I did not. It is my understanding that the Public Advocate is opposed to the Company's proposal to adopt monthly billing at this time. Therefore, I did not adjust the Company's revenue lag to reflect monthly billing. However, such an adjustment should be made if the PSC ultimately approves the Company's request to convert its customers to monthly billing. In addition, regardless of whether or not monthly billing is adopted, the Company's cash working capital allowance should be updated to reflect the level of pro forma costs approved by the Commission in this case.

Q. How did the Company quantify the customer deposit and service deposit offsets reflected in its working capital claim?

A. Customer deposits and service deposits are treated as offsets to the Company's cash working capital requirement as derived from the lead/lag study. In this case, the Company's claim reflects a thirteen-month average balance of customer deposits and service deposits, based on the thirteen months ended December 31, 2010, the end of the test year in this case.

Q. Are you recommending any adjustment to the Company's working capital claims relating to customer deposits and service deposits?

A. Yes, I am. I recommend that the working capital claims for customer deposits and service deposits be updated with the most recent thirteen-month average balances. At Schedule ACC-17, I have made an adjustment to reflect the actual thirteen-month balances ending May 31, 2011. This is the latest information that I have available as of the preparation of this testimony.

F. Summary of Rate Base Issues

Q. What is the impact of all of your rate base adjustments?

A. My recommended adjustments reduce the Company's rate base from $198,287,047, as reflected in its filing, to $189,067,271, as summarized on Schedule ACC-9.

VI. OPERATING INCOME ISSUES

A. Pro Forma Operating Revenue

Q. Are you recommending any adjustments to the Company's pro forma revenue claim?

A. Yes, I am recommending adjustments to the Company's claims for residential sales revenue, for contract operations revenue, and for rental revenue.

Q. How did the Company develop its claim for pro forma residential consumption in this case?

A. The Company's methodology is described in the Direct Testimony of Mr. Spacht at pages

14-15. According to Mr. Spacht,

> A simple five-year average for annual consumption was calculated for the period beginning January 1, 2006 through December 31, 2010. This average was the basis for the consumption used in calculating gross water sales revenues for each customer in the Test Period.
>
> Where there was insufficient data to perform a five-year average or five years of consecutive data points were not available, the available data was used to determine the projection. For example, if two years of data were available, a two-year average was used. For new customers, or customers for whom the Company did not have a full twelve-month period of consumption information, the average overall consumption for the applicable customer class was used as the projected consumption.
>
> In addition, certain anomalies occurred within the measurement periods that significantly skewed data produced using the simple five year average. Since the system aggregates all bills during the measurement period it does not distinguish bills that may have been issued incorrectly and either reissued or corrected in a later bill. As such, the Company employed a test to compare average results with standard deviation of the customer test data. If the average differs, either higher or lower, from the standard deviation more than two times that standard deviation, then the quarterly bill is adjusted to the average of the rate class. Also if the average is more than 50% below or above the actual consumption during the test year, the test year information is used.
>
> Once the consumption for each customer was calculated and because Artesian employs an inclining rate structure for its customers, a calculation was then made to determine, on average, how much each customer used in each quarterly period and in what rate block their individual consumption would fall.

Q. In prior cases, has DPA taken issue with the Company's revenue normalization methodology?

A. Yes. In Docket No. 04-42, the DPA objected to the methodology used to normalize pro forma revenue, for reasons that will be more fully discussed below. In that case, the PSC adopted the Hearing Examiner's recommendation that the Company's methodology be accepted. In Docket Nos. 06-158 and 08-96, the DPA again opposed the methodology utilized by Artesian. Those cases were resolved by stipulation.

Q. What is the average residential consumption per customer being used by the Company in this case?

A. The Company's revenue claim is based on average residential consumption of 51.91 thousand gallons (tgs) per customer. In my opinion, this consumption level is artificially low, due to the manner in which AWC calculates its pro forma consumption. While the Company states that its claim is based on a five-year average, in reality a five-year average is used for only a small number of customers. Moreover, the fact that AWC calculates individual customer averages for each residential customer, and then aggregates those averages, makes it impossible for the PSC to verify the accuracy of the Company's calculation, especially when one considers the number of further "adjustments" that AWC makes to the data.

Q. How do most water utilities determine pro forma consumption?

A. Customer consumption, particularly residential consumption, can vary significantly from year-to-year due to changes in rainfall and temperature conditions. Since the objective of utility ratemaking is to establish rates based on "normal" operating conditions, including normal weather, variations in consumption from year-to-year are generally mitigated by the use of an average consumption over a multi-year period. In every utility case in which I have been involved except for cases involving AWC, these multi-year average consumption amounts have been developed on an aggregate basis for each customer class, i.e., each year, the total consumption of the class is divided by the average number of customers in the class to determine the average annual usage per customer. However, AWC develops its average usage on a customer-by-customer basis, i.e., its class average is a compilation of individual averages for each customer in the class. Thus, for residential customers, AWC claims to calculate over 73,000 individual averages and then to sum these averages to determine the overall average for the class.

Q. Does the methodology used by AWC create a bias?

A. Yes, it does. When a multi-year average is developed on an individual customer basis, annual variations in usage that occur due to extreme weather conditions can seriously skew the overall average results, particularly if the system is a fast growing system that is continually adding new customers, like AWC. For this reason, I believe that it is more accurate to utilize a five-year average based on total aggregated consumption per customer rather than a five-year average based on individual customer usage, which includes many customers who have not been on the system for a full five years.

