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EXHIBITS

W-02113A-07-0551

Part 2 of 2
BARCODE #0000093082

To review Part 1 please see:

BARCODE #0000092584

FENNEMORE CRAIG
Norman D. James (No. 006901)
Jay L. Shapiro (No. 014650)
3003 N. Central Ave.
Suite 2600
Phoenix, Arizona 85012
Attorneys for Chaparral City Water Company

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO. W-02113A-07-0551

SUPPLEMENTAL

REJOINDER TESTIMONY OF

THOMAS J. BOURASSA

(COST OF CAPITAL)

December 23, 2008

(Corrected)

EXHIBIT
A-18
ADMITTED

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I. INTRODUCTION AND SUMMARY OF SUPPLEMENTAL TESTIMONY

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. On behalf of the applicant, Chaparral City Water Company ("Chaparral City" or "the Company").

Q. HAVE YOU PREVIOUSLY FILED TESTIMONY IN THIS CASE?

A. Yes. I previously filed testimony on the appropriate cost of capital and rate of return to be applied to the Company's fair value rate base. My rejoinder testimony on cost of capital was filed on December 4, 2008. I also have filed testimony addressing the Company's rate base, income statement (revenue and operating expenses), required increase in revenue, and rate design and proposed rates and charges for service, and testified before the Arizona Corporation Commission ("Commission") on December 8, 2009, about those aspects of the case.

Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL REJOINDER TESTIMONY?

A. The purpose of this supplemental testimony is to address the late-filed surrebuttal testimony of David C. Parcell ("Parcell Sb."), which the Utilities Division ("Staff") filed on December 3, 2008. This testimony was filed after my rejoinder testimony was completed. Moreover, although Mr. Parcell is adopting portions of the direct testimony of Staff witness Pedro Chaves ("Chaves Dt."), his testimony failed to indicate the specific portions that have been adopted. This problem was ultimately addressed by Staff on December 15, 2008, when Staff filed its corrected version of Mr. Chaves' direct testimony, with the portions that are not being adopted by Mr. Parcell indicated by strike-outs.

As a result of these problems, I could not address Mr. Parcell's surrebuttal testimony in my December 4 rejoinder testimony. Fortunately, the Administrative Law Judge assigned to this case allowed the Company additional time to respond to Staff's new testimony and ordered that the portion of the hearing that deals with the cost of capital be delayed until January 8 and 9, 2009. I will not address the cost of capital testimony filed by the Residential Utility Consumer Office ("RUCO") because it has been addressed in my December 4 rejoinder testimony.

Q. HOW IS YOUR SUPPLEMENTAL REJOINDER TESTIMONY ORGANIZED?

A. In section II, I will provide an updated estimate of the current cost of equity as well as an update of the cost of equity using the methods and inputs used by Staff and approved by the Commission in numerous water and wastewater utility rate cases, including the Company's prior rate case. In section III, I will address the methods and inputs proposed by Mr. Parcell and explain why those methods are improper and in conflict with prior Commission decisions. In section IV, I will briefly respond to the criticisms of Mr. Parcell concerning my cost of equity estimates, which reflect Mr. Parcell's misunderstanding of the methods I used. Finally, in section V, I will address Mr. Parcell's argument that the rate of return adopted in this case should be lower than the current cost of equity, which would be unjust and confiscatory.

Q. HAS THE COMPANY'S POSITION CHANGED BASED ON THE NEW ARGUMENTS PRESENTED BY MR. PARCELL?

A. No. The Company continues to maintain that under the current circumstances, it should be authorized a return on equity of 11.5 percent and an overall return on its fair value rate base ("FVRB") of 9.96 percent, which is equal to the weighted cost of the capital that is financing the Company's rate base.

II. UPDATED ESTIMATES OF THE CURRENT COST OF EQUITY

A. Updated Cost of Equity Estimates

Q. DID YOU PERFORM AN UPDATED ESTIMATE OF THE COST OF EQUITY?

A. Yes. I performed two updates. The first update, which is attached at Tab 1, is again based on the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). I used the same methods and inputs as I used in my prior testimony, with stock prices and other market data for the same six publicly traded water utilities as of December 18, 2008. As shown on Supplemental Rejoinder Schedule D-4.0, the DCF model produces an indicated cost of equity of 11.3 percent and the CAPM produces an indicated cost of equity of 14.0 percent, resulting in an average cost of equity of 12.7 percent. This result is slightly lower than the cost of equity estimate of 13.2 percent presented in my rejoinder testimony. The latter estimate was based on stock prices and other market data for the sample water utilities as of November 21, 2008.

I also prepared an updated estimate of the cost of equity using Staff's methods and inputs. That estimate is attached at Tab 2. I again used stock prices and data as of December 18, 2008 to be consistent. As shown on Schedule TJB-3, the DCF model using Staff's methods and inputs produces an indicated cost of equity of 9.6 percent and the CAPM produces an indicated cost of equity of 18.7 percent, resulting in an average cost of equity of 14.2 percent. This result is lower than the cost of equity estimate of 14.8 percent in my rejoinder testimony.

B. Updated Adjustment for Capital Structure Leverage

Q. DID YOU ALSO UPDATE STAFF'S ADJUSTMENT FOR CAPITAL STRUCTURE LEVERAGE USING THE HAMADA FORMULA?

A. Yes. If the book value of the equity in the sample utilities' capital structures is

used, the adjustment would be 280 basis points, as shown on Schedule TJB-13, resulting in a cost of equity of 11.4 percent (14.2 percent – 2.80 percent). As I have previously explained, however, the correct way to implement this formula is to use the **market** value of the equity in the sample utilities' capital structures.[1] If the market value of the equity in the sample utilities' capital structures is used, the adjustment would be 50 basis points, as shown on Schedule TJB-16, resulting in a cost of equity of 13.7 percent based on Staff's method (14.2 percent – 0.50 percent).

Q. DOES THE COMPANY STILL MAINTAIN THAT NO ADJUSTMENT FOR LEVERAGE IS APPROPRIATE IN THIS CASE?

A. Yes. I have previously explained why such an adjustment is inappropriate in this case, and will not repeat that testimony. (Bourassa Rj. at 13-15; Bourassa Rb. at 28-35.) I have updated this adjustment to be consistent with Staff's approach, not because I believe it is appropriate for a relatively small water utility whose capital structure contains nearly 25 percent debt. (*See, e.g.,* Arizona Water Company, Decision No. 68302 (Nov. 14, 2005) (no adjustment for financial risk appropriate when the utility's capital structure contained 73 percent equity).)

C. Updated Inflation Estimate

Q. DID YOU ALSO UPDATE THE CURRENT RATE OF INFLATION SO THAT IT IS CONSISTENT WITH YOUR UPDATED ESTIMATES OF THE COST OF EQUITY?

A. Yes. I used the same method discussed in my prior testimony (*see* Bourassa Rj. at 17) to be consistent with Staff's view that spot yields should be used in accordance

[1] *See* Roger A. Morin. *New Regulatory Finance* 221-25 (Public Utility Reports 2006); Tim Koller, Marc Goedhart and David Wessels, *Valuation: Measuring and Managing the Value of Companies* 312-13 (John Wiley & Sons, Inc. 2005); Shannon, P. Pratt, *Cost of Capital – Estimations and Applications*, 83-85 (John Wiley & Sons 2002).

with the efficient market hypothesis. (*See* Chaves Dt. at 37.) The yields at December 18, 2008, are:

	Constant Maturity	TIPS	Expected Inflation
5-Year	1.26%	1.37%	(.11)%
7-Year	1.59%	1.60%	(0.01)%
10-year	2.08%	1.85%	0.23%
Average	1.64%	1.61%	0.03%

This result is greater than my previous estimates of inflation, which were negative numbers. Nevertheless, inflation is currently about 3 basis points, and remains essentially non-existent, as I previously testified.

If 20-year Treasuries are used instead, the indicated inflation is currently 87 basis points. In that case, the current yield on a 20-year Treasury should be used in the CAPM, producing a higher cost of equity. However, the use of long-term treasuries is inconsistent with Staff's view that most investors hold stocks for an intermediate period of time. (*See* Surrebuttal Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616 (May 5, 2005), Exh. S-4 at 11.)

Q. DOES THE COMPANY CONTINUE TO MAINTAIN THAT AN ADJUSTMENT FOR INFLATION IS INAPPROPRIATE?

A. Yes. I have explained the basis for the Company's position in my prior testimony, and Staff has not responded to my testimony. (Bourassa Rb. at 14-28; Bourassa Rj. at 7-8.) Consequently, there is no need to repeat that testimony.

Q. STAFF HAS NOT UPDATED ITS COST OF EQUITY ESTIMATES. WHY HAVE YOU DONE SO IN THIS CASE?

A. For the reasons stated in Staff's testimony in this case. The use of stale or outdated information is not representative of current market conditions, and therefore fails to reflect the current cost of equity. This is why, for example, Staff uses the current

market stock prices (the "spot" stock price) and spot yields on U.S. Treasury securities in implementing the DCF and CAPM models. (Chaves Dt. at 15-16, 28.) It is also why Staff has used spot yields on Treasuries to estimate the additional return required by investors to account for inflation. (Chaves Dt. at 37.) The problem is that Staff has relied on spot data from August 6, 2008, which is now outdated and cannot be used. As Staff has explained, "the best forecast of tomorrow's yield is simply today's yield." (Chaves Dt. at 43.) Relying on data from last summer would be improper and conflict with prior Commission decisions that have repeatedly affirmed Staff's inputs into its models, particularly given the changes that have occurred since that time in stock prices, interest rates and other key inputs.

III. PROBLEMS RELATING TO MR. PARCELL'S REJECTION OF STAFF'S INPUTS

Q. PLEASE SUMMARIZE YOUR RESPONSE TO MR. PARCELL'S SURREBUTTAL TESTIMONY.

A. Mr. Parcell has adopted virtually all of Mr. Chaves' testimony as his own testimony. Consequently, much of my rebuttal testimony, filed October 31, 2008, which addressed the direct testimony of Mr. Chaves, as well as the direct testimony of Mr. Fox, now applies to Mr. Parcell's recommendation. The principal problems that appear in Mr. Parcell's testimony, in summary, are:

- Mr. Parcell has relied on data from the June to August 2008 period in his cost of equity estimates, which data is now stale and outdated, rendering his estimates invalid.
- Mr. Parcell does not use spot stock prices and spot yields on Treasury securities, which is contrary to numerous Commission decisions and again results in outdated cost of equity estimates.

- Mr. Parcell's CAPM estimate is apparently subjective, and cannot be verified or replicated due to the failure to disclose the inputs he actually used in his testimony and work papers.
- Mr. Parcell has eliminated Staff's estimate of the current market risk premium from his CAPM estimate, and apparently has substituted a second historic market risk premium, which double-counts historic market risk while ignoring current market risk.
- Mr. Parcell's use of a geometric mean to estimate the historic market risk premium is backward-looking, contrary to established finance theory, and should not be used to estimate the cost of capital.
- Mr. Parcell's use of the historic total return on Treasuries rather than their historic income return improperly injects additional risk into the CAPM estimate, which is inconsistent with using Treasuries as a riskless asset.

Ultimately, the methods selected by Mr. Parcell are result driven and intended to depress the cost of equity, as shown by the fact that his 10.0 percent cost of equity is 180 basis points below Staff's 11.8 percent cost of equity estimate (*see* Chaves Dt. at 34 and Sch. PMC-3.), even though Mr. Parcell has adopted most of Staff's inputs and data.

A. DCF Model Problems

Q. HOW SIGNIFICANT ARE THE DIFFERENCES BETWEEN MR. PARCELL'S DCF METHODOLOGY AND THE METHODOLOGY THAT HAS BEEN USED BY STAFF AND APPROVED BY THE COMMISSION?

