

ORIGINAL



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Date: June 2, 2010

To: Arizona Corporation Commission, Utilities Division, Consumer Services

K.K. Mayes, Chairman

G.Pierce, Commissioner

S.D.Kennedy, Commissioner

P. Newman, Commissioner

B. Stump, Commissioner

Hon. Teena Wolfe

Arizona Corporation Commission  
**DOCKETED**

JUN - 2 2010

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AZ CORP COMMISSION  
DOCKET CONTROL

2010 JUN - 2 A 9: 37

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Re: Docket No. W-01303A-09-0343 & No. SW-01303A-09-0343

I am filing an opinion as a resident of Anthem, AZ and a consumer of Arizona-American Water residing at 2407 W. Hazelhurst Ct., Anthem, AZ. 85086, *Stephen P. PuhR*

In the above case, I filed an opinion on April 28, 2010, which utilized testimony given by Mr. Manrique and Mr. Rigsby and further expressed a valid rationale to eliminate some data points resulting in a more appropriate cost of capital. Today, I would like to provide insight to the earlier opinion dated April 28, 2010 which is included. In that filing, starting with page 1 as my introduction, I refer you to page four, the second paragraph, "Mr. Manrique used two DCF methods....." First, my use of Aqua America's retention growth was done as a proxy for American Water Works expected growth since Aqua America is a mid cap stock as is American Water Works. American Water Works and Aqua America are the two largest water utilities listed in the United States; hence they should be expected to grow at very similar rates. The retention growth is a conservative expectation of growth by the company's management and investors. Retention growth equals retained earnings (earnings not paid out in dividends) multiplied by expected return on equity. I ended the paragraph with the following,

"With the current economic outlook expected to be below average for years or at best similar to the last ten years that ended 2008, the table's EPS and sustainable growth projections of 9.7% and 9.1% look unreasonable. These estimates are approximately 3x the growth rates of the ten year period that ended 2008. Schedule JCM-8 should eliminate the 9% growth estimates as outliers and use the remaining four data points that result in a growth estimate of 3.93% to be utilized in the DCF model."

I would like to define an outlier and how it is determined in this case. An outlier is an observation that falls far outside a sample population mean (average) that leads one to believe it is a faulty observation and should not be utilized. Mr. Manrique schedule JCM-8 utilized six data points, three historical and three projected. I will use the historical retention growth rate for Aqua America covering eleven years.

From this data, I will construct a z-score, which tells us the likelihood of the growth estimates in schedule JCM-8 being consistent with the Aqua America's eleven years of retention growth. Z= (observation-

average from sample)/standard deviation from the sample. Here is the sample of Aqua America's retention growth for eleven years, 4.3%, 4.7%, 5.1%, 5.2%, 4.2%, 4.6%, 4.9%, 3.7%, 3.2%, 2.8%, 3.5%., the average (mean) is 4.2%, standard deviation is 0.80%. To test an outlier, put the observation (growth estimates from JCM-8) in the z formula, per schedule JCM-8, test 5.2%,  $z = (5.2-4.2)/0.8 = 1.25$ . Approximately 95% of all valid observations of a sample will have a z-score between -2 and 2, all or almost all (99.74%) of all valid observations of a sample will have a z-score between -3 and 3. If the z-score is greater than 3 for a given observation, it is an outlier and should be eliminated from the sample since it has a close to a zero percent probability of belonging. So back to schedule JCM-8, growth estimates of 9.7% and 9.1% produce z-scores of 6.88 and 6.11, clearly these z-scores are more than double the 3 which would have qualified as outliers; hence they should be eliminated from schedule JCM-8 as outliers. The remaining four data points in schedule JCM-8 produce a growth estimate of 3.93% to be utilized in the DCF model.

The next five pages is my April 28, 2010 opinion filed in this case. The next page is schedule JCM-8.

The next page is information on outliers and z-scores from the third edition of, "Statistics for Business and Economics", by James T. McClave & P. George Benson, pages 96 through 99.

The following two pages is my resume.

To: Arizona Corporation Commission, Utilities Division, Consumer Services

K.K. Mayes, Chairman

G.Pierce, Commissioner

S.D.Kennedy, Commissioner

P. Newman, Commissioner

B. Stump, Commissioner

Hon. Teena Wolfe

Re: Docket No. W-01303A-09-0343 & No. SW-01303A-09-0343

I am filing an opinion as a resident of Anthem, AZ and a consumer of Arizona-American Water residing at 2407 W. Hazelhurst Ct., Anthem, AZ. 85086.