Q. Can you provide an example?

A. Yes, assume that the Company has two customers during a five-year period. Further assume that each customer uses 80.0 tgs in Years 1, 2, and 3 and 60.0 tgs in Years 4 and 5. The average consumption per customer is 72.0 tgs, regardless of whether one calculates the average on a per customer basis or on a total company basis, as shown below:

Year	Customer 1	Customer 2	Aggregate Average	Average of Individuals
1	80.0 tgs	80.0 tgs	80.0 tgs	
2	80.0 tgs	80.0 tgs	80.0 tgs	
3	80.0 tgs	80.0 tgs	80.0 tgs	
4	60.0 tgs	60.0 tgs	60.0 tgs	
5	60.0 tgs	60.0 tgs	60.0 tgs	
Average Per Customer	72.0 tgs	72.0 tgs	72.0 tgs	72.0 tgs

However, the two methods yield significantly different results if the system is growing. For example, in the following example, the Company had one customer in Years 1 and 2, and two customers in Years 3, 4 and 5.

Year	Customer 1	Customer 2	Aggregate Average	Average of Individuals
1	80.0 tgs		80.0 tgs	
2	80.0 tgs		80.0 tgs	
3	80.0 tgs	80.0 tgs	80.0 tgs	
4	60.0 tgs	60.0 tgs	60.0 tgs	
5	60.0 tgs	60.0 tgs	60.0 tgs	
Average Per Customer	72.0 tgs	66.6 tgs	72.0 tgs	69.3 tgs

In this case, using the Company's methodology, the overall average would be 69.3 tgs (72.0 tgs pl

The Company's methodology gives more weight to the average consumption in Years 3, 4 and 5, when two customers where on the system, then it does to Years 1 and 2, when only one customer was present. The Company's methodology would similarly overstate the prospective average consumption if customers were added during years with particularly high usage, i.e., in periods that were dryer and hotter than normal, as shown below:

Year	Customer 1	Customer 2	Aggregate Average	Average of Individuals
1	80.0 tgs		80.0 tgs	
2	80.0 tgs		80.0 tgs	
3	80.0 tgs	80.0 tgs	80.0 tgs	
4	100.0 tgs	100.0 tgs	100.0 tgs	
5	100.0 tgs	100.0 tgs	100.0 tgs	
Average Per Customer	88.0 tgs	93.3 tgs	88.0 tgs	90.6 tgs

Using the Company's methodology, the above example would result in average consumption of 90.6 tgs (88.0 tgs plus 93.3 tgs divided by 2). The problem with the Company's methodology is that is provides no information regarding the expected usage for new customers during the first two years. Thus, it assumes that new customers would have used the same amount of water in Years 1 and 2 as they did in Years 3, 4 and 5, ignoring the weather-related impacts on usage. Since these weather-related impacts are the reason for normalizing usage in the first place, it is unreasonable to ignore the likely usage patterns of these customers in the earlier periods in our example.

Moreover, while the Company claims that the basis for its pro forma consumption is a five-year average, the fact is that the Company is not using a five year average for the majority of its customers. The Company has reflected 73,892 residential customers in its Test Period claim. However, as shown in the response to DPA-A-87, a five year average was used for only 37.9% of residential customers. The Company used the "average deviated bill" for 46.5% of residential customers, which means that it adjusted bills for these customers since their actual results fell outside of the "deviation and variance test" applied by AWC.[1] The fact that the Company determined that actual usage was somehow "abnormal" for 46.5% of its customers illustrates the significant problems with the Company's methodology. AWC used still other methodologies for its remaining residential customers. Usage for 3.5% of residential customers was based on their "current bill", which was the actual test year usage. Artesian used the "current bill" if it determined that "actual consumption were [sic] indicative of expected future consumption." The Company used various region, class, rate schedule, or meter averages for the remaining 12.1% of its residential customers. Thus, the Company's methodology is actually based on numerous methodologies, many of which contain a significant degree of subjective company input into what is "normal".

Q. What is the average consumption per residential customer that results from the Company's methodology?

1 See the response to DPA-A-159.

A. The Company's methodology results in an overall residential usage level of 51.91 tgs, a reduction of 3.7% from the actual test year consumption of 53.92 tgs. Moreover, the pro forma consumption level used by AWC is lower than the actual usage experienced in four of the past five years, as shown below:

Year	Consumption
Test Period	51.91 tgs
2010	53.92 tgs
2009	50.80 tgs
2008	55.11 tgs
2007	56.64 tgs
Five Yr. Avg.	54.80 tgs
Three Yr. Avg.	53.28 tgs

Q. Is there another concern with the Company's methodology?

A. Yes, there is. The methodology used by the Company requires anyone attempting to verify their calculations to calculate a separate average for each of the over 73,000 residential customers; to then determine, by customer, whether that average or some other average should be used; and finally to sum up the individual 73,000 averages. This is an impossible task. The difficulty of calculating averages using the Company's approach is apparent for just an example with two customers. It would be virtually impossible for Staff or DPA to verify individual calculations for each of the more than 73,000 residential customers of AWC. This is especially true when one considers the fact that a five-year average was actually used for only 37.9% of customers, and that surrogates were used for the vast majority of the Company's residential customers. In fact, the use of an individual customer's five-year average actually became the exception, rather than the norm, in this case. I am unaware of any other regulatory commission that uses a five-year average on a per customer basis, or that makes any pro forma consumption adjustments to residential consumption on an individual customer basis.

Q. Didn't you object to the use of individual five-year averages in Docket No. 04-42 and weren't your arguments rejected by both the Hearing Examiner and the Commission?

A. Yes, they were. However, the calculation of the impact of using aggregate vs. individual data was not addressed until the hearing phase of that case, and the examples shown above were not included in my prefiled testimony. Moreover, we now know that in the majority of cases, the Company itself is not using actual individual averages but instead is using "average deviated bills" or some other benchmark, which the Company claims is necessary since so many of its customers have actual usage that falls outside of its standard deviation and variance tests. This fact alone suggests that there are serious flaws in its averaging methodology. Therefore, I look forward to once again presenting this issue to the Hearing Examiner and the Commission. I believe that once the Hearing Examiner and the Commission have the opportunity to review the current data and the resulting bias resulting from that data, they will conclude that the Company's methodology is fatally flawed.