A. The differences between Mr. Parcell and Staff, and between Mr. Parcell and prior Commission decisions, are negligible because he appears to have accepted Staff's methods in this case. (*See* Parcell Sb. at 5-8.) The version of Mr. Chaves' direct

testimony filed by Staff on December 15 does not contain any deletions from pages 12 through 26, which contains Staff's DCF analysis. In my rebuttal testimony, I have explained that Staff's over-reliance on historic earnings and dividend growth rates effectively double counts the past and produce results that are below the cost of debt. (Bourassa Rb. at 36-37 and Exh. 5.) Given Mr. Parcell's adoption of Staff's DCF estimates, that testimony remains valid. However, certain suggestions made by Mr. Parcell are inconsistent with prior Commission decisions. I will briefly discuss these inconsistencies.

Q. WHAT IS THE FIRST INCONSISTENCY?

A. First, Mr. Parcell does not use spot stock prices in calculating the dividend yield. Mr. Parcell indicates on page 6 of his testimony that he normally uses a three-month average stock price in calculating the dividend yield, and that in this case he calculated dividend yields using the average stock price from June to August, 2008. However, the result was very similar to Staff's use of a spot stock price.

Q. HASN'T THE COMMISSION REJECTED THE USE OF AVERAGE STOCK PRICES IN CALCULATING THE DIVIDEND YIELD?

A. Yes. In fact, in Chaparral City's prior rate case, Staff criticized Chaparral City's cost of capital witness, Dr. Thomas Zepp, for not using spot stock prices and other spot market data in estimating the cost of capital. Staff's witness in that case stated:

> By using historical prices to calculate the dividend yield in the DCF model, Dr. Zepp disregards the efficient market hypothesis. In order to be consistent with the efficient market hypothesis (a key principle of modern corporate finance), the most recent stock price is the only appropriate price to use when calculating the dividend yield of the DCF model.[2]

[2] Direct Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616 (March 22, 2005), Exh. S-3 at 41.

In its decision, the Commission adopted Staff's methodology and cost of equity estimate. (Decision No. 68176 (Sept. 30, 2005) at 25-26.) The Arizona Court of Appeals subsequently affirmed the Commission's adoption of Staff's methodology on appeal, as discussed in the testimony of Staff witness Gordon Fox.

Q. IF THE RESULT PRODUCED BY USING AN HISTORIC AVERAGE IS SIMILAR TO USING SPOT PRICES, WHY IS THERE A PROBLEM?

A. The problem is that Mr. Chaves used the spot stock prices of the six sample water utilities at the close of the market on August 6, 2008. (Chaves Dt. at 15.) Mr. Parcell calculated a three-month average stock price using prices for the period from June through August 2008. (Parcell Sb. at 6.) Obviously, this data is stale and cannot be used. I have used recent stock prices in my updated DCF estimate, and the dividend yield has increased, resulting in a higher cost of capital estimate.

Q. ARE THERE ANY OTHER DIFFERENCES BETWEEN MR. PARCELL'S DCF METHODOLOGY AND THE METHODOLOGY USED BY STAFF?

A. Yes, there are. The most significant is Mr. Parcell's view of Staff's multi-stage DCF analysis, discussed on pages 7 and 8 of his testimony. Mr. Parcell discusses the manner in which he prepares cost of capital testimony for interstate natural gas pipelines before the Federal Energy Regulatory Commission ("FERC"). He notes that the FERC's preferred cost of capital methodology uses a two-stage DCF model and goes on to explain that in testimony before the agency, he prefers to use projections of GDP growth rather than historic GDP growth, which is the method used by Staff. Although Mr. Parcell adopts Staff's multi-stage DCF estimate, he suggests that Staff's use of historic GDP growth may over-state the result produced by this model.

Q. WHAT IS THE PROBLEM WITH USING THE FERC METHODOLOGY?

A. The problem is that in two recent water utility rate cases, including Chaparral

City's prior rate case, the Commission rejected use of the FERC two-stage DCF model, adopting instead Staff's two-stage model and that model's inputs, including historic GDP growth.[3] Ironically, in both of those cases, the use of the FERC methodology produced a higher cost of equity estimate than the methods used by Staff, which was presumably why the FERC's method was not adopted.

B. <u>Problems with CAPM Estimates</u>

Q. LET'S TURN TO STAFF'S CAPM COST OF EQUITY ESTIMATES. DOES MR. PARCELL ADOPT THOSE ESTIMATES?

A. No, although it is unclear what portions of Staff's methods and inputs he actually adopts. Clearly, however, there are significant differences. Mr. Parcell proposes a cost of equity of 10.75 percent based on the CAPM. Staff's cost of equity based on the CAPM is 14.3 percent, based on inputs from August. (Chaves Dt. at 31.) I have attempted to replicate Mr. Parcell's CAPM estimate, but could not do so, suggesting that his calculation contains errors.

Q. WHAT IS UNCLEAR ABOUT MR. PARCELL'S TESTIMONY?

A. In his surrebuttal testimony, Mr. Parcell quarrels with certain of the CAPM inputs used by Staff and approved by the Commission in prior water and wastewater utility rate cases. However, in the version of Mr. Chaves' direct testimony filed by Staff on December 15, Mr. Parcell has adopted virtually all of Mr. Chaves' testimony concerning Staff's CAPM estimates except Staff's calculation of the current market risk premium CAPM estimate. (Chaves Revised Dt. at 26-31.) Thus, while Mr. Parcell apparently prefers to use different inputs, such as three-month average Treasury yields (which conflicts with the Commission's consistent

[3] Decision No. 68176 at 23, 25-26; *Arizona Water Co. (Western Group)*, Decision No. 68302 (Nov. 14, 2005) at 31, 37.

approval of spot yields), it appears that he ultimately agrees with the bulk of Staff's CAPM methodology.

Consequently, it is unclear how he derived a much lower CAPM estimate than did Mr. Chaves. As I stated, Mr. Chaves' estimate was 14.3 percent while Mr. Parcell's estimate is only 10.75 percent. That is a difference of 355 basis points. Because Mr. Parcell has accepted Mr. Chaves' DCF estimate, the reason for the difference between Staff's recommended 11.8 percent cost of equity and Mr. Parcell's recommended 10.0 percent cost of equity estimate is Mr. Parcell's CAPM estimate. Given the current volatility of the financial markets, Mr. Parcell's 180 basis-point downward adjustment to Staff's recommendation is quite remarkable and, as I stated, appears result-driven.

Q. WHAT ASPECTS OF STAFF'S CAPM ESTIMATES HAS MR. PARCELL REJECTED?

A. Staff performs two estimates of the cost of equity using the CAPM, one of which uses an historical market risk premium (MRP) and the other using a current MRP. Both estimates use the same beta (ß) which represents the riskiness of the investment relative to the market as a whole. Staff's beta is equal to the average beta of the six sample water utilities. (Chaves Dt. at 28-29.)

For the risk-free rate of interest in its historical MRP CAPM estimate, Staff uses the average spot yields on three intermediate-term Treasuries. For the risk-free rate of interest in its current MRP CAPM estimate, Staff uses the spot yield on long-term Treasuries. The date Staff selects for these spot yields corresponds to the dates selected for the sample companies' stock spot market prices and other financial market inputs. (Chaves Dt. at 28.)

Mr. Parcell has accepted this methodology. He has also accepted Staff's method of calculating the historical MRP, as shown by the revised version of

Mr. Chaves' direct testimony filed on December 15. (Chaves Revised Dt. at 29-30.) Mr. Parcell also accepts the historical MRP published in the *SBBI 2008 Yearbook*, which is 7.5 percent. (Chaves Revised Dt. at 30.) Consequently, based on Staff's December 15 filing, Mr. Parcell has failed to adopt only one aspect of Mr. Chaves' CAPM estimates: the estimate of the current MRP. (Chaves Revised Dt. at 30-31.)

Q. HAS THE METHOD USED BY STAFF TO CALCULATE THE CURRENT MRP BEEN CONSISTENTLY ADOPTED BY THE COMMISSION IN WATER AND WASTEWATER UTILITY RATE CASES?

A. Yes. In fact, in prior rate cases, including Chaparral City's prior rate case, the Commission has adopted Staff's method despite the fact that it is unstable and, at that time, reduced Staff's cost of equity estimate and the return on equity ultimately authorized by the Commission. I quoted from two recent Commission decisions in my rejoinder testimony, where the Commission relied on the reduction in the current MRP to offset increases in interest rates and the betas of the water utilities in the sample group. (Bourassa Rj. at 8, 11-12.) I will not repeat that testimony again. However, I am attaching at Tab 3 an excerpt from Staff's Closing Brief in the Black Mountain Sewer Corporation rate case, Docket No. SW-02361A-05-0657, in which Staff argued that the Commission "has repeatedly affirmed Staff's choice of inputs for both DCF and CAPM models" (citing numerous decisions), and further argued concerning Staff's current MRP:

> Staff also believes that the record in this case does not support a conclusion that its current MRP is unstable. The MRP moves with the market which can be volatile. Market volatility does not make the CAPM model unstable or subject to manipulation.

Notably, in that case, Staff argued that the recent increase in interest rates was offset by a substantial decline in the current MRP, and the Commission agreed in Decision No. 69164.

Q. IS IT IMPORTANT TO CONSIDER THE CURRENT MRP IN ESTIMATING THE COST OF EQUITY?

A. Yes. As explained in Mr. Chaves' testimony, "[r]isk, as it relates to an investment, is generally recognized as the variability or uncertainty of the returns on the investment." (Chaves Dt. at 10.) In other words, the more volatile the return on an investment, the greater the risk and, other things being equal, the higher the return required by investors. Mr. Chaves also explains that "market risk is the only risk that affects the cost of equity," and that market risk "is related to the economy-wide perils that affect all businesses such as inflation, interest rates, and general business cycles." (Chaves Dt. at 10.) Finally, in describing the CAPM, Mr. Chaves explains:

> The CAPM model describes the relationship between a security's investment risk and its market rate of return. This relationship identifies the expected rate of return which investors expect a security to earn so that its market return is comparable with the market returns earned by securities of similar risk.

(Chaves Dt. at 26-27.) Mr. Parcell has adopted this testimony.

At present, the financial markets have been impacted by a downturn in the business cycle and other, related economic events, which have increased the general market risk associated with investment. This is evidenced by the fact that interest rates on investment-grade commercial bonds have been hovering between 8 and 9 percent during the past several months. American Water Works, the largest investor owned water and wastewater utility in the U.S., recently issued $75 million of senior debt with an interest rate of 10 percent. Clearly, the cost of capital is higher at present than it has been in the past several years.

Given these circumstances, current market risk must be considered in estimating the cost of equity. The version of the CAPM that utilizes an estimate of the current MRP provides an unbiased means for doing so. If only historic market risk is considered, the current cost of equity for Chaparral City would be severely understated, violating the comparable earnings and attraction of capital standards.

Q. BASED ON THE USE OF STAFF'S CAPM METHODOLOGY IN PRIOR RATE CASES, MR. PARCELL'S ELEVENTH-HOUR SUBSTITUTION AS STAFF'S COST OF CAPITAL WITNESS AND HIS REJECTION OF MR. CHAVES' CAPM ESTIMATE WOULD APPEAR TO BE ARBITRARY AND RESULT-DRIVEN. DO YOU AGREE?

A. Yes. In previous water and wastewater utility rate cases, Staff has consistently taken the position that its current MRP is a reasonable and appropriate method of accounting for current market volatility in estimating the cost of equity. In recent cases, including cases for Chaparral City, Arizona Water Company, and Black Mountain Sewer Corporation, Staff's current MRP has been low, reflecting a lack of volatility in the market, which in turn justified a lower cost of equity. Now that market volatility has increased substantially, indicating that the cost of equity has increased, Staff has brought in a consultant to criticize the method used by Staff and adopted by the Commission in prior rate cases. It is apparent that Staff's goal is to drive down the cost of equity. This is rather ironic given the arguments made by Staff in its Closing Brief in the Black Mountain Sewer Corporation rate case that its "inputs are pre-selected as specified from a balanced methodology" and that it "does not use results to determine inputs." (*See* Tab 3.)