My comments are in two parts, the first pertaining to the weighted cost of capital in presented in testimony by Mr. Manrique and Mr. Rigsby. With supporting references' attached. Utilizing testimony in evidence, I proposed certain data points be eliminated resulting in an more appropriate lower cost of capital.

Second, I commented on the financial stability of Arizona's parent company American Water Works referencing their 2009 Annual Report. This highlights the stability of the company's financial strength.

Sincerely,

Stephen P. Puhr

Stephen P. Puhr, resident of Anthem, az., 2407 W. Hazelhurst Ct., 623-249-7049,

Docket No. W-01303A-09-0343 & No. SW-01303A-09-0343

I would like to address the weighted cost of capital calculation in the direct testimony of Mr. Juan C. Manrique, ACC staff.

In the Direct testimony of Mr. Juan C. Manrique, page 42, table 3, (line 13-14). The combined short and long term debt has a cost of 4.91%. Which appears to be derived from the schedule presented by the Arizona American Water, Test year ended December 31, 2008, Exhibit schedule D-2, page 1, Witness Mr. Broderick. The 4.91% is derived from capital weighting of the cost of long term debt of 5.47% and short term debt, commercial paper, of 3.41%. The annual report for Arizona-American Water's parent filed on 3/1/2010, page 118, and reports that December 31, 2009, the company's short term debt weighted average interest cost was 0.39%. Further, according to [www.federalreserve.gov/release/cp](http://www.federalreserve.gov/release/cp), on April 21, 2010, the cost of A2/P2 commercial paper, A2/P2 is the rating of American Water Works the parent of Arizona-American Water company, with maturities from 1 day to 60 days averaged 0.33%, with a high of 0.35 for 1 day to the low of 0.29 for 30 days. Hence, Mr. Manrique's average weighted cost of capital needs to utilize the commercial paper rate of 0.33% instead of the 3.41%, from Mr. Manriques Direct testimony, page 14, and line 25. **The replacement would be the difference between (3.41% less 0.33%) multiplied the weighted short term debt of 16.6% to equal 0.51% reduction from the ACC staff's recommendation in Arizona-American Waters required rate of return (ROR) 7.20%. Staffs new recommendation should be 7.20%- 0.51%= 6.69%.**

Now I would like to address Mr. Manrique's testimony as it relates to the formulation of the Beta estimate for Arizona American Water.

While a bigger sample size is preferred to a smaller one when establishing a valid proxy, it is more important to have companies with comparable attributes that drive risks and returns. Morningstar recognizes the importance of comparing stocks and stock mutual funds as large cap (capitalization), mid-cap and small cap and also as growth, value or a blend. An historical study that looked at stocks' standard deviations of returns (risk) from 1926 through 2001, and found small capitalizations standard deviations of returns (risk) was 33.2% compared to large capitalization stocks of 20.2%. This validates the need to compare or utilize the same market capitalization when building a proxy. All utilities are value stocks so they all qualify on that characteristic. Since, Arizona-American Water's parent company is not a small capitalization stock it would be inappropriate to compare it to a group of small capitalization stocks. Hence, the following stocks are recognized as small capitalization stocks by Value Line and should be removed from the sample; American States Water, California Water, Connecticut Water, Middlesex Water and SJW Corp. These stocks were utilized by Mr. Manrique in testimony, schedule JCM-7. Mr. Rigsby's testimony, schedule WAR -7, list the beta's of his proxy stocks, again one must eliminate the small cap stocks. **The result we have a proxy made up of three stocks Aqua America (AWR), Atmos Energy Corp. (ATO) and AGL Resources (AGL), with betas, respectively of .65 for AWR, .75 for AGL and .65 for ATO. The average of these stocks' beta is .683 and this is the most appropriate proxy beta for Arizona American Water.**

Per Mr. Manrique's testimony in schedule JCM-3, historical CAPM and current CAPM used two different risk free assets. In the historical CAPM, an average of 5 yr., 7 yr., & 10yr. treasury rates was adopted as the risk free asset and for the current CAPM the 30 yr. treasury rate was used as the risk free asset. This use of different maturity risk free assets is not appropriate because the different maturities have different amounts of interest rate risk. The longer the maturity, in general terms, the more interest rate risk. An analysis of historic CAPM and current CAPM should use the same risk free asset, especially as it pertains to maturity.