Q. Has AWC's methodology consistently resulted in a reduction to pro forma revenues?

A. Yes, it has. It is interesting to note that in the last three cases, AWC's averaging methodology has resulted in a reduction to pro forma revenue at present rates, which in turn has increased its rate increase request.

Q. How do you recommend that the PSC determine Test Period residential consumption in this case?

A. Given the weather-related fluctuations that occur from year-to-year, I recommend that a multi-year average be used. However, instead of calculating thousands of individual averages, and then making subjective value judgments about whether they should be included, I recommend that the multi-year average be calculated on a class basis, i.e., by averaging annual consumption per customer for the residential class.

Q. What methodologies are used by Tidewater Utilities, Sussex Shores and United Water Delaware in their revenue normalization calculations?

A. These companies develop their revenue normalization adjustments on an aggregated basis, as I am proposing in this case. The use of aggregate data is more accurate, is easier to calculate, and is verifiable. Accordingly, I urge the PSC to adopt a revenue normalization for AWC that is based on the use of aggregate data.

Q. How did you quantify your adjustment?

A. Regulatory commissions generally utilize a three-year or five-year average to normalize consumption. As shown above, the five-year average is 54.80 tgs and the three-year average is 53.28 tgs. To be conservative, I have utilized the lower three-year average of 53.28 tgs. Moreover, this average is very close to the actual test year consumption of 53.92 tgs. Applying this consumption level to the projected number of Test Period residential customers results in total consumption of 3,937,166 tgs. This is 101,123 tgs more than the usage included in the Company's claim.

In order to calculate the revenue impact of this increased consumption, I have priced out this incremental consumption at the tariff rate for the second rate block. In quantifying the impact of my recommendation on the Company's operating income, I also made an adjustment to reflect the fact that the Company receives finance charges and incurs certain uncollectible costs and Commission assessments as revenues increase. My adjustment is shown in Schedule ACC-19. It should be noted that I did not make an adjustment to increase operating expenses to reflect increased power and chemical costs resulting from incremental consumption. While the Company made price adjustments to update its per unit costs of power and chemicals, it did not make any volume adjustments to reflect lower power and chemical purchases due to reduced sales volumes. Instead, the actual test year volumes for power and chemicals are included in its claim. Therefore, I did not feel that it was necessary to include incremental expense adjustments based on increased consumption, especially since my recommended consumption level is very close to the actual consumption experienced during the test year.

Q. Please describe your adjustment relating to the Company's claim for contract operations revenue.

A. Contract operations revenue is revenue that AWC receives as a result of service agreements with certain private and municipal water providers. The Company has included the costs of serving these providers in its revenue requirement and credits back to its revenue requirement any revenues received from these agreements. In this case, AWC included a Test Period adjustment to reduce its contract operations revenue by $30,038. I have eliminated this adjustment and reflected the actual Test Year contract operations revenue in my recommendation.

As shown in the response to PSC-LA-44, the Company's contract operations revenue varies by month. For the twelve months ending May 31, 2011, the most recent period available, contract operations revenue was $282,091, or slightly higher than the Test Year amount of $277,611. Thus, there is no indication that contract operation revenues are declining. My adjustment to reflect the Test Year level of contract operations revenue is shown in Schedule ACC-20.

Q. Do you have any other comments about the Company's contract operations revenue?

A. Yes, I do. In response to DPA-A-97, the Company indicated that its "does not specifically track expenses related to these functions." Thus, while AWC indicated that the "contracts are priced to cover routine visits", there is no evidence that all costs are being covered by the contract prices. Thus, there is a possibility that ratepayers are subsidizing contract operations. Without tracking all expenses associated with contract operations, and making such records available for PSC review, the Company cannot be sure that its contract prices are covering all of its costs. Therefore, I recommend that the PSC order AWC to begin tracking all costs associated with contract operations and to demonstrate in its next base rate case that its prices for contract operations are sufficient to cover all associated costs.

Q. Are you also recommending an adjustment to the rental revenue included by AWC in its claim?

A. Yes, I am. Similar to its adjustment for contract operations, AWC included a pro forma adjustment to reflect a reduction to its Test Year rental revenue, from $389,071 to $355,982. This is primarily revenue that AWC receives from cellular carriers for renting space for antennae. As shown in the response to PSC-LA-41, rental revenue is relatively stable from month to month, although there has been a slight upward trend since the beginning of the Test Year. For the most recent twelve month period, AWC received rental revenue of $410,544. Moreover, in May 2011, its monthly rental revenue was $34,262, or $411,144 on an annualized basis. Thus, I do not believe that there is any basis for the Company's pro forma adjustment to reduce Test Year rental revenue. Accordingly, at Schedule ACC-21, I have made an adjustment to reflect the actual Test Year rental revenue of $389,071 in my revenue requirement recommendation.

B. Salaries and Wage Expense

Q. How did the Company determine its salary and wage claim in this case?

A. As stated on page 22 of Mr. Spacht's Direct Testimony, AWC's claim is "the result of the annualization of employees added and lost during the Test Year, and also during Test Period, annualization of salary and wage increases incurred in the Test Year, and a projected 4 percent increase in base salaries." While Mr. Spacht went on to state that "[n]o new positions have been included beyond personnel added through the date of this application", he did include costs for eight replacement positions and two new intern positions in his claim.

Q. Are you recommending any adjustments to the Company's salary and wage claim?

A. Yes, I am recommending an adjustment relating to employee vacancies. The Company's expense claim for salaries and wages represents an increase of 7.4% over the actual test year expense. AWC has included an expense adjustment of $562,364 relating to vacant positions.[2] AWC has included payroll costs that reflect a full complement of employees. However, it is normal and customary for companies to have unfilled positions at any given time as a result of terminations, transfers, and retirements. If utility rates are set based on a full complement of employees, and if these employee positions remain vacant, then ratepayers will have paid rates that are higher than necessary, to the benefit of shareholders. Therefore, when setting rates, I recommend that the PSC consider the fact that, at any given

2 The costs associated with the two new intern positions were projected to be capitalized and therefore are not

time, some positions are likely to be vacant.