Q. HOWEVER, YOU HAVE CRITICIZED STAFF'S METHOD OF ESTIMATING THE CURRENT MRP.

A. That is true. But my criticisms have related to the manner in which Staff normally

estimates the current MRP, which is quite volatile and unstable. I estimated the current MRP using more data points, which eliminates the sharp increases and decreases in the market risk premium that result from Staff's method. The point is that current market conditions need to be considered. Otherwise, the cost of equity is being estimated with historic data that fails to account for current conditions and current capital costs.

Q. ON WHAT BASIS DOES MR. PARCELL REJECT STAFF'S METHOD OF ESTIMATING THE CURRENT MRP?

A. Mr. Parcell makes two arguments, neither of which has any validity. First, he asserts that it is not appropriate to determine utility rates based upon an anticipated increase in stock prices for a group of largely unregulated firms. (Parcell Sb. at 11.) This argument is really an attack on the CAPM, which Mr. Parcell admits that he uses in estimating the cost of equity in utility rate cases. The inputs used in the CAPM are market-based, and are not derived from data for regulated utilities. For example, Mr. Parcell testifies that he "fully support[s] the use of Value Line betas." (Parcell Sb. at 8.) The betas of the six sample water utilities, as reported by Value Line, are derived from a regression analysis between weekly percent changes in the price of a stock and weekly percent changes in the New York Stock Exchange average over a period of five years. The companies whose stock is traded on the New York Stock Exchange are "a group of largely unregulated firms." Yet those companies' stock is used to determine the relative riskiness of the stocks of the water utility sample group.

Second, Mr. Parcell claims that Staff's method is inappropriate because there was a significant decline of stock prices in 2008, resulting in greater appreciation potential and a higher current MRP. (Parcell Sb. at 11.) That argument is erroneous for several reasons. First of all, the current MRP estimated

by Mr. Chaves, 12.6 percent, in his direct testimony was not particularly high. By comparison, Staff's cost of capital witness estimated a current MRP of 13.1 percent in mid-2003.[4] Moreover, Mr. Parcell's reference to the historic (1926-2007) average total returns for the S&P 500 is misleading. While the 82-year average may be 12.3 percent, there is considerable variability from year to year, and that variability is what is captured in the current MRP. To illustrate this point, I have attached at Tab 4 a copy of a table showing the annual total returns published in the *SBBI Valuation Edition 2008 Yearbook.* Further, the 12.3 percent Mr. Parcell refers to is for large company stocks.[5] The water utility company sample is made up of mostly small company stocks (micro-cap, low-cap, and mid-cap). In fact, only Aqua America would be considered a large company stock. The 82-year average return as published in the SBBI Valuation Edition 2008 Yearbook for mid-cap stocks, low-cap stocks, and micro-cap stocks are 14.0 percent, 15.5 percent, and 18.5 percent, respectively. Chaparral City would be considered a small micro-cap stock. To put this into perspective, my current cost of equity analysis indicates a 12.7 percent return and the Company proposed cost of equity is 11.5 percent – both significantly below historical returns of comparably sized companies.

Q. WHAT DOES MR. PARCELL PROPOSE TO USE AS A SUBSTITUTE FOR STAFF'S CURRENT MRP ESTIMATE?

A. His testimony is not clear on this point. As I mentioned previously, Mr. Parcell has not provided his actual calculation using the CAPM in his testimony, nor are there

[4] Direct Testimony of Joel Reiker, Docket No. W-01445A-02-0619 (July 8, 2003) at Sch. JMR-7. In that case, which involved Arizona Water Company's Eastern Group, the risk-free rate was relatively low, 3.3 percent, and the average beta of the sample water utilities was only 0.59, producing a low cost of equity. The Commission accepted Staff's CAPM estimate. Decision No. 66849 (March 19, 2004) at 22-23. The Commission specifically stated that "Staff's CAPM model properly takes into account risk for purposes of estimating equity costs." (*Id.* at 22.)

[5] The S&P 500 index is considered a large company stock market index.

any schedules attached to his testimony that shed light on precisely what he proposes.

Q. DID CHAPARRAL CITY OBTAIN MR. PARCELL'S WORKPAPERS SUPPORTING HIS RECOMMENDATION?

A. Yes. However, Mr. Parcell's workpapers did not contain any information indicating how he derived his CAPM result of 10.75 percent. It appears, however, that Mr. Parcell reduced Staff's historical MRP by using a geometric mean (average) of historic returns. The period of time used in that calculation is not disclosed. I explained in my rebuttal and rejoinder testimony why the use of a geometric mean to estimate the cost of capital is theoretically improper. (Bourassa Rb. at 40-41; Bourassa Rj. at 24-26.) In addition, I attached to my rejoinder testimony, at Tab 3, an excerpt from Dr. Roger Morin's text on regulatory finance that discusses this issue in considerable detail.

Q. WHAT JUSTIFICATION DOES MR. PARCELL PROVIDE FOR USING A GEOMETRIC AVERAGE?

A. Mr. Parcell states on page 10 of his surrebuttal testimony that geometric averages are "relevant" because investors are regularly provided with returns by mutual funds and by investment services such as Value Line that are calculated using a geometric mean. This argument is specious for two reasons.

First, as I explained in my rejoinder testimony, a geometric average is backward-looking rather than forward-looking. It is appropriate to use a geometric average to calculate the <u>past</u> performance of an investment, which is undoubtedly why reports on the past performance of mutual funds and other securities contain this information. (Bourassa Rj. at 26.) However, as explained in Mr. Chaves' testimony, "[t]he cost of equity represents investors' *expected* returns" (Chaves Dt. at 9), i.e. the return that will be earned in the future. As discussed in my rejoinder

testimony, the arithmetic average provides an unbiased estimate of the expected future return.

Second, Mr. Parcell is effectively arguing that if an investor has information available and is not sophisticated enough to use that information correctly, such information should nevertheless be used to determine the cost of equity in a utility's rate case. To illustrate this point, consider the fact that Value Line also reports projected returns on equity for the larger water utilities in the sample group, American States Water, Aqua America and California Water. For the period 2011 through 2013, Value Line currently projects the following returns on equity:

American States Water	13.5%
Aqua America	11.5%
California Water	11.5%
Average	12.2%

Following Mr. Parcell's logic, this information is widely available and would be considered by investors in evaluating an investment in those utilities. Therefore, the Commission should consider Value Line's projected returns in this case.

Of course, this would be inappropriate. Chaparral City's rate base is the fair value of its utility plant and property, and not the historic or original cost of such property. Therefore, as I explained in my rebuttal testimony, it is appropriate to use market-based finance models to estimate the cost of equity. (Bourassa Rb. at 11-14.) Moreover, the Commission has consistently rejected equity cost estimation methods that rely on accounting-based equity returns. (Bourassa Rb. at 12-13.) Nevertheless, if Mr. Parcell's argument were accepted, then accounting-based equity returns as well as a variety of other irrelevant and inappropriate financial information would have to be considered by the Commission, along with Mr. Parcell's undisclosed geometric average, simply because an investor may have access to this information and may choose to improperly consider it.

Q. WHAT IS THE EFFECT OF USING A GEOMETRIC AVERAGE TO CALCULATE THE HISTORICAL MRP?

A. As Mr. Parcell acknowledges, it lowers the cost of equity estimate produced by the CAPM, which is undoubtedly a factor that has been considered by Mr. Parcell in using that approach.

Q. DOES MR. PARCELL DISAGREE WITH ANY OTHER ASPECTS OF STAFF'S CAPM METHODOLOGY?

A. Yes. He also criticizes Staff for using income returns on bonds in implementing the CAPM, and notes that it is his normal practice to consider total returns on bonds in his risk premium calculations. This also reduces that cost of equity estimate. (Parcell Sb. at 10.)

Q. IS MR. PARCELL'S METHOD CORRECT?

A. No. Like his use of a geometric mean to calculate the historical MRP, the use of total returns on bonds is theoretically incorrect. The *SBBI Valuation Edition 2008 Yearbook*, at pages 75-77 (attached at Tab 4), provides a helpful discussion of this issue. In short, a Treasury security is used in the CAPM as the proxy for the risk-free rate of interest. (Chaves Dt. at 28.) The income return is the portion of the total return that results from a periodic cash flow, i.e. the bond coupon payment. The income return provides an unbiased estimate of the riskless rate of return because an investor can hold the Treasury security to maturity and be entitled to the income return with no capital loss (or capital gain). Because Treasury securities are issued and supported by the Federal government, they are considered to have no default risk. (Chaves Dt. at 28.) If the total return on a Treasury security is used instead, an additional element of risk is injected into the CAPM estimate, which is inconsistent with treating the Treasury security as a riskless asset.

C. Capital Structure and Rate of Return

Q. WHAT IS MR. PARCELL'S RATE OF RETURN?

A. He has adopted Staff's rate of return, 8.8 percent. This is not surprising since it appears that his methods have been designed to reach the same result as Mr. Chaves' result.

Q. DOES MR. PARCELL ADOPT STAFF'S ADJUSTMENT BASED ON CAPITAL STRUCTURE RISK?

A. No, presumably because his cost of equity estimate is 10 percent, while Staff's estimate is 11.8 percent. In other words, Mr. Parcell's models produce the same result as Staff's models *with* a 180 basis point downward adjustment for financial risk. However, Mr. Parcell does contend that because Chaparral City's capital structure contains 75 percent equity, the risk differential should be realized. (Parcell Dt. at 13.) I have previously explained why a downward adjustment for financial risk is inappropriate for Chaparral City and would conflict with prior Commission decisions. (Bourassa Rb. at 32-38; Bourassa Rj. at 14-15.)

Q. I AM CONFUSED. IS MR. PARCELL RECOMMENDING AN ADJUSTMENT FOR FINANCIAL RISK OR NOT?

A. His testimony is very confusing on this point. It appears that the answer is no, however, since he has not proposed any downward adjustment and has specifically rejected Mr. Chaves' testimony on this issue. (*See* Chaves' Revised Dt. at 34-35.) But he wishes to have this argument as a fallback, in case the Commission follows its prior decisions and consider impact of current market risk on investors' expected returns.

Q. IF A DOWNWARD ADJUSTMENT FOR FINANCIAL RISK WERE CONSIDERED, WHAT WOULD IT BE BASED ON MR. PARCELL'S TESTIMONY?

A. Unfortunately, it cannot be computed because, as previously explained, Mr. Parcell has not disclosed how he calculated his 10.75 percent CAPM estimate. The Commission normally relies on the formula developed by Professor Hamada to determine the financial risk adjustment. As I have explained, this formula is derived from the CAPM, and provides an estimate of the portion of a security's risk, as estimated by its beta, attributable to its financial structure. (*See* Bourassa Rb. at 28-29; Bourassa Rj. at 13-14.) Using Staff's CAPM estimate, as set forth in Mr. Chaves' testimony, the downward adjustment would be no more than 60 basis points. (*See* Bourassa Rb. at 35.) That estimate, however, is tied to Mr. Chaves' CAPM estimate, which is 14.3 percent, as shown on Schedule PMC-3. Mr. Parcell's CAPM estimate is only 10.75 percent. Therefore, the downward adjustment would be much less, probably 10 or 15 basis points. It certainly would not justify a reduction in the cost of equity from 11.8 percent (Mr. Chaves' estimate) to only 10.0 percent.