Second, which risk free asset is appropriate? Mr. Manrique's testimony on page 36, line 2, states, "The risk free rate is the rate of return of an investment with zero risk." I agree but for purest, zero risk may be substituted for near zero risk.

The risk free asset should be a treasury security since it has a near zero probability of default. . Investors who buy treasury bonds that mature in 5 years, 10 years, and 30 years face interest rate risk, all else being equal, the longer the treasury maturity the greater the risk. **The 91 day t-bill is considered the safest since it has the lowest amount of bankruptcy risk and interest rate risk, I recommend it be used as the risk free asset. The current 91 day bill rate reported by Value Line was 0.16% on 4/7/2010.**

Back to Mr. Manrique's testimony, schedule JCM-3. The use of the historical CAPM in the calculation of the final cost of equity is not relevant to today's investment environment where readily verifiable investment data is available. I would eliminate that formula from the calculation of cost of equity.

Second, he uses of 10.2% return on the stock market in his historic model and then use a 12.7% for the current expectations defies the markets current expectations. That is I am unaware of any professional publication or professional stock market strategist, that has the opinion that future rates of return on the stock market are going to be higher than the last 94 year average (1926-2008), let alone they will be 20% higher. Presenting the arithmetic mean for the stock market returns is a point that is debated and may be a valid starting point, but build on it that premise, I believe in a better place to start.

**Surrebuttal testimony from William Rigsby, pages 14 and 15 illustrates that the geometric mean better describes actual results than the arithmetic mean; I find his argument compelling and recommend adopting the geometric mean approach. It reflects reality.**

In a July 2009 article, Roger Ibbotson, "Are Bonds Going to Outperform Stocks Over the Long Run? Not Likely." Two data points, first, the S&P 500 returns, geometrically compounded, from January 1926 to March 2009 was 9.44% (page 1). Mr. Ibbotson suggests that earnings growth could approach historic long term growth rate of 5%. Investors' expectations could be 5% plus dividends then at 1.92%, today at 1.84% for the S&P 500. Hence, using a discount cash flow approach, reasonable expectations for the stock market would be 5% + 1.84%= 6.84%. See attachment, Newsweek, 4/19/2010, "The Shape of Things to Come", the articles talk to three economic/finance professor of high regard, Nouriel Roubini, Jeremy Siegel, Laura Tyson and Mohamed El-Erian, CEO of PIMCO(the largest fixed income manager in the world). There is only one who believes a return to average GDP is visible, while the rest see a below average growth rate for some time. Laura Tyson would expect GDP to grow at a 3.5% over five years at best. I bring these up not for precision but directionally, below average GDP growth and hence return on equities is the norm. So the testimony of Mr. Manrique on expected returns for the stock market for the CAPM is, in his historical CAPM = 10.2% and current CAPM = 12.7%. Mr. Rigsby's expected stock market returns (Rm) in his CAPM model, testimony, schedule WAR-7, pages 1 & 2, uses historic stock market returns, geometric of 9.6% and arithmetic 11.7%. **Given the general and expert outlook for subpar to average growth for the foreseeable future, of the given testimony, the estimate for the expected return for the stock market is 9.6% and it should utilized in the CAPM model.**

**Current CAPM would be:**

**CAPM,  $K = R_f + B ( R_m - R_f )$**

$$= .16\% + .683 ( 9.6\% - .16\% )$$

$$= 6.61\%$$

As of 4/1/2010, Value line 30 year U.S. treasury YTM of 4.74% and Morningstar reported on 4/28/2010 that American Water Works' bond maturing in 27 years has a yield to maturity of 6.08%. Back to the Ibbotson article above, page 1, long term treasury bonds have outperformed stocks for the following periods; 1 yr., 5 yr., 10 yr., 20 yr., and 40 yr. ending March 2009. So, the expected return of equity which appears to have a narrow premium over its stock is reasonable especially given the evidence above.