Q. How did you quantify your adjustment?

A. I eliminated the Company's expense claim of $562,364 for replacement employees, as quantified in AWC's workpapers. While this amount already excludes costs that the Company proposed to capitalize, it does include amounts that AWC proposes to allocate to other entities or activities. As derived from DBS Exhibit 1R, Schedule 3-C, approximately 6.13% of payroll expenses are allocated to other entities. Therefore, on Schedule ACC-22, I have included only 93.87% of the Company's expense claim in my adjustment. Otherwise, I would be overstating the impact of my recommendation on the Company's revenue requirement.

C. <u>Other Compensation Expense</u>

Q. Please describe the Company's claim for incentive compensation costs.

A. The Company has provided limited, but conflicting, information about its incentive compensation programs and costs. In the response to DPA-A-16, AWC identified costs for two bonus programs, but stated that these programs "are not traditional 'incentive compensation programs' that require specific metrics with specific incentive compensation." The first program was identified as a bonus program, whereby AWC "provides bonuses recognizing contributions by employees above and beyond their normal duties. In addition,

reflected in the Company's expense claim.

the Board of Directors traditionally awards a year-end bonus to employees to recognize the contributions in achieving overall Company performance." The Company indicated that it had incurred costs for the bonus program in the test year.[3] Moreover, it stated that "[n]o adjustments were made to test year incentive compensation expenses incurred." However, in the response to DPA-A-146, the Company indicated that "[t]he Company has restated the entirety of its payroll expense, which includes any bonuses paid to employees, by annualizing current levels of hourly and salary levels and adjusting total payroll expense from test year actual expense to the annualized calculation...the only bonus still included...is a $700 per employee holiday bonus." While the workpapers do include a $700 expense for many employees, "other" compensation for other employees is significantly more, ranging up to $5,850 per employee. No details were provided about the criteria used by the Board to make annual awards.

According to the response to DPA-A-16, the second program, or TIPS program, provides a monetary award "based on the value of suggestions" that "result in savings for the Company or otherwise benefit the Company's customers or employees." However, no TIPS awards were made in the past three years.

The Company also has a stock options program, as described in the response to DPA-A-34. Pursuant to the plan, the Compensation Committee of the Board of Directors has the complete discretion to "(i) determine the Participants to whom Grants shall be made under the Plan, (ii) determine the type, size and terms and conditions of the Grants to be made to each such Participant, (iii) determine the time when the grants will be made and the duration of any applicable exercise or restriction period,...(iv) amend the terms and conditions of any previously issued Grant...and (v) deal with any other matters arising under the Plan." According to the response to DPA-A-19, $471,731 of stock options was exercised in the test year by five individuals, including $163,729 by Dian Taylor, CEO and President of the Company. In response to DPA-A-150, the Company indicated that it did not include any expense for equity compensation in its Test Period claim.

Q. What adjustment are you recommending to the Company's claim for incentive compensation?

A. Given the lack of specific information provided about incentive compensation programs, and the conflicting information about the costs included in its claim, I have made an adjustment to remove all "Other Earnings" costs from the Company's Test Period claim. This adjustment is consistent with past decisions of the PSC, where the Commission excluded incentive compensation costs from customer rates. The PSC has expressed concerns about incentive compensation programs, especially those that are tied to earnings results. Providing employees with a direct financial interest in the profitability of the Company is an objective that would benefit shareholders, but it does not benefit ratepayers. Incentive compensation awards that are based largely on earnings criteria may violate the principle that a utility should provide safe and reliable utility service at the lowest possible cost. This is

3 It is my understanding that the actual amount of such costs is confidential.

because these plans require ratepayers to pay higher compensation costs as a consequence of high corporate earrings, a spiral that does not directly benefit ratepayers, but does benefit shareholders and the management to whom such awards are granted.

Incentive compensation plans tied to corporate performance result in greater enrichment of company personnel as a company's earnings reach or exceed targets that are predetermined by management. It should be noted that it is the job of regulators, not the shareholders or company management, to determine what constitutes a just and reasonable rate of return award to shareholders in a regulated environment. Regulators make such a determination by establishing a reasonable rate of return award on rate base in a base rate case proceeding. My adjustment to eliminate these costs is shown in Schedule ACC-23.

Q. Do you have any other comments regarding the Company's compensation levels?

A. Yes, I do. While I have not made any specific disallowance relating to executive positions, it should be noted that the Company has a relatively large number of highly compensated employees. According to the Company's workpapers, AWC has 29 positions with compensation exceeding $100,000 and 6 positions with compensation exceeding $200,000. In my experience, this level of compensation is highly unusual for a relatively small water company like AWC, lending further support for my adjustments relating to both incentive compensation costs and vacant positions.

D. Payroll Tax Expense

Q. What adjustment have you made to the Company's payroll tax expense claim?

A. Since I am recommending a reduction to the Company's payroll and other compensation costs, it is necessary to make a corresponding adjustment to eliminate certain payroll taxes from the Company's revenue requirement claim. At Schedule ACC-24, I have eliminated payroll taxes associated with my recommended payroll and other incentive compensation adjustments, using the statutory payroll tax rate of 7.65%.

E. <u>Pension Expense</u>

Q. Did AWC include a significant post Test Year adjustment to its pension costs?

A. Yes, it did. As shown in DBS Exhibit 1R, Schedule 3-C, Supplemental, the Company is requesting an increase in pension costs from the actual Test Year cost of $886,721 to a Test Period claim of $1,112,732, an increase of over 25%. The Company does not have a defined benefit plan. Instead, it sponsors a defined contribution or 401K plan, whereby contributions are based on a percentage of salary and wage costs.