Q. DOES MR. PARCELL ADOPT STAFF'S ADJUSTMENT FOR INFLATION, BASED ON SPOT TREASURY YIELDS?

A. Yes. He has adopted the portion of Mr. Chaves' testimony that addresses how the current rate of inflation should be determined, based on the spot yields of Treasury securities. (*See* Chaves' Revised Dt. at 36-37.) Unfortunately, Mr. Parcell failed to provide an updated estimate of the rate of inflation and instead has accepted Mr. Chaves' estimate, which is based on spot yields as of August 6, 2008. That estimate is, obviously, outdated and cannot be used.

IV. RESPONSE TO MR. PARCELL'S CRITICISMS

Q. PLEASE RESPOND TO MR. PARCELL'S CRITICISM (PAGE 14 AND 15) THAT YOU USED STOCK PRICE GROWTH AS THE GROWTH COMPONENT IN YOUR DCF ANALYSIS.

A. Mr. Parcell is incorrect. I did not use stock price growth as the growth component in my estimation of growth. Nor did I use stock price growth as even one of the components in my estimation of growth. My growth estimations were based on analysts' estimates of earnings per share ("EPS") growth, which not only take into consideration historical information on a company, but also reflect more recent information. (Bourassa Dt. at 30.) Further, it has been shown that of the four methods of estimating the growth component of the DCF model, analysts' forecasts of earnings performed the best, while historic earnings and historic dividends growth were third and fourth, respectively. (Bourassa Rb. at 36.)

I referred to historical capital appreciation (stock price growth), book growth, EPS growth, and dividends per share ("DPS") growth in my prior testimony to emphasize four very important points regarding why caution must be used in estimating the growth rate. First, the stock price and dividend yield component may be unduly influenced by structural changes in the industry such as mergers and acquisitions, which influence investor expectations. Second, one of the basic assumptions of the traditional DCF model is that dividends, earnings, book value, and stock price all grow at the same rate. This has not been historically true. Third, the application of the DCF model produces estimates of the cost of equity that are consistent with investor expectations only when the market price of a stock and the stock's book value are approximately the same. And, fourth, the assumption of a constant growth rate may be unrealistic, and there

may be difficulty in finding an adequate proxy for the growth rate. (Bourassa Dt at 27-28.)

I also contrasted the average of the analysts' growth estimates, which is used as the basis of my DCF growth, to 5- and 10-year historical capital appreciation (stock price growth). (Bourassa Dt. at 30.) Analysts' estimates of growth were shown to be significantly less than capital appreciation. *Id.* I did this as a reasonableness check. Again, I did not use stock price growth as a basis for my growth estimate. More importantly, the data I presented on Schedules D-4.3 and D-4.4 clearly demonstrated that stock price, book value, dividends, and earnings have grown at very different rates.

Q. MR. PARCELL ALSO CRITICIZES YOU FOR USING DATA FROM 2007. IS THAT ACCURATE?

A. No. It appears that Mr. Parcell has not reviewed my testimony. Certainly my direct testimony relied on data from 2007 – Chaparral City's rate application was filed in September 2007. In my rebuttal and rejoinder testimony, as well as this testimony, I prepared updated estimates of the cost of equity based on current information and data. Mr. Parcell, in contrast, has either adopted Staff's estimates, which relied on data from last August, or has relied on data from last June to August. This data is now outdated and stale. The reality is that the cost of equity has increased, as evidenced by current Baa bond yields and the results produced by the CAPM. Mr. Parcell improperly ignores this current information.

Q. PLEASE COMMENT ON MR. PARCELL'S CRITICISM (PAGE 14) ON YOUR USE OF SPOT PRICES IN COMPUTING YOUR DIVIDEND YIELD?

A. Mr. Parcell is inconsistent. He is critical of Staff for its use of spot prices, but adopts spot prices because they are similar to his three-month average (June

through August 2008). Mr. Parcell also adopts Mr. Chaves' testimony supporting the use of the current stock price, as opposed to an historical average of stock prices, because it is consistent with finance theory i.e., the efficient market hypothesis ("EMH"). (*See* Chaves Dt. at 16.) According to the EMH, the current stock price reflects information investors use to form expectations of future returns. As Mr. Chaves states, "use of an historical average of stock prices illogically discounts the most recent information in favor of less recent information. The latter is stale and is representative of underlying conditions which may have changed." *Id.* Mr. Parcell's criticism conflicts with his adopted testimony.

Mr. Parcell is also critical of my use of spot prices on October 2, 2008, because this particular date was, in Mr. Parcell's opinion, in the middle of market volatility. (Parcell Sb. at 14.) However, the market was volatile when Mr. Chaves conducted his cost of capital analysis (August 6, 2008), and it was volatile during the three-month period Mr. Parcell used as the basis for his average. As I discussed earlier, investment risk is a function of market volatility. Regardless of market volatility, if you agree that the current stock price reflects all information investors use to form expectations of future returns, then all that should matter is whether I used a spot price that is current as practically possible and is consistent with other current information used in my cost of capital analysis. This approach is used by Staff, and adopted by the Commission in numerous rate cases, including Chaparral City's prior case.

I imagine Mr. Parcell would continue to make the same criticism of my rejoinder DCF update as well as my supplemental rejoinder DCF update, which used spot prices on November 21, 2008 and December 18, 2008, respectively. Instead, Mr. Parcell would rather rely on much older and stale information from last summer. This clearly conflicts with the Commission's policy of using spot

prices and yields to reflect current market data, and appears designed to depress the cost of equity in this case.

V. MR. PARCELL'S ARGUMENTS AGAINST THE USE OF CURRENT CAPITAL COSTS TO SET RATES

Q. IN THE FINAL SECTION OF HIS TESTIMONY (PAGES 16 TO 19), MR. PARCELL ARGUES THAT THE COMMISSION SHOULD IGNORE THE IMPACT OF THE CURRENT FINANCIAL MARKETS AND AUTHORIZE A COST OF CAPITAL THAT IS BELOW MARKET COSTS. DO YOU AGREE WITH HIS ARGUMENT?

A. No. This testimony is simply a red herring and, if followed, would violate Chaparral City's right to a fair return. On page 3 of his testimony, Mr. Parcell quotes from the U.S. Supreme Court decision *Bluefield Waterworks & Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923), which is generally regarded as establishing the test for determining whether a rate decision is confiscatory. The court stated in that case:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The returns should be reasonably sufficient to ensure confidence in the financial soundness of the utility and should be adequate under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.[6]

[6] *Bluefield Waterworks*, 262 U.S. at 692-93.

The court also stated: "Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to render the service are unjust, unreasonable and confiscatory, and their enforcement deprives the public utility company of its property in violation of the Fourteenth Amendment."[7]

Although Mr. Parcell acknowledges this decision as "authoritative" and a "landmark," his arguments ignore this basic standard. In effect, Mr. Parcell proposes a "heads I win, tails you lose" approach to setting rates. When market risk is low, as it was in Chaparral City's prior case, then it is appropriate to consider market risk and lower the authorized return. Conversely when market risk is high, as it is at the present time, current market risk should be ignored in order to lower the authorized return. It is improper and result-driven to arbitrarily switch back and forth between methods, as Mr. Parcell proposes.

Q. IS THE RETURN ON EQUITY REQUESTED BY CHAPARRAL CITY HIGH WHEN COMPARED TO CURRENT OR HISTORIC CAPITAL COSTS?

A. No, it is not. Chaparral City is requesting that it be authorized a return on equity of 11.5 percent. I understand that throughout the 1990s, returns on equity for water utilities were about 11 percent and sometimes higher. For example, in Far West Water & Sewer's 2000 rate case, it was authorized a return of 11.5 percent on common equity and a weighted cost of capital of 9.56 percent.[8]

By contrast, the updated equity costs estimates in this case show that the cost of equity is currently higher than 11.5 percent.

Company Rebuttal	13.0%

[7] *Id.* at 690.

[8] Decision No. 62649 (June 13, 2000) at 9-10.

Company Rejoinder	13.2%
Company Supplemental	12.7%
Staff Direct	11.8%
Staff Updated	14.8%
Staff Supplemental	14.2%

The Company's requested return on equity is also supported by current interest rates on investment-grade debt, such as American Water Works' recent debt issue, which had an interest rate of 10 percent, and the fact that the average beta of the sample water utilities has increased substantially since the Company's prior rate case, indicating that water utilities have generally become more risky relative to the market. When these factors are considered, Chaparral City's request is hardly excessive, as Mr. Parcell's arguments imply.

Q. DOES THAT CONCLUDE YOUR SUPPLEMENTAL REJOINDER TESTIMONY MR. BOURASSA?

A. Yes.

1

Chaparral City Water Company
Summary of Results

Exhibit
Supp. Rj. Schedule D-4.0
Witness: Bourassa

Line No.	Method	Low	High	Midpoint
1				
2				
3				
4	Method	Low	High	Midpoint
5	DCF Constant Growth	10.2%	14.7%	12.4%
6	DCF Sustainable Growth	8.5%	11.7%	10.1%
7	DCF Two-Stage	10.0%	12.7%	11.3%
8				
9	Average DCF Results	9.6%	13.0%	11.3%
10				
11	CAPM	8.6%	19.4%	14.0%
12				
13	Average DCF and CAPM Results	9.1%	16.2%	12.7%
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				

Chaparral City Water Company
Selected Characteristics of Water Utilities

Exhibit
Supp. Rj. Schedule D-4.1
Witness: Bourassa

Line No.	Company	% Water Revenues	Operating Revenues (millions)	Net Plant (millions)	S&P Bond Rating	Moody's Bond Rating
1	1. American States	82%	$ 308.5	$ 714.6	NR	A2
2	2. Aqua America	87%	$ 616.2	$ 2,507.4	AA-	NR
3	3. California Water	97%	$ 396.1	$ 970.2	NR	NR
4	4. Connecticut Water	85%	$ 61.4	$ 243.7	AAA	NR
5	5. Middlesex	90%	$ 90.8	$ 312.4	A	NR
6	6. SJW Corp.	95%	$ 218.4	$ 483.7	NR	NR
7						
8	Average	89%	$ 281.9	$ 872.0		
9						
10	Chaparral City Water Company	100%	$ 7.5	$ 37.2	NR	NR

Source: AUS Utility Reports December 2008)

Chaparral City Water Company
Capital Structures of Water Utilities

Exhibit
Supp. Rj. Schedule D-4.2
Witness: Bourassa

No.	Company	Book Value Long-Term Debt	Book Value Common Equity	Market Value Long-Term Debt	Market Value Common Equity
1					
2					
3					
4	1. American States	47.0%	53.0%	32.9%	67.1%
5	2. Aqua America	55.4%	44.6%	31.5%	68.5%
6	3. California Water	43.0%	57.0%	24.1%	75.9%
7	4. Connecticut Water	56.7%	43.3%	39.3%	60.7%
8	5. Middlesex	49.8%	50.2%	36.7%	63.3%
9	6. SJW Corp.	47.7%	52.3%	30.1%	69.9%
10					
11	Average	49.9%	50.1%	32.4%	67.6%
12					
13	Chaparral City Water Company	23.4%	76.6%	N/A	N/A
14					
15					
16					
17	Source: Value Line Analyzer Data (December 19, 2008)				
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

Chaparral City Water Company
Comparisons of Past and Future Estimates of Growth

Exhibit
Supp. Rj. Schedule D-4.3
Page 1
Witness: Bourassa

Line No.	Company	Five-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth[1]
7	1. American States	13.68%	4.53%	1.99%	6.53%	8.50%
8	2. Aqua America	13.72%	9.84%	8.45%	5.63%	7.50%
9	3. California Water	12.76%	7.11%	0.70%	3.71%	8.50%
10	4. Connecticut Water	1.91%	3.50%	1.51%	Negative	8.90%
11	5. Middlesex	6.86%	6.34%	1.93%	3.57%	8.00%
12	6. SJW Corp.	24.69%	8.96%	7.24%	5.92%	12.00%
15	GROUP AVERAGE	12.27%	6.71%	3.64%	5.07%	8.90%
16	GROUP MEDIAN	13.22%	6.73%	1.96%	5.63%	8.50%