Mr. Manrique used two DCF methods, one constant growth and the other is multi-stage (a two stage was used). I do not see any analytical benefit to use a two stage model, the industry is very mature and returns are regulated, providing a consistent visible growth profile. Looking at Aqua America's retention growth over the past eleven years shows a slight bump higher for four years and slow decline the next seven years, 4.3%, 4.7%, 5.1%, 5.2%, 4.2%, 4.6%, 4.9%, 3.7%, 3.2%, 2.8%, 3.5%= average 4.2%. Mr. Manrique's table of the results calculating the expected dividend growth is found in his testimony, schedule JCM-8. A ten year period ending in 2008 was used to derive historical EPS (earnings per share) growth of 3.3% and DPS (dividend per share) growth rate of 3.1%. With the current economic outlook expected to be below average for years or at best similar to the last ten years that ended 2008, the table's EPS and sustainable growth projections of 9.7% and 9.1% look unreasonable. These estimates are approximately 3x the growth rates of the ten year period that ended 2008. Schedule JCM-8 should eliminate the 9% growth estimates as outliers and use the remaining four data points that result in a growth estimate of 3.93% to be utilized in the DCF model.

**DCF constant growth (dividend yield from Mr. Manrique's schedule JCM-3)**

$$\begin{aligned} \text{DCF} &= 3.50\% + 3.93\% \\ &= 3.50\% + 3.93\% = 7.43\% \end{aligned}$$

**Current CAPM would be:**

$$\begin{aligned} \text{CAPM } K &= R_f + B (R_m - R_f) \\ &= .16\% + .683 (9.6\% - .16\%) \\ &= 6.61\% \end{aligned}$$

***Final Cost of Equity Estimate = CAPM + DCF / 2 = 6.61% + 7.43% / 2 = 7.02%***

| ACC staff capital recommendation | Staff's Estimates   | <u>Steve Puhr Estimates</u> | Difference            |
|----------------------------------|---------------------|-----------------------------|-----------------------|
| Long Tm Debt = 44.6%             | @5.47%=2.44%        | @5.47%=2.44%                | 0%                    |
| Short Tm Debt = 16.6%            | @3.41%=0.57%        | @.33%=0.06%                 | .51%                  |
| Total Cm Equity = 38.9%          | @10.7%=4.17%        | @7.02%=2.73%                | 1.46%                 |
| <b>Overall Rate of Return</b>    | <b><u>=7.2%</u></b> | <b><u>=5.23%</u></b>        | <b><u>=-1.97%</u></b> |

Arizona - American Water Company Cost of Capital Calculation  
 Calculation of Expected Infinite Annual Growth in Dividends  
 Sample Water Utilities

| [A]   | [B]                   |
|---|-----------------------|
| <u>Description</u>                                | <u>g</u>              |
| DPS Growth - Historical <sup>1</sup>              | 3.1%                  |
| DPS Growth - Projected <sup>1</sup>               | 4.1%                  |
| EPS Growth - Historical <sup>1</sup>              | 3.3%                  |
| EPS Growth - Projected <sup>1</sup>               | 9.7%                  |
| Sustainable Growth - Historical <sup>2</sup>      | 5.2%                  |
| <u>Sustainable Growth - Projected<sup>2</sup></u> | <u>9.1%</u>           |
| Average   | <del>5.8%</del> 3.93% |

<sup>1</sup> Schedule JCM-6

<sup>2</sup> Schedule JCM-6

### 3.10 Detecting Outliers

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An *outlier* is an observation that falls far out in the tail of a distribution and may be a faulty observation. Suppose, for example, that you were to sample the weekly sales of fifty salespersons in a company and found that all but one of the sales ranged from \$3,000 to \$5,000. The sales for the single exception were \$750. If the object of the sampling is to learn something about the weekly sales of full-time salespersons, then the \$750 observation is suspect and merits investigation. A further check of company records might indicate that the salesperson worked only a partial week because of sickness, etc. If so, this observation is not from the population of interest to you, and it should be deleted from the sample. If the investigation does not provide a reason for eliminating this observation from the sample, then it should not be deleted. Even though extreme values are improbable, their occurrence is not impossible.

The most obvious test for an outlier is to calculate its z-score (Section 3.9). For example, if the z-score for an observation is 4.2, we know that it lies more than 4 standard deviations away from the sample mean. The Empirical Rule (Table 3.7) tells us that a z-score this large is highly improbable and points to the possibility of a faulty observation.