Q. Did the Company provide any explanation for this increase?

A. On page 23 of Mr. Spacht's testimony, he indicated that the pension cost adjustment "is driven and associated with proposed changes in our salary and wages through the end of the Test Period." Although the Company provided a breakdown of its pension contribution per employee in its salary and wage workpapers, it did not provide any details as to how the amount of the contributions was determined. In addition, the Company's claim includes

$284,500 in "Supplemental Pension" costs. AWC did not identify how this amount was determined, nor did they identify the criteria for awarding supplemental pension contributions. This is especially troubling because in the response to DPA-A-20, the Company indicated that it did not provide Supplemental Executive Retirement Pension ("SERP") benefits.

Q. What do you recommend?

A. Since the Company's defined contribution pension plan is directly tied to salary and wage costs, I have made an adjustment to limit the post Test Year pension cost adjustment to a percentage of my recommended Test Period salary and wage increase. I first calculated the percentage of pension costs to total payroll costs incurred in the Test Year. This resulted in a pension ratio of 5.63%. I then applied the 5.63% to the Company's total Test Period payroll costs, adjusted to reflect my recommended disallowance based on vacant positions, and compared this amount with the Company's claim. This resulted in a pension cost disallowance of $204,238. I then allocated a portion of this disallowance to capital and a portion to other entities, based on the percentages used by AWC in its claim. My adjustment is shown in Schedule ACC-25.

F. <u>Workers Compensation Expense</u>

Q. How did the Company develop its claim for workers compensation costs?

A. The Company's claim is based on the ratio of workers compensation costs to total payroll costs incurred in the Test Year, resulting in a workers compensation rate of 1.18%. AWC then applied this rate of 1.18% to its Test Period pro forma payroll claim to develop its claim for workers compensation costs. A portion of these costs was then capitalized and/or charged to other entities.

Q. Are you recommending any adjustment to the Company's workers compensation costs?

A. Yes, I am. Since I am recommending an adjustment to the Company's payroll cost claim, it is necessary to make a corresponding adjustment to its claim for workers compensation costs. To quantify my adjustment, I accepted the workers compensation rate of 1.18% reflected in the Company's filing. I applied this rate to my pro forma recommended payroll costs, net of the payroll and other compensation adjustments recommended earlier in this testimony, to determine the associated reduction in workers compensation costs. I then made a further adjustment to reflect only the expense portion of my recommendation. My adjustment is shown in Schedule ACC-26.

G. Tank Painting Expense

Q. Did the Company make any adjustment to its Test Year tank painting costs?

A. The Company did not make any adjustment to tank painting costs in its original testimony. However, in its Supplemental Testimony filed on June 30, 2011, AWC included a post Test Year adjustment of $100,000 relating to tank painting costs. On page 5 of his Supplemental testimony, Mr. Spacht noted that the Company was in the process of evaluating bids for tank maintenance. Mr. Spacht went on to state that the lowest bid received was approximately $500,000 greater than the current contract in place and $100,000 above the amount that is currently reflected in rates. Therefore, in his Supplemental Testimony, he included an adjustment to reflect an increase in tank painting costs.

Q. Have you accepted the Company's post Test Year adjustment to tank painting costs?

A. No, I have not. At this time the Company's adjustment is speculative. AWC has not yet entered into a new contract for tank painting costs. Therefore, the $100,000 adjustment does not represent a known and measurable change to Test Year results. In addition, the Company has not demonstrated that the $364,500 of tank painting costs included in the Test Year no longer represents a normalized level for ratemaking purposes.[4] Accordingly, based on the information provided to date by AWC, I recommend that the Company's proposed Test Period adjustment be rejected. My adjustment is shown in Schedule ACC-27. If a contract is finalized prior to the hearings in this case, I will reevaluate my recommendation, based on any additional supporting documentation provided by AWC.

H. <u>Incremental Billing Expenses</u>

Q. Please describe the Company's claim for incremental billing costs associated with monthly billing.

A. As discussed earlier in the Working Capital section of this testimony, the Company is

4 See the response to DPA-A-77.

proposing to implement monthly billing for all customers. Currently, the vast majority of AWC's customers are billed on a quarterly basis. Converting to monthly billing will increase the Company's costs associated with lock box services, as well as costs associated with billing supplies and postage. AWC included two adjustments, totaling $390,173 in its claim relating to the incremental costs associated with monthly billing.

Q. Is the Public Advocate recommending that monthly billing be implemented?

A. No, it is my understanding that Public Advocate witness Glenn Watkins is recommending that the PSC deny the Company's request to implement monthly billing for all customers at this time. Therefore, at Schedule ACC-28, I have made an adjustment to eliminate the incremental costs associated with monthly billing.

I. <u>Charitable Contributions</u>

Q. Did AWC include charitable contributions in its revenue requirement claim?

A. Yes, it did. As shown in DBS Exhibit 1, Schedule 3-F, the Company's claim includes $44,106 in charitable contributions and donations.

Q. Do you believe that it is appropriate to recover charitable contributions and donations made by utilities from captive ratepayers?

A. No, I do not. Utility rates should include a reasonable level of costs that are necessary for the provision of safe and reliable utility service. Donations and charitable contributions, while worthwhile expenditures, should not be borne by ratepayers. Donations and contributions are not necessary to the provision of safe and adequate utility service. Furthermore, by including such costs in rates, utilities force ratepayers to indirectly contribute to those organizations selected by utility management, effectively forcing ratepayers to support organizations whose goals and objectives may conflict with those of any specific ratepayer. For these reasons, most regulatory commissions prohibit utilities from recovering charitable contributions and donations in their utility rates.

Q. Do charitable contributions and donations benefit the local community and therefore benefit ratepayers, at least indirectly?