1 See Supp. Rj. Schedule D-4.5

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Comparisons of Past and Future Estimates of Growth

Exhibit
Supp. Rj. Schedule D-4.4
Page 1
Witness: Bourassa

Line No.	Company	Ten-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth[1]
7	1. American States	12.35%	4.54%	1.47%	4.53%	8.50%
8	2. Aqua America	13.87%	9.39%	7.18%	7.64%	7.50%
9	3. California Water	6.33%	3.59%	0.91%	Negative	8.50%
10	4. Connecticut Water	8.84%	3.76%	1.26%	1.08%	8.90%
11	5. Middlesex	9.88%	3.98%	1.98%	2.65%	8.00%
12	6. SJW Corp.	16.43%	4.85%	5.13%	2.66%	12.00%
15	GROUP AVERAGE	11.28%	5.02%	2.99%	3.71%	8.90%
16	GROUP MEDIAN	11.12%	4.26%	1.72%	2.66%	8.50%

[1] See Supp. Rj. Schedule D-4.5

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Analysts Forecasts of Earnings Per Share Growth

Exhibit
Supp. Rj. Schedule D-4.5
Witness: Bourassa

Line No.	Company	(1) Zacks	(2) Morningstar	Yahoo	(3) Value Line	(4) Average Growth (G) (Cols 1-3)
		EPS GROWTH				
1	1. American States	12.00%	7.00%	4.00%	11.00%	8.50%
2	2. Aqua America	8.00%	7.50%	7.00%	7.50%	7.50%
3	3. California Water	8.00%	8.00%	8.00%	10.00%	8.50%
4	4. Connecticut Water					8.90%
5	5. Middlesex	8.00%		8.00%	8.00%	8.00%
6	6. SJW Corp.	13.00%	15.00%	10.00%	10.00%	12.00%
7	GROUP AVERAGE	9.80%	9.38%	7.40%	9.30%	8.90%
8	GROUP MEDIAN					8.50%

Sources:
Value Line Investment Analyzer Data December 19, 2008
Zacks Investment Research Site December 19, 2008
Morningstar Website December 19, 2008
Yahoo Finance December 19, 2008

Chaparral City Water Company
Estimates of Sustainable Growth

Exhibit
Supp. Rj. Schedule D-4.6
Witness: Bourassa

Line No.	Company	(1) Retention Ratio	(2) Rate of Return	(3) br Growth	(4) sv Growth	(5) Average Sustainable Growth (Cols 3+4)
7	1. American States	0.52	13.50%	7.02%	0.91%	7.93%
8	2. Aqua America	0.43	12.00%	5.20%	0.65%	5.85%
9	3. California Water	0.49	11.00%	5.34%	2.82%	8.16%
10	4. Connecticut Water					
11	5. Middlesex					
12	6. SJW Corp.					
15	GROUP AVERAGE	0.48	12.17%	5.85%	1.46%	7.31%
16	GROUP MEDIAN	0.49	12.00%	5.34%	0.91%	7.93%

Sources:
Value Line Data

Chaparral City Water Company
Estimates of sv Growth

Exhibit
Supp. Rj. Schedule D-4.7
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)
1					
2					
3					
4		Stock	Current		
5		Financing	Market to Book		sv
6	Company	Rate	Ratio	v	Growth
7	1. American States	2.03%	1.81	0.45	0.91%
8	2. Aqua America	1.03%	2.71	0.63	0.65%
9	3. California Water	4.87%	2.37	0.58	2.82%
10	4. Connecticut Water				na
11	5. Middlesex				na
12	6. SJW Corp.				na
13					
14					
15	GROUP AVERAGE	2.65%	2.30	0.55	1.46%
16	GROUP MEDIAN	2.03%	2.37	0.58	0.91%
17					
18	Sources:				
19	Value Line Data				
20					
21					

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Projected EPS Growth

Exhibit
Supp. Rj. Schedule D-4.8
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)
	Company	Spot Price (Po)	Next Year's Div (D1)	Dividend Yield	Growth (g)[1]	Indicated Cost of Equity k=Div Yld + g (Cols 3+4)
7	1. American States	31.75	1.09	3.42%	8.50%	11.9%
8	2. Aqua America	19.84	0.54	2.71%	7.50%	10.2%
9	3. California Water	43.93	1.27	2.89%	8.50%	11.4%
10	4. Connecticut Water	24.19	0.97	3.99%	8.90%	12.9%
11	5. Middlesex	17.18	0.76	4.44%	8.00%	12.4%
12	6. SJW Corp.	27.28	0.73	2.69%	12.00%	14.7%
15	GROUP AVERAGE			3.36%	8.90%	12.3%
16	GROUP MEDIAN					12.2%

[1] See Schedules D-4.5

Sources:
Value Line Investment Analyzer Data December 19, 2008
Yahoo Finance Spot Prices as of December 18, 2008

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Sustainable Growth

Exhibit
Supp. Rj. Schedule D-4.9
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)
					Sustainable Growth[1]			Indicated Cost of Equity
	Company	Spot Price (Po)	Next Year's Div (D1)	Dividend Yield	br	vs	br+sv Growth (g)	k=Div Yld + g (Cols 3+6)
1	1. American States	31.75	1.08	3.40%	7.02%	0.91%	7.93%	11.3%
2	2. Aqua America	19.84	0.53	2.67%	5.20%	0.65%	5.85%	8.5%
3	3. California Water	43.93	1.27	2.88%	5.34%	2.82%	8.16%	11.0%
4	4. Connecticut Water	24.19	0.95	3.93%			7.31%	11.2%
5	5. Middlesex	17.18	0.76	4.41%			7.31%	11.7%
6	6. SJW Corp.	27.28	0.70	2.58%			7.31%	9.9%
7	GROUP AVERAGE			3.31%			7.31%	10.6%
8	GROUP MEDIAN							11.1%

[1] See Supp. Rj. Schedule D-4.6 and D-4.7

Sources:
Value Line Investment Analyzer Data December 19, 2008
Yahoo Finance Spot Prices as of December 18, 2008

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Two-Stage Growth - Projected

Exhibit
Supp. Rj. Schedule D-4.10
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)
					Projected Growth Rates			
	Company	Spot Price(P_0)	Next Year's Div (D_1)	Yield (D_1/P_0)	Near Term[1]	Long Term (GDP)	Average[2]	Indicated Cost of Equity
1	1. American States	31.75	1.08	3.40%	8.50%	6.80%	7.94%	11.3%
2	2. Aqua America	19.84	0.54	2.70%	7.50%	6.80%	7.27%	10.0%
3	3. California Water	43.93	1.26	2.87%	8.50%	6.80%	7.94%	10.8%
4	4. Connecticut Water	24.19	0.96	3.96%	8.90%	6.80%	8.21%	12.2%
5	5. Middlesex	17.18	0.76	4.43%	8.00%	6.80%	7.60%	12.0%
6	6. SJW Corp.	27.28	0.66	2.40%	12.00%	6.80%	10.28%	12.7%
7	GROUP AVERAGE			3.30%			8.21%	11.5%
8	GROUP MEDIAN							11.7%

[1] See Supp. Rj. Schedule D-4.5
[2] Near term growth given weighting of .67

Chaparral City Water Company
Market Betas

Exhibit
Supp. Rj. Schedule D-4.11
Witness: Bourassa

Line No.		Company	
1			
2	1.	American States	0.95
3	2.	Aqua America	0.90
4	3.	California Water	1.05
5	4.	Connecticut Water	0.80
6	5.	Middlesex	0.80
7	6.	SJW Corp.	1.05
8		Average	**0.93**
9			
10	Source:		
11	Value Line Investment Analyzer Data December 19, 2008		
12			
13			
14			
15			
16			

Chaparral City Water Company
Computation of Current Market Risk Premium

Exhibit
Supp. Rj. Schedule D-4.12
Witness: Bourassa

Line No.	Month	Dividend Yield	+	Growth	=	Expected Market Return	-	Monthly Average 30 Year Treasury Rate	=	Market Risk Premium
1										
2										
3	**Month**	Yield	+	Growth	=	Return	-	Treasury Rate	=	Premium
10	Dec 2007	2.61%	+	13.51%	=	16.12%	-	4.52%	=	11.60%
11	Jan 2008	2.67%	+	15.19%	=	17.86%	-	4.33%	=	13.53%
12	Feb	2.74%	+	16.47%	=	19.21%	-	4.52%	=	14.69%
13	March	2.85%	+	17.64%	=	20.49%	-	4.39%	=	16.10%
14	April	2.69%	+	15.73%	=	18.42%	-	4.44%	=	13.98%
15	May	2.73%	+	15.51%	=	18.24%	-	4.60%	=	13.64%
16	Jun	3.13%	+	18.51%	=	21.64%	-	4.69%	=	16.95%
17	Jul	3.15%	+	18.61%	=	21.76%	-	4.57%	=	17.19%
18	Aug	3.06%	+	17.08%	=	20.14%	-	4.50%	=	15.64%
19	Sept	3.07%	+	19.30%	=	22.37%	-	4.27%	=	18.10%
20	Oct	4.31%	+	30.53%	=	34.84%	-	4.17%	=	30.67%
21	Nov 2008	4.97%	+	35.02%	=	39.99%	-	4.00%	=	35.99%
22										
23	Recent 12 Mon Avg	3.17%	+	19.43%	=	22.59%	-	4.42%	=	18.17%
27										
28	Short-term Trends									
29	Recent Nine Months Avg	3.33%	+	20.88%	=	24.21%	-	4.40%	=	19.81%
30	Recent Six Months Avg	3.62%	+	23.18%	=	26.79%	-	4.37%	=	22.42%
31	Recent Three Months Avg	4.12%	+	28.28%	=	32.40%	-	4.15%	=	28.25%
32										
33	Sources									
34	Value Line Investment Analyzer Software Data									
35	Federal Reserve									

Chaparral City Water Company
Test Year Ended December 31, 2006
Capital Asset Pricing Model (CAPM)

Exhibit
Supp. Rj. Schedule D-4.13
Witness: Bourassa

Line No.		Rf	+	beta[3]	x	Rp	=	k
1								
2								
3	Historical Market Risk Premium CAPM[1]	1.6%	+	0.93	x	7.5% [4]	=	8.6%
4								
5	Current Market Risk Premium CAPM[2]	2.5%	+	0.93	x	18.2% [5]	=	19.4%
6								
7								
8	Average							14.0%
9								
10								
11								

12 [1] Federal Reserve December 18, 2008 average of 5, 7 and 10 year Treasury rates (Rf)
13 [2] Federal Reserve December 18, 2008 30 year Treasury rate (Rf)
14 [3]Va lue Line Investment Analyzer data. See Supp. Rj. Schedule D-4.11
15 [4] Historical Market Risk Premium from (Rp) MorningStar SBBI 2008 Yearbook Table A-2 Intermediate-Horizon ERP 1926-2007
16 [5] Computed using DCF constant growth method to determine current market return on Value Line 1700 stocks
17 and CAPM with beta of 1.0 to compute Current Market Risk Premium (Rp). See Supp. Rj. Schedule D-4.12.
18
19
20

2

Chaparral City Water Company, Inc.
Capital Structure
And Weighted Average Cost of Capital

[A]	[B]	[C]	[D]
Description	Weight (%)	Cost	Weighted Cost
Staff Recommended Structure			
Debt	24.4%	4.8%	1.2%
Common Equity	75.6%	11.4%	8.6%
Weighted Average Cost of Capital			**9.8%**

[D] : [B] x [C]

Supporting Schedules: TJB-3 and TJB-4.