The numerical value of the z-score reflects the relative standing of the measurement. A large positive z-score implies that the measurement is larger than almost all other measurements, whereas a large negative z-score indicates that the measurement is smaller than almost every other measurement. If a z-score is 0 or near 0, the measurement is located near the middle of the sample or population.

We can be more specific if we know that the frequency distribution of the measurements is mound-shaped. In this case, the following interpretation of the z-scores can be given:

#### **Interpretation of z-Scores for Mound-Shaped Distributions of Data**

1. Approximately 68% of the measurements will have a z-score between  $-1$  and  $1$ .
2. Approximately 95% of the measurements will have a z-score between  $-2$  and  $2$ .
3. All or almost all the measurements will have a z-score between  $-3$  and  $3$ .

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Top-performing Investment Management Professional with twenty-six years of increasingly responsible experience in the financial services industry. Significant experience applying modern portfolio theory, relationship management, attribution analysis, investment manager analysis and global custody search. Strategic assessment of assets allocations and manager selection included the following asset classes: international equity and fixed income, domestic equity (large, mid & small caps), domestic fixed income classes, alternative investments, real estate and other tangible assets.

**PROFESSIONAL EXPERIENCE**

**Consultant, Phoenix, AZ**

**2003-2009**

**Executive Directive/Portfolio Manager**

- Provided strategic assessment for a Native American Community Development & Financial Institution.
- Utilized Ibbotson software to establish asset allocations and investment policy statements for Tribal endowments. Conducted global custody search and investment manager search for over \$500 million in assets. Established Treasury policies and procedures that improved the management of the Tribe's liquidity and investments. Maintained relationships with financial institutions. Advised the Tribes on private equity investments.
- Designed the investment plans for high net worth clients. Implemented investment plans along modern portfolio theory from asset allocation to manager selection. Equity research utilized qualitative and quantitative analytical techniques that produced discounted cash flow price targets.

**WELLS FARGO BANK, Santa Rosa, CA**

**2000 – 2003**

**Vice President/Regional Investment Manager**

As Regional Investment Manager, lead the implementation strategies that increased Investment Management, Trust, and Private Banking sales and profits. Devised and implemented asset allocation and manager selections that met client risk and return parameters for high and ultra high net worth clients.

- Consistently placed among the Top 10 of more than 200 portfolio managers in portfolio returns.
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- One of twenty portfolio managers to be trained as a Certified Investment Management Analyst (CIMA) to address the ultra high net worth clients market. CIMA covered manager search and due diligence, performance measurement and monitoring, designing investment policies and asset allocation strategies.
- Lead the six person Financial Services equity research team. Co-manager of Value Portfolio.

**BRAVURA FINANCIAL SERVICES, INC., Midland, MI**

**1995 – 2000**

**Portfolio Manager**

Managed equity portfolio for **The Dow Chemical Company pension**, returns for \$140 million in assets exceeded benchmark.

- Delivered relative risk/return ratings on the following sectors; financial services, consumer staples, utilities, communication services and transportation for Dow's internal portfolio managers.
- Provided attribution analysis on equity managers responsible for \$6 billion of The Dow Chemical Company pension assets.

**MUNDER CAPITAL MANAGEMENT, Birmingham, MI**

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**Portfolio Manager**

Recommended and managed investments for key corporate and individual clients for firm with more than \$35 billion under management. Responsible for financial equities as a member of the Investment Committee.

- Utilized modern portfolio theory and asset allocation in traditional classes in portfolio construction.
- Personally managed corporate and individual relationships, utilizing Barra Analytic's for performance attribution analysis.
- Stockval and Baseline complemented qualitative analysis to uncover superior risk adjusted returns of sectors and stocks.

**RONEY & COMPANY, Detroit, MI**

**1987 – 1992**

**Financial Services Analyst**

Served as the expert financial services equity analyst for 40+ regional financial institutions. Opinions and reports appeared in *Wall Street Transcripts, American Banker and Barron's*.

- Called the recovery in bank stocks in 1990, yielding a 70.8% return vs. 42.6% for the bank index.
- Outperformed bank index in 20 of 21 recommendations, returning 36.5% vs. 25.6% for bank index.

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Chartered Financial Analyst Candidate Level 1

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**ASSOCIATIONS**

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