A. In many cases, charitable contributions and donations do benefit the local community and therefore such contributions can benefit ratepayers. However, the standard of whether or not to include an expense in rates is not whether the cost benefits ratepayers. The standard is whether such a cost is necessary to the provision of safe and adequate utility service. There are many types of expenditures that could benefit ratepayers. For example, ratepayers would benefit if every utility provided them with periodic cash payments or free service. Ratepayers who are also employees would benefit from excessive salaries. None of these expenditures, however, would be an acceptable ratemaking expense. Donations and charitable contributions are not acceptable ratemaking expenses either, and the recovery of such costs should not be forced upon Delaware ratepayers.

Q. Did the Commission address this issue in the Company's last litigated case?

A. Yes, I did. In PSC Docket No. 04-42, the Hearing Examiner recommended that the PSC deny the Company's request for recovery of contributions, and the PSC concurred. The Hearing Examiner's noted that "the Delaware Supreme Court noted that the Commission may disallow contributions if they are not related to the fostering of the goodwill of the Company. Judging from the public comment in this case, which reflects ever-tightening personal budgets strained by ever-rising utility rates, it is likely that in today's environment charitable contributions no longer foster goodwill, at least among ratepayers."[5] For most ratepayers, the current economic environment is every more precarious than the economic environment that existed when Docket No. 04-42 was litigated. The Hearing Examiner in that case also noted that the Company was filing rate cases more frequently than it had done in the past, and that the Company was facing increasing costs resulting from stricter water quality standards, among other factors. The Hearing Examiner also noted that in 2001, the New Jersey Supreme Court had reversed its earlier position on ratepayer funding of charitable contributions, noting that 40 states prohibited utilities from including charitable contributions in utility rates.

Q. What do you recommend?

A. Given the fact that charitable contributions are not necessary for the provision of safe and adequate utility service, given the PSC's decision to disallow charitable contributions in PSC

5 Recommended Decision of the Hearing Examiner, PSC Docket No. 04-42, and paragraph 66.

Docket No. 04-42, and given the fact that most other states prohibit utilities from recovering charitable contributions from ratepayers, I recommend that the Company's claim for such recovery be denied. My adjustment is shown in Schedule ACC-29.

J. <u>Dues and Lobbying Expense</u>

Q. Has AWC included any lobbying costs in its revenue requirement claim?

A. Yes, it has. According to the response to DPA-A-154, AWC did remove 16% of dues paid to the National Association of Water Companies ("NAWC") and 3% of dues paid to the Delaware Contractors Association, on the basis that these percentages of dues represented the amounts spent by these organizations on lobbying activities. However, the Company has included in its claim dues for certain other organizations that engage in lobbying activities. These include the Committee of 100 and various Chambers of Commerce.

Q. Are lobbying costs an appropriate expense to include in a regulated utility's cost of service?

A. No, they are not. Lobbying expenses are not necessary for the provision of safe and adequate utility service. Ratepayers have the ability to lobby on their own through the legislative process. Moreover, lobbying activities have no functional relationship to the provision of safe and adequate regulated utility service. If the Company were to immediately cease contributing to these types of efforts, utility service would in no way be disrupted. For all these reasons, lobbying costs are generally disallowed by regulators and I recommend that such costs be disallowed in this case as well.

Q. How did you quantify your adjustment?

A. I have eliminated 100% of the payments to the Committee of 100, as I understand that the primary purpose of this organization is legislative advocacy. I also eliminated 100% of the dues associated with Better Investing, as the Company has not demonstrated that these costs benefit ratepayers. With regard to Chamber of Commerce dues, America Water Works Association dues, and Home Builders Association of Delaware Dues, I used the NAWC lobbying percentage of 16% to quantify my adjustment. Therefore, I eliminated 16% of the dues included in the Company's claim for these organizations. My adjustment is shown in Schedule ACC-30.

K. <u>Advertising Expenses</u>

Q. Has the Company included any advertising expenses in its revenue requirement claim?

A. Yes, as shown in DBS Exhibit 1, Schedule 3-E, AWC has included $7,720 of advertising costs in its claim. This includes $1,750 of employment advertising, $2,513 of CPCN advertising, and $3,457 of other print media advertising.

Q. Are you recommending any adjustment to the Company's advertising expense claim?

A. Yes, I am recommending that most of the print media advertising costs be disallowed. The Company provided details of these costs in its response to PSC-LA-77. Except for $60.00

related to sign permits, these ads constitute corporate advertising that should not be recovered from ratepayers. For example, several advertisements promote Artesian's engineering services, design/build services, contract operations, regulatory reporting services, and meter and billing services. The remaining advertisements promote Artesian Resources. All of these advertisements are directed at promoting the corporate image and none of them are necessary for the provision of regulated water service. Accordingly, except for the sign permit costs of $60.00, I am recommending that all print media advertising costs be disallowed. My adjustment is shown in Schedule ACC-31.

L. Meals and Entertainment Expense

Q. Are you recommending any adjustment to the Company's meals and entertainment expense claim?

A. Yes, I am. The Company has included in its filing $37,623 of meals and entertainment expenses that are not deductible on the Company's income tax return. The Internal Revenue Service ("IRS") limits the deductibility of meals and entertainments expenses to 50%. These are costs that the IRS has determined are not appropriate deductions for federal tax purposes. If these costs are not deemed to be reasonable business expenses by the IRS, it seems reasonable to conclude that they are not appropriate business expenses to include in a regulated utility's cost of service. Accordingly, at Schedule ACC-32, I have made an adjustment to eliminate these costs from the Company's revenue requirement. While there may be certain costs for meals that should be borne by ratepayers, there are almost certainly costs included in this category that should be entirely excluded from the Company's revenue requirement. Therefore, my recommendation to use the 50% IRS criteria provides a reasonable balance between shareholders and ratepayers and should be adopted by the PSC.