Chaparral City Water Company, Inc.
Inflation Adjustment (Accretion Return) and
Resulting Fair Value Rate of Return

Description		
Weighted Average Cost of Capital	9.8%	1
Minus: Modified Inflation Adjustment/Accretion Return	**-0.4%**	2
Fair Value Rate of Return	**9.4%**	

1: Schedule TJB-1

2: Calculation of Modified Inflation Adjustment/Accretion Return:

20-year Treasury Yield [3]	2.9%	
20-year Treasury Real Yield [3]	2.0%	
Return Required by Investors due to Inflation (Accretion Return)	0.9%	
Times a 50% Factor	0.5	4
Modified Inflation Adjustment/Accretion Return	0.4%	

3: http://www.ustreas.gov as of 12/18/2008.

4: Direct Testimony of Mr. Gordon L. Fox.

Chaparral City Water Company, Inc.
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]		[C]		[D]		[E]
DCF Method			D_1/P_0 [1]	+	g [2]	=	k
Constant Growth DCF Estimate			3.2%	+	6.0%	=	9.2%
Multi-Stage DCF Estimate						=	9.9%
Average of DCF Estimates							**9.6%**
CAPM Method	Rf	+	β [5]	x	(Rp)	=	k
Historical Market Risk Premium[3]	1.6%	+	0.93	x	7.5% [6]	=	8.6%
Current Market Risk Premium[4]	2.5%	+	0.93	x	28.4% [7]	=	28.8%
Average of CAPM Estimates							**18.7%**
					Average		**14.2%**
					Financial risk adjustment		-2.8%
					Total		**11.4%**

1 MSN Money and Value Line

2 Schedule TJB-8

3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at www.ustreas.gov 12/18/2008

4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at www.ustreas.gov 12/18//2008

5 Value Line

6 Historical Market Risk Premium (Rp) from Ibbotson Associates SBBI 2008 Yearbook

7 Value Line Investment Survey December 19, 2008

Chaparral City Water Company, Inc.
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
Company	Debt	Common Equity	Total
American States Water	50.9%	49.1%	100.0%
California Water	43.8%	56.2%	100.0%
Aqua America	55.0%	45.0%	100.0%
Connecticut Water	50.5%	49.5%	100.0%
Middlesex Water	51.5%	48.5%	100.0%
SJW Corp	47.6%	52.4%	100.0%
Average Sample Water Utilities	**49.9%**	**50.1%**	**100.0%**
Chaparral City Water Company, Inc.	**24.4%**	**75.6%**	**100.0%**

Source:
Sample Water Companies from Value Line

Chaparral City Water Company, Inc.
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Company	Dividends Per Share 1997 to 2007 DPS[1]	Dividends Per Share Projected DPS[1]	Earnings Per Share 1997 to 2007 EPS[1]	Earnings Per Share Projected EPS[1]
American States Water	1.5%	4.6%	4.5%	10.3%
California Water	0.9%	0.8%	-2.0%	11.2%
Aqua America	7.2%	7.2%	7.6%	9.2%
Connecticut Water	1.2%	No Projection	0.5%	No Projection
Middlesex Water	1.9%	No Projection	2.6%	No Projection
SJW Corp	4.8%	No Projection	2.7%	No Projection
Average Sample Water Utilities	**2.9%**	**4.2%**	**3.6%** [2]	**10.2%**

1 Value Line

2 Note that the figure -2.0% has been excluded from the calculation. This has been done as negative growth is inconsistent with the DCF model.

Chaparral City Water Company, Inc.
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth **1998 to 2007** br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth **1998 to 2007** br + vs	Sustainable Growth Projected br + vs
American States Water	2.8%	5.7%	1.4%	4.2%	7.1%
California Water	1.8%	5.5%	5.0%	6.9%	10.5%
Aqua America	4.5%	5.3%	4.9%	9.3%	10.2%
Connecticut Water	2.6%	No Projection	1.2%	3.8%	No Projection
Middlesex Water	1.3%	No Projection	3.2%	4.4%	No Projection
SJW Corp	4.4%	No Projection	0.1%	4.5%	No Projection
Average Sample Water Utilities	**2.9%**	**5.5%**	**2.6%**	**5.5%**	**9.3%**

[B]: Value Line
[C]: Value Line
[D]: Value Line and MSN Money
[E]: [B]+[D]
[F]: [C]+[D]

Chaparral City Water Company, Inc.
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 12/18/2008	Book Value	Mkt To Book	*Value Line* Beta β	Raw Beta β *raw*
American States Water	AWR	**31.75**	17.87	1.8	**0.95**	0.90
California Water	CWT	**43.93**	19.29	2.3	**0.90**	0.82
Aqua America	WTR	**19.84**	7.86	2.5	**1.05**	1.04
Connecticut Water	CTWS	**24.19**	12.56	1.9	**0.80**	0.67
Middlesex Water	MSEX	**17.18**	10.50	1.6	**0.80**	0.67
SJW Corp	SJW	**27.28**	13.66	2.0	**1.05**	1.04
Average				**2.0**	**0.93**	**0.86**

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Chaparral City Water Company, Inc.
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
Description	g
DPS Growth - Historical[1]	2.9%
DPS Growth - Projected[1]	4.2%
EPS Growth - Historical[1]	3.6%
EPS Growth - Projected[1]	10.2%
Sustainable Growth - Historical[2]	5.5%
Sustainable Growth - Projected[2]	9.3%
Average	**6.0%**

1 Schedule TJB-5

2 Schedule TJB-6

Chaparral City Water Company, Inc.
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[H]	[I]
Company	Current Mkt. Price (P_o)[1] 12/18/2008	Projected Dividends[2] (Stage 1 growth) (D_t) d_1	d_2	d_3	d_4	Stage 2 growth[3] (g_n)	Equity Cost Estimate (K)[4]
American States Water	31.8	1.04	1.11	1.17	1.24	6.7%	9.9%
California Water	43.9	1.21	1.28	1.35	1.44	6.7%	9.4%
Aqua America	19.8	0.53	0.56	0.59	0.63	6.7%	9.3%
Connecticut Water	24.2	0.92	0.98	1.04	1.10	6.7%	10.5%
Middlesex Water	17.2	0.73	0.77	0.82	0.87	6.7%	10.9%
SJW Corp	27.3	0.66	0.70	0.74	0.79	6.7%	9.1%
						Average	**9.9%**

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n .$$

Where : P_0 = current stock price

D_t = dividends expected during stage 1

K = cost of equity

n = years of non – constant growth

D_n = dividend expected in year n

g_n = constant rate of growth expected after year n

1 [B] see Schedule TJB-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2005 in current dollars.

4 Internal Rate of Return of Projected Dividends

3 http://www.bea.doc.gov/

Chaparral City Water Company, Inc.
Capitalization

	Interest Rate	Annual Interest	Amount outstanding as of 6/30/2008	Percentage of Capital Structure
Long-Term Debt				
Bonds due 2011	5.2%	$ 52,000	$ 1,000,000	
Bonds due 2022	5.4%	$ 248,940	4,610,000	
Bonds due 2022	5.3%	$ 51,675	975,000	
Long-Term Debt	5.4%	352,615	$ 6,585,000	18.6%
Short-Term Debt	2.9%	59,040	2,050,000	
Short-Term Debt	2.9%	59,040	$ 2,050,000	5.8%
Total Debt	4.8%	$ 411,655	$ 8,635,000.00	24.4%
Common Equity				
Common Shares Outstanding			4,603,000	
Paid in Capital			14,950,000	
Retained Earnings			7,137,000	
Total Common Equity			$ 26,690,000	75.6%
Total Capitalization			$ 35,325,000	100.0%

Chaparral City Water Company, Inc.
Calculation of Unlevered Beta
Sample Water Utilities

$$\beta_{UL} = \frac{\beta_L}{1 + BD \div EC\ (1 - t)}$$

Where :

β_{UL} = unlevered beta
β_L = levered beta
BD = book debt
EC = equity capital
t = tax rate

Line No.	[A]	[B] (Unadjusted Beta) Value Line Levered Raw Beta β_L	[C] Tax Rate t	[D] Book Debt BD	[E] Equity Cap EC	[F] Unlevered Raw Beta $\beta_{UL} = \frac{\beta_L}{1+\frac{BD}{EC}(1-t)}$
1	American States Water	0.90	**40.5%**	0.51	0.49	0.55
2	California Water	0.82	**39.7%**	0.44	0.56	0.56
3	Aqua America	1.04	**39.6%**	0.55	0.45	0.60
4	Connecticut Water	0.67	**23.5%**	0.50	0.50	0.38
5	Middlesex Water	0.67	**33.4%**	0.51	0.49	0.39
6	SJW Corp	1.04	**40.8%**	0.48	0.52	0.68
7						
8	Sample Water Utilities	0.86	36.25%	0.50	0.50	0.53
9						
10						
11						
12						
13						
14	Source: Value Line					
15	Supporting Schedules: Schedule TJB-1, Schedule TJB-3					

Chaparral City Water Company, Inc.
Calculation of Relevered Beta
Sample Water Utilities

$$\beta_{RL} = \beta_{UL}\ (1 + (1 - t)BD \div EC)$$

Where :

β_{RL} = relevered beta
β_{UL} = unlevered beta
t = tax rate
BD = book debt
EC = equity capital

[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Unlevered Raw Beta β_{UL}	Book Debt BD	Equity Capital EC	Tax Rate t	Relevered Raw Beta $b_{RL}=\beta_{UL}(1+(1-t)BD/EC))$ β_{RL}	Adjusted Relevered Beta .35 + .67(Raw Beta) β_{RL}
Chaparral City Water Company, Inc.	0.53	0.24	0.76	38.60%	0.63	0.77

Source: Schedule C3 of the Company's application

Supporting Schedules: Schedule TJB-9 and TJB-10

Chaparral City Water Company, Inc.
Financial Risk Adjustment
Sample Water Companies

[A]	[B]		[C]		[D]		[E]
CAPM Method	**Rf**	+	β	x	**(Rp)**	=	**k**
Historical Market Risk Premium	1.6%	+	0.93	x	7.5%	=	8.6%
Current Market Risk Premium	2.5%	+	0.93	x	28.4%	=	28.8%
Average of CAPM Estimates							**18.7%**
Relevered Beta	**Rf**		β		**(Rp)**		**k**
Historical Market Risk Premium	1.6%	+	0.77	x	7.5%	=	7.4%
Current Market Risk Premium	2.5%	+	0.77	x	28.4%	=	24.4%
Average of CAPM Estimates							**15.9%**
Capital Structure Adjustment (8 - 3)							-2.8%

Supporting Schedules: Schedule TJB-2, Schedule TJB-11

Docket No. W-02113A-07-0551

Updated Staff Cost of Capital
Staff Revised
Based on Market Value Cap. Structure

Supplemental Rejoinder
Schedule TJB-14
Witness: Bourassa

Chaparral City Water Company, Inc.
Calculation of Unlevered Beta
Sample Water Utilities

$$\beta_{UL} = \frac{\beta_L}{1 + BD \div EC\ (1 - t)}$$

Where :

β_{UL} = unlevered beta
β_L = levered beta
BD = MV debt (assumed to be book)
EC = MVequity capital
t = tax rate

Line No.	[A]	[B] (Unadjusted Beta) Value Line Levered Raw Beta β_L	[C] Tax Rate t	[D] Debt BD	[E] Equity EC	[F] Unlevered Raw Beta $\beta_{UL} = \frac{\beta_L}{1+\frac{BD}{EC}(1-t)}$
1	American States Water	0.90	**40.5%**	0.37	0.63	0.66
2	California Water	0.82	**39.7%**	0.25	0.75	0.68
3	Aqua America	1.04	**39.6%**	0.33	0.67	0.81
4	Connecticut Water	0.67	**23.5%**	0.35	0.65	0.48
5	Middlesex Water	0.67	**33.4%**	0.39	0.61	0.47
6	SJW Corp	1.04	**40.8%**	0.31	0.69	0.82
7						
8	Sample Water Utilities	0.86	36.25%	0.33	0.67	0.65
9						
10						
11						
12						
13						
14	**Source: Value Line**					
15	**Supporting Schedules: Schedule TJB-1, Schedule TJB-3**					