M. Interest on Customer Deposits

Q. How is interest on customer deposits treated for ratemaking purposes?

A. Customer deposits are reflected as a rate base deduction. Therefore, ratepayers receive the benefit of a lower rate base as a result of customer deposits. Since ratepayers receive this benefit, then ratepayers should pay the associated interest costs. Accordingly, interest on customer deposits is generally included as an operating expense in a regulated utility's cost of service. In this case, the Company has included a post Test Year adjustment to reflect interest on customer deposits at an interest rate of 0.25%. The Company's interest expense claim is synchronized with the level of customer deposits deducted from rate base.

Q. Are you recommending any adjustment to the Company's claim?

A. Yes, I am. Earlier in this testimony, I recommended that the rate base deduction be updated to reflect the most recent 13-month average balance for customer deposits. Therefore, it is necessary to also update the interest on customer deposits so that the interest expense is based on the average level of deposits held by the Company. At Schedule ACC-33, I have made an adjustment to increase the Company's interest expense to reflect interest on the level of customer deposits that I have reflected as my rate base deduction. To quantify my adjustment, I accepted the Company's proposed interest rate on customer deposits of 0.25%.

N. **Property Tax Expense**

Q. How did the Company develop its property tax expense claim in this case?

A. AWC began with the actual property taxes paid in the Test Year. The Company then made adjustments to normalize the assessments for 2010 plant additions, to reflect additional assessments on 2010 plant additions, and to reflect projected assessments on 2011 plant additions.

Q. Are you recommending any adjustment to the Company's claim?

A. Yes, since I am recommending an adjustment to the Company's utility plant-in-service claim, it is necessary to make a corresponding adjustment to the associated property tax expense. To quantify my adjustment, I first compared the Company's actual utility plant-in-service additions through May 31, 2011 with the additions projected in AWC's filing. As shown on Schedule ACC-34, the Company had not completed 82.85% of its projected additions as of that date. Therefore, I eliminated 82.85% of AWC's property tax adjustment associated with projected Test Period additions. If the Company provides additional updates for utility plant-in-service during the litigation phase of this case, I will update my recommended property tax adjustment accordingly.

O. Depreciation Expense

Q. Are you recommending any adjustments to the Company's depreciation expense claim?

A. Yes, I am recommending two adjustments. First, Public Advocate witness Michael Majoros is recommending revisions to the Company's claimed depreciation rates that will result in a reduction to pro forma depreciation expense from the amount claimed in the filing. At Schedule ACC-35, I have made an adjustment to reflect the impact of the depreciation rates being proposed by Mr. Majoros. To quantify my adjustment, I have reduced the impact of Mr. Majoros recommendation to reflect the fact that depreciation expense on CIAC and advances is not included in the cost of service charged to regulated ratepayers.

Second, since I am recommending an adjustment to the level of Test Period plant additions claimed by AWC, it is necessary to make a corresponding adjustment to eliminate the associated depreciation expense. At Schedule ACC-36, I have made an adjustment to eliminate depreciation on the utility plant that I recommend be excluded from rate base. To quantify that adjustment, I utilized an annual composite depreciation rate developed from Mr. Majoros' recommendation and applied that rate to my recommended utility plant-in-service adjustment. Once again, I then made a further adjustment to reflect the fact that a portion of the Company's depreciation expense relates to CIAC and advances and therefore is not charged to ratepayers.

P. <u>State Income Tax Expense</u>

Q. Are you recommending any adjustment to the Company's state income tax expense claim?

A. Yes, I am. AWC has included $592,068 of current and deferred state income tax expense in its revenue requirement claim. However, it is my understanding that the Company has substantial state net operating loss ("NOL") carryforwards that can be used to offset any state income tax liability that may arise between the resolution of this case and the filing of the Company's next base rate case. Therefore, AWC is not expected to incur any payment of state income taxes over the next several years. The specific amount of the state NOL carryforward available to the Company is confidential, but will be provided by the Public Advocate to the Hearing Examiner during the hearing phase of this case.

Q. Was the existence of NOL carryforwards recognized in the Company's last base rate case?

A. Yes, this issue was discussed in the testimony of Public Advocate witness James Cotton, a portion of which was filed under seal. Moreover, in the Settlement Agreement in PSC Docket No. 08-96, the parties agreed that "the revenue being recovered by the Company pursuant to the settlement does not include any recovery of funds attributable to state income tax expense, because it is unlikely that any state income tax will be paid by Artesian during the rate effective period."[6]

Q. What do you recommend?

A. Given the fact that AWC still has substantial state NOL carryforwards available to offset any

6 Settlement Agreement, PSC Docket No. 08-96, paragraph 4.

state income tax liability, I recommend that all state income tax expense be excluded from the Company's claim. Therefore, at Schedule ACC-37, I have made an adjustment to eliminate the Company's claim for $592,068 of state income expense at present rates. In addition, I have not reflected state income taxes in my recommended revenue multiplier, as discussed below.

Q. <u>Consolidated Income Taxes</u>

Q. How did the Company calculate its federal income tax expense claim in this case?

A. AWC calculated its pro forma income tax expense claim on a "stand-alone" basis. The Company's filing ignores the fact that AWC does not file its federal income taxes on a stand-alone basis, but rather files as part of a consolidated income tax group. By filing as part of a consolidated return, AWC can take advantage of tax losses experienced by other member companies. The tax loss benefits generated by one group member can be shared by the other consolidated group members, resulting in a reduction in the effective federal income tax rate. These tax savings should be flowed through to the benefit of Delaware ratepayers.

Q. Why should consolidated income tax benefits be flowed through to AWC ratepayers?

A. These tax benefits should be flowed through to ratepayers because these benefits reflect the actual taxes paid. Establishing a revenue requirement based on a stand-alone federal income tax methodology would overstate the Company's expense, result in a windfall to shareholders, and result in rates that are higher than necessary.