Docket No. W-02113A-07-0551

Updated Staff Cost of Capital
Staff Revised
Based on Market Value Cap. Structure

Supplemental Rejoinder
Schedule TJB-15
Witness: Bourassa

Chaparral City Water Company, Inc.
Calculation of Relevered Beta
Sample Water Utilities

$$\beta_{RL} = \beta_{UL}\,(1 + (1 - t)BD \div EC)$$

Where:

β_{RL} = relevered beta
β_{UL} = unlevered beta
t = tax rate
BD = MV debt (assumed to be book)
EC = MV equity capital

[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Unlevered Raw Beta β_{UL}	Book Debt BD	Equity Capital EC	Tax Rate t	Relevered Raw Beta $b_{RL}=\beta_{UL}(1+(1-t)BD/EC))$ β_{RL}	Adjusted Relevered Beta .35 + .67(Raw Beta) β_{RL}
Chaparral City Water Company, Inc.	0.65	0.30	0.70	38.60%	0.82	0.90

Source: Schedule C3 of the Company's application
Supporting Schedules: Schedule TJB-9 and TJB-10

Computation of MV Equity		Amount	%
Fair Value Rate Base	$	27,767,249	100.0%
less: Debt		8,265,000	29.8%
Market Value Equity	$	19,502,249	70.2%

Chaparral City Water Company, Inc.
Financial Risk Adjustment
Sample Water Companies

[A]	[B]		[C]		[D]		[E]
CAPM Method	**Rf**	+	β	x	**(Rp)**	=	**k**
Historical Market Risk Premium	1.6%	+	0.93	x	7.5%	=	8.6%
Current Market Risk Premium	2.5%	+	0.93	x	28.4%	=	28.8%
Average of CAPM Estimates							**18.7%**
Relevered Beta	**Rf**		β		**(Rp)**		**k**
Historical Market Risk Premium	1.6%	+	0.90	x	7.5%	=	8.4%
Current Market Risk Premium	2.5%	+	0.90	x	28.4%	=	28.0%
Average of CAPM Estimates							**18.2%**
Capital Structure Adjustment (8 - 3)							-0.5%

Supporting Schedules: Schedule TJB-2, Schedule TJB-11

3

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

JEFF HATCH-MILLER - Chairman
WILLIAM A. MUNDELL
MIKE GLEASON
KRISTIN K. MAYES
BARRY WONG

IN THE MATTER OF THE APPLICATION OF BLACK MOUNTAIN SEWER CORPORATION, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO. SW-02361A-05-0657 **CLOSING BRIEF OF COMMISSION STAFF**

Black Mountain Sewer Corporation ("Black Mountain Sewer" or the "Company") filed an application for a rate increase in the above captioned docket on September 16, 2005. The Company's current rates were authorized in Decision No. 59944, dated December 26, 1996.[1] In the test year ending December 31, 2004, the Company provided wastewater service to 1,923 customers in the Town of Carefree, in unincorporated portions of Maricopa County and in portions of the City of Scottsdale. Most of the Company's customers reside in the Town of Carefree.[2] On October 23, 2001, the Company changed its name from Boulders Carefree Sewer Corporation to Black Mountain Sewer Corporation.

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[1] Exhibit S-9 at 3.
[2] *Id.* at 2.

and shareholders. As a result, Staff recommends an increase of $4,800 over the Company's initial request. Accordingly, Staff recommends $124,800 in total for rate case expenses.

IV. COST OF CAPITAL

Staff recommends a capital structure of 100% equity and 0% debt.[145] The Company and Staff agree on capital structure. Staff's final recommended ROE is 9.6%. The Company's recommended ROE is 11%.[146]

Staff's recommendations use market-based financial models that have been accepted by this Commission for many years. Staff uses both historical and forecasted inputs. All of Staff's inputs are factors which investors can reasonably be expected to consider in determining their expected rate of return. The models are also widely accepted in the financial industry and by most state commissions in setting just and reasonable rates of return.

The Company's recommendations are based on two different constant growth DCF models and one multi-stage DCF model.[147] The Company then selects its recommended ROE with the range of results by comparing them to two different "approaches."

These "approaches" rely heavily on non-market based data and forecasts. The approaches are the "risk premium approach" and the "comparable earnings approach." The Company requests an increase in ROE to compensate for the Company's small firm size and individual business risk. The Commission has repeatedly rejected these approaches, and risk premiums for small firm size and individual business risk.

A. The Commission Should Adopt Staff's Recommended ROE Of 9.6% Because It Is Based On Proven Financial Models And On Balanced And Reasonable Inputs.

To determine the required rate of return, Staff used the following financial models: (1) the constant growth discounted cash flow ("DCF") model (9.4%); (2) the multi-stage DCF model (9.8%);

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[145] But see Staff Brief Schedule PMC-2. Staff calculated a downward adjustment of 50 basis points for financial risk. Staff used the Hamada equation to quantify financial risk due to the Company's capital structure. Staff did not recommend the downward adjustment because the Company's capital structure is reasonable. Exhibit S-5 at 2, ll. 11-17. The Company has two inter-company loans that are not included in the capital structure pursuant to Decision Nos. 59944 and 60240. Staff recognizes that investors would view the loans as debt in determining capital structure. Exhibit S-4 at 6, l. 21 - 7, l. 7. See also Staff Brief Schedule PMC-3 comparing the Company's actual capital structure with the average for Staff's proxy water companies.

[146] Staff Brief Schedule PMC-1. Note that the overall rate of return ("ROR") is the same as the ROE for Staff and the Company because of the capital structure.

[147] Exhibit A-1 at 40, l. 8-18.

and (3) the capital asset pricing model ("CAPM"). Staff used two CAPM estimates, one using an historical market risk premium (10.1%), and one using a current market risk premium (8.9%). Staff first calculated an average for the DCF results (9.6%); then calculated an average for the CAPM results (9.5%); and finally calculated the average for both models (9.6%).[148] Staff's recommended ROE is the average for both models.

For the constant growth DCF, Staff calculated the growth factor by averaging the results of six different methods for calculating it.[149] The growth factor is the most frequently disputed input in the model. Staff chose a balanced methodology that "gives equal weight to historical and projected earnings per share ("EPS"), dividends per share ("DPS"), and sustainable growth."[150] Staff witness Mr. Pedro Chaves testified that his choice of inputs "avoids the skewing that can occur by a less balanced analysis such as that prepared by the Company's witness."[151]

Mr. Bourassa criticized Staff's choice of inputs because "individual DCF results using these growth rates...produce indicated equity costs below the cost of debt."[152] Apparently, Mr. Bourassa expects Staff to calculate six different costs of equity using each method for calculating growth.[153] Then, if any result is below the cost of debt, Mr. Bourassa expects Staff to not use that particular input.[154] Mr. Chaves testified that if the Commission adopted Mr. Bourassa's approach, it should also exclude "the highest growth components to maintain a balanced outcome."[155] More importantly, Mr. Chaves testified that it is unreasonable to assume investors ignore low outcomes and accept high outcomes.[156]

Mr. Bourassa also criticizes Staff's growth factor in its multi-stage DCF model. Although Mr. Bourassa uses the same long term growth rate (6.8%), he criticized Staff's short term growth rate because it was lower than its constant growth DCF growth factor.[157] Staff calculated its short term growth rate using projections of dividends for each of its sample companies.[158] Mr. Bourassa's

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[148] See Staff Brief Schedule PMC-2.
[149] Exhibit S-4 at 16, ll. 10-15.
[150] Exhibit S-5 at 4, ll. 14-17.
[151] *Id.*
[152] Exhibit A-2 at 57, ll. 1-2.
[153] Exhibit S-5 at 5, ll. 4-12.
[154] Exhibit A-2 at 57, ll. 3-4.
[155] Exhibit S-5 at 5, ll. 12-17.
[156] *Id.*, ll. 10-12.
[157] Exhibit A-2 at 67, ll. 7-13.
[158] Exhibit S-4 at 25, ll. 13-17.

criticism is obviously result driven. Mr. Bourassa explains that "while financial models are useful, they cannot be used [mechanically or] blindly."[159]

However, it is Mr. Bourassa, and not Mr. Chaves, that uses professional judgment inappropriately. Mr. Bourassa uses a shot gun approach. He analyzes inputs by looking at the results they produce when used in financial models. He then selectively rejects and accepts inputs based on his initial iteration.

Staff chooses its inputs by first identifying available market data. It then analyzes whether investors can be expected to rely on the available data. Staff inputs are pre-selected as specified from a balanced methodology. Staff does not use results to determine inputs. If inputs are selected appropriately, the results speak for themselves.

Finally, Mr. Bourassa criticizes Staff's CAPM results because (1) its risk-free rate uses spot prices for five-, seven- and ten-year intermediate U.S. Treasury securities;[160] (2) its results don't increase in lock step with increases in interest rates;[161] and (3) its current market risk premium ("MRP") is unstable.[162] The Commission has repeatedly affirmed Staff's choice of inputs for both its DCF and CAPM models.[163]

Staff also believes that the record in this case does not support a conclusion that its current MRP is unstable. The MRP moves with the market which can be volatile. Market volatility does not make the CAPM model unstable or subject to manipulation. The evidence in this case also shows that Staff's overall results for its current MRP CAPM model did not change from its direct testimony to its surrebuttal testimony.

In Staff's direct testimony, its risk premium was 5.7%,[164] and in its surrebuttal testimony, it was 5.4%.[165] However, its overall results were 8.9% in both its direct and surrebuttal testimony

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[159] *Id.* at 54, ll. 20-21.

[160] Exhibit A-2 at 73, l. 12 - 74, l. 2.

[161] Exhibit A-3 at 26, ll. 14-22.

[162] Exhibit A-2 at 75, ll. 11-15.

[163] See e.g. *In the Matter of the Application of Southwest Gas*, Docket No. G-01551A-04-0876, Decision No. 68487 (Feb. 23, 2006); *In the Matter of the Application of Chaparral City Water Company*, Docket W-02113A-04-0616, Decision No. 68176 (Sep. 30, 2005); *In the Matter of the Application of Arizona Water* Company, Docket No. W-01445A-02-0619, Decision No. 66849 (Mar. 19, 2004); In *the Matter of the Application of Rio Rico Utilities, Inc.*, Docket No. WS-02676A-03-0434, Decision No. 67279 (Oct. 5, 2004); *In the Matter of the Application of Bella Vista Water Co., Inc.*, Docket No. W-02465A-01-0776, Decision No. 65350 (Nov. 1, 2002).

[164] See Exhibit S-6 (Revised Direct Testimony Schedule PMC-2).

[165] See Staff Brief Schedule PMC-2.

because the risk-free rate changed during the time interval.[166] Mr. Chaves also testified that the MRP varies with the market which varies over time.[167] He explained that variability is expected because the CAPM model is a market-based model.[168] Mr. Chaves testified that Staff uses both an historical MRP and a current MRP to mitigate the market's volatility.[169]

The Company introduced evidence which it implies demonstrates that the CAPM model is subject to manipulation.[170] In Company Exhibit A-20, the Company selected a handful of dates looking backward in time.[171] The Company then calculated the current MRP that would have resulted on those days.[172]

Mr. Chaves testified that it is possible to select dates looking backward in time to support a variety of positions.[173] Mr. Chaves further testified that Staff selects the dates for its inputs before the date occurs. Staff's process is to select the most recent date it can before finalizing its testimony.[174] Therefore, Staff's process does not manipulate the CAPM model to achieve a specific result.