Q. Has this issue been addressed by other commissions that regulate subsidiaries of Artesian Resources, Inc.?

A. Yes, the issue of consolidated income tax adjustments has been thoroughly reviewed by both the regulatory commissions and the courts in Pennsylvania, which found that a consolidated income tax adjustment is appropriate.[7] Consolidated income tax adjustments have been standard regulatory policy for the Pennsylvania Public Utility Commission ("PUC") for many years. Delaware ratepayers deserve to receive a similar benefit.

A consolidated income tax adjustment simply recognizes that the filing of a consolidated tax return results in a collective benefit to all members of the consolidated income tax group, and that a portion of that benefit should be allocated to Delaware and its ratepayers. Once the parent company decided that a consolidated income tax return would be filed, all members of the consolidated group became individually responsible for the entire annual tax liability. Therefore, it is entirely reasonable for the Commission to recognize that AWC should share in the benefits that result from the filing of a consolidated income tax return.

If, on the other hand, the parent company wanted to retain the independence of each entity for income tax purposes, it should not have elected to file a consolidated income tax return. In that case, each entity would individually retain the benefit of any tax losses. Moreover, in that case, each entity would only be responsible to the IRS for the taxes

7 I am not an attorney and therefore my comments are limited to the ratemaking implications of these findings. I am

resulting from its own individual financial results.

Q. Do consolidated income tax adjustments attempt to impute the transactions of other entities into the regulated utility?

A. No, they do not. Consolidated tax adjustments do not attempt to impute non-regulated transactions to a utility's revenue requirement. Such adjustments simply recognize the benefits accruing to each group member as a result of participating in a consolidated return. Operating losses of members of a consolidated tax group are of little value without the income generated by the positive taxable income of other group members. In the case of AWC, that taxable income is provided by ratepayers and it is therefore reasonable for Delaware ratepayers to share in any benefits generated by a consolidated tax filing. AWC's parent company could have chosen to file stand-alone returns, thereby retaining any benefits associated with net operating losses for the companies giving rise to those losses. It chose not to do so. Instead, the stand-alone methodology used by the Company for ratemaking purposes results in the allocation to shareholders of all income tax benefits resulting from tax losses. However, there is no benefit to allocate to shareholders that does not arise, at least in part, from ratepayer-supplied utility income. There is no tax benefit without income to offset losses and that income is provided primarily by regulated utility income.

Q. Was a consolidated income tax adjustment included in the recent Settlement Agreement

not testifying on any underlying legal issues associated with consolidated income tax adjustments.

with United Water Delaware in PSC Docket No. 10-421?

A. Yes, it was. The Settlement Agreement in that case stated that "...the stipulated revenue increase...reflects a reduction of an unspecified amount of income taxes, due to the filing of a consolidated federal income tax return. No agreement as to the appropriateness of including a consolidated tax adjustment ("CTA") or any particular methodology for such calculation was reached."[8] However, I understand that this provision has no precedential value for other cases.

Q. How did you quantify your consolidated income tax adjustment?

A. My adjustment is similar to the method used in Pennsylvania. I calculated a three-year average of tax losses incurred by non-regulated members of the consolidated income tax group. A portion of these losses were then allocated to AWC, based on AWC's average percentage of positive taxable income over the past three years. This resulted in an allocation of $47,226 of annual tax losses to AWC, as shown in Schedule ACC-38.

R. <u>Interest Synchronization and Taxes</u>

Q. Have you adjusted the pro forma interest expense for income tax purposes?

A. Yes, I have made this adjustment at Schedule ACC-39. It is consistent (synchronized) with my recommended rate base, capital structure, and cost of capital recommendations. I am recommending a lower rate base than the rate base included in the Company's filing. My

8 Settlement Agreement in PSC Docket No. 10-421, paragraph 14.

recommendations result in a lower pro forma interest expense for the Company. This lower interest expense, which is an income tax deduction for state and federal tax purposes, will result in an increase to the Company's income tax liability under my recommendations. Therefore, my recommendations result in an interest synchronization adjustment that reflects a higher income tax burden for the Company, and a decrease to pro forma income at present rates.

Q. What income tax factors have you used to quantify your adjustments?

A. As shown on Schedule ACC-40, I have used a composite income tax factor of 34.00%, which is the federal income tax rate contained in the Company's filing. As discussed previously, I have not reflected any state income taxes in my revenue requirement recommendation.

Q. What revenue multiplier have you used in determining your revenue requirement?

A. As shown in Schedule ACC-41, I have used a revenue multiplier of 1.523378. In addition to the federal income tax rate of 34.0% discussed above, this revenue multiplier includes finance charge revenue of 0.28%, the PSC assessment of 0.30% and uncollectible expense of 0.52%. My revenue multiplier is identical to the revenue multiplier used by AWC except for my treatment of state income taxes.

VII. REVENUE REQUIREMENT SUMMARY

Q. What is the result of the recommendations contained in this testimony?

A. My adjustments result in a revenue deficiency at present rates of $1,527,210 as summarized on Schedule ACC-1. This recommendation reflects revenue requirement adjustments of $9,544,658 to the Company's requested revenue requirement increase of $11,071,868.

Q. Have you quantified the revenue requirement impact of each of your recommendations?

A. Yes, at Schedule ACC-42, I have quantified the revenue requirement impact of the rate of return, rate base, revenue and expense recommendations contained in this testimony.

Q. Have you developed a pro forma income statement?

A. Yes, Schedule ACC-43 contains a pro forma income statement, showing utility operating income under several scenarios, including the Company's claimed operating income at present rates, my recommended operating income at present rates, and operating income under my proposed rate increase. My recommendations will result in an overall return on rate base of 7.22%.

Q. Does this conclude your testimony?

A. Yes, it does.