Next, Mr. Bourassa claims that rising interest rates do not affect Staff's cost of capital analysis.[175] Mr. Bourassa ignores the fact that the CAPM model has three inputs which do not necessarily move in the same direction at the same time. Mr. Chaves specifically testified that "there is a relationship between interest rates and the cost of equity capital."[176] He also explained that the cost of equity capital will move in the same direction as interest rates if all other variables remain the same.[177]

He explained that, even though interest rates increased between the time of his Direct Testimony and his Surrebuttal Testimony, Staff's current MRP declined. The decline in current MRP offset the increase in interest rates.[178] Mr. Chaves made the same comparison between his testimony

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[166] See footnotes 166 and 167 above.
[167] Tr. 716, ll. 7-23.
[168] *Id.*
[169] *Id.* 703, l. 23 - 704, l. 1; see also *Id.* 707, ll. 9-15.
[170] *Id.* 705, l. 12 - 707, l. 20.
[171] *Id.* 717, ll. 14-19.
[172] Exhibit A-20.
[173] Tr. 717, ll. 16-19.
[174] *Id.* 717, ll. 3-10; and at 717, l. 22 - 719, l. 1.
[175] Exhibit A-3 at 26, ll. 21-22.
[176] Tr. 684, ll. 10-16.
[177] *Id.* at ll. 17-19.
[178] *Id.* at 719, ll. 5 to 722, ll. 18.

in this case and Staff's testimony in Company Exhibit A-21.[179] Although interest rates increased from 3.3% to 4.7%, the current MRP declined from 13.1% to 5.7%.[180]

B. The Commission Should Reject The Company's Recommended ROE Of 11% Because It Is Based On "Approaches" And Choices Of Inputs That Artificially Inflate Required Return, And Include Premiums For Which Investors May Eliminate Through Diversification.

Mr. Bourassa testified that his recommended ROE "is based on cost of equity estimates using constant growth and multi-stage growth discounted cash flow ("DCF") and *is confirmed by a risk premium analysis, [a comparable earnings analysis], and my review of the economic conditions expected to prevail during the period in which new rates will be in effect.*"[181] Mr. Bourassa testifies that his DCF results must be confirmed to comply with the *Bluefield Water Works*[182] and *Hope Natural Gas*[183] decisions.[184] The Company also argues that Black Mountain Sewer's small size and individual business risk should increase its ROE.[185]

The Company's DCF results are identical to Staff's DCF results. Mr. Bourassa corrected the results in his Rebuttal Testimony at the hearing. With the corrections, the average midpoint of his three DCF models is 9.6%.[186] The Company's results could be even lower. Mr. Bourassa's DCF model using EPS excluded one of his sample companies.

He excluded Middlesex because the "indicated cost of equity [is] only 40 basis points *above* [the] projected cost of Baa investment grade bonds."[187] Mr. Chaves testified that Mr. Bourassa's reason to exclude Middlesex was insufficient.[188] He calculated the average indicated cost of equity ("COE") including Middlesex.[189] Without Middlesex the average was 9.7%, but with Middlesex, it is 9.3%. With Middlesex, the Company's overall DCF results drop from 9.6% to 9.5%.

In addition to the exclusion of Middlesex, the Company's results could have been lower if it chose more balanced inputs. The Company only used forecasted EPS growth estimates. It excluded

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[179] *Id.* at 722, ll. 2-11.
[180] Compare Exhibit A-21, Schedule JMR-7 to Exhibit No. S-6.
[181] Exhibit A-1 at 13, ll. 18-23.
[182] *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679 (1923).
[183] *Federal Power Commission v. Hope Natural Gas*, 320 U.S. 591 (1944).
[184] Exhibit No. A-1 at 31, ll. 1-20 (emphasis added).
[185] *Id.* at 28, ll. 3-22.
[186] See Tr, 230, ll. 22-25; Tr. 231, ll. 106; Tr. 157, ll. 7-21; Tr. 144, ll. 16 - 145, l. 2; and Tr. 144, ll. 1-15.
[187] Exhibit A-3, Schedule D-4.9, footnote (b) (emphasis added).
[188] Tr. 712, ll. 19 to 713, ll. 17.
[189] Exhibit S-8.

4

Ibbotson® SBBI®

2008 Valuation Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2007

MORNINGSTAR®

Table 2-1

Total Returns, Income Returns, and Capital Appreciation of the Basic Asset Classes

Summary Statistics of Annual Returns

from 1926 to 2007

Series	Geometric Mean	Arithmetic Mean	Standard Deviation	Serial Correlation
Large Company Stocks				
Total Returns	10.4%	12.3%	20.0%	0.03
Income	4.2	4.2	1.6	0.89
Capital Appreciation	6.0	7.8	19.3	0.03
Ibbotson Small Company Stocks				
Total Returns	12.5	17.1	32.6	0.06
Mid-Cap Stocks*				
Total Returns	11.3	14.0	24.4	–0.02
Income	4.0	4.0	1.7	0.89
Capital Appreciation	7.1	9.8	23.7	–0.02
Low-Cap Stocks*				
Total Returns	11.7	15.5	29.0	0.03
Income	3.7	3.7	2.0	0.89
Capital Appreciation	7.9	11.6	28.4	0.02
Micro-Cap Stocks*				
Total Returns	12.5	18.5	38.8	0.08
Income	2.6	2.6	1.8	0.91
Capital Appreciation	9.9	15.8	38.3	0.07
Long-Term Corporate Bonds				
Total Returns	5.9	6.2	8.4	0.08
Long-Term Government Bonds				
Total Returns	5.5	5.8	9.2	–0.08
Income	5.2	5.2	2.7	0.96
Capital Appreciation	0.1	0.4	8.0	–0.23
Intermediate-Term Government Bonds				
Total Returns	5.3	5.5	5.7	0.15
Income	4.7	4.7	2.9	0.96
Capital Appreciation	0.5	0.5	4.4	–0.19
Treasury Bills				
Total Returns	3.7	3.8	3.1	0.91
Inflation	3.0	3.1	4.2	0.65

Total return is equal to the sum of three component returns: income return, capital appreciation return, and reinvestment return.

*Source: ©200801 CRSP®, Center for Research in Security Prices. Graduate School of Business, The University of Chicago used with permission. All rights reserved. www.crsp.chicagogsb.edu
See Chapter 7 for details on decile construction.

Table 2-2
Basic Series
Annual Total Returns (in percent)

from 1926 to 1970

Year	Large Company Stocks	Ibbotson Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermediate-Term Government Bonds	U.S. Treasury Bills	Inflation
1926	11.62	0.28	7.37	7.77	5.38	3.27	−1.49
1927	37.49	22.10	7.44	8.93	4.52	3.12	−2.08
1928	43.61	39.69	2.84	0.10	0.92	3.56	−0.97
1929	−8.42	−51.36	3.27	3.42	6.01	4.75	0.20
1930	−24.90	−38.15	7.98	4.66	6.72	2.41	−6.03
1931	−43.34	−49.75	−1.85	−5.31	−2.32	1.07	−9.52
1932	−8.19	−5.39	10.82	16.84	8.81	0.96	−10.30
1933	53.99	142.87	10.38	−0.07	1.83	0.30	0.51
1934	−1.44	24.22	13.84	10.03	9.00	0.16	2.03
1935	47.67	40.19	9.61	4.98	7.01	0.17	2.99
1936	33.92	64.80	6.74	7.52	3.06	0.18	1.21
1937	−35.03	−58.01	2.75	0.23	1.56	0.31	3.10
1938	31.12	32.80	6.13	5.53	6.23	−0.02	−2.78
1939	−0.41	0.35	3.97	5.94	4.52	0.02	−0.48
1940	−9.78	−5.16	3.39	6.09	2.96	0.00	0.96
1941	−11.59	−9.00	2.73	0.93	0.50	0.06	9.72
1942	20.34	44.51	2.60	3.22	1.94	0.27	9.29
1943	25.90	88.37	2.83	2.08	2.81	0.35	3.16
1944	19.75	53.72	4.73	2.81	1.80	0.33	2.11
1945	36.44	73.61	4.08	10.73	2.22	0.33	2.25
1946	−8.07	−11.63	1.72	−0.10	1.00	0.35	18.16
1947	5.71	0.92	−2.34	−2.62	0.91	0.50	9.01
1948	5.50	−2.11	4.14	3.40	1.85	0.81	2.71
1949	18.79	19.75	3.31	6.45	2.32	1.10	−1.80
1950	31.71	38.75	2.12	0.06	0.70	1.20	5.79
1951	24.02	7.80	−2.69	−3.93	0.36	1.49	5.87
1952	18.37	3.03	3.52	1.16	1.63	1.66	0.88
1953	−0.99	−6.49	3.41	3.64	3.23	1.82	0.62
1954	52.62	60.58	5.39	7.19	2.68	0.86	−0.50
1955	31.56	20.44	0.48	−1.29	−0.65	1.57	0.37
1956	6.56	4.28	−6.81	−5.59	−0.42	2.46	2.86
1957	−10.78	−14.57	8.71	7.46	7.84	3.14	3.02
1958	43.36	64.89	−2.22	−6.09	−1.29	1.54	1.76
1959	11.96	16.40	−0.97	[illegible].26	−0.39	2.95	1.50
1960	0.47	−3.29	9.07	13.78	11.76	2.66	1.48
1961	26.89	32.09	4.82	0.97	1.85	2.13	0.67
1962	−8.73	−11.90	7.95	6.89	5.56	2.73	1.22
1963	22.80	23.57	2.19	1.21	1.64	3.12	1.65
1964	16.48	23.52	4.77	3.51	4.04	3.54	1.19
1965	12.45	41.75	−0.46	0.71	1.02	3.93	1.92
1966	−10.06	−7.01	0.20	3.65	4.69	4.76	3.35
1967	23.98	83.57	−4.95	−9.18	1.01	4.21	3.04
1968	11.06	35.97	2.57	−0.26	4.54	5.21	4.72
1969	−8.50	−25.05	−8.09	−5.07	−0.74	6.58	6.11
1970	4.01	−17.43	18.37	12.11	16.86	6.52	5.49

Table 2-2 (continued)
Basic Series
Annual Total Returns (in percent)

from 1971 to 2007

Year	Large Company Stocks	Ibbotson Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermediate-Term Government Bonds	U.S. Treasury Bills	Inflation
1971	14.31	16.50	11.01	13.23	8.72	4.39	3.36
1972	18.98	4.43	7.26	5.69	5.16	3.84	3.41
1973	−14.66	−30.90	1.14	−1.11	4.61	6.93	8.80
1974	−26.47	−19.95	−3.06	4.35	5.69	8.00	12.20
1975	37.20	52.82	14.64	9.20	7.83	5.80	7.01
1976	23.84	57.38	18.65	16.75	12.87	5.08	4.81
1977	−7.18	25.38	1.71	−0.69	1.41	5.12	6.77
1978	6.56	23.46	−0.07	−1.18	3.49	7.18	9.03
1979	18.44	43.46	−4.18	−1.23	4.09	10.38	13.31
1980	32.42	39.88	−2.76	−3.95	3.91	11.24	12.40
1981	−4.91	13.88	−1.24	1.86	9.45	14.71	8.94
1982	21.41	28.01	42.56	40.36	29.10	10.54	3.87
1983	22.51	39.67	6.26	0.65	7.41	8.80	3.80
1984	6.27	−6.67	16.86	15.48	14.02	9.85	3.95
1985	32.16	24.66	30.09	30.97	20.33	7.72	3.77
1986	18.47	6.85	19.85	24.53	15.14	6.16	1.13
1987	5.23	−9.30	−0.27	−2.71	2.90	5.47	4.41
1988	16.81	22.87	10.70	9.67	6.10	6.35	4.42
1989	31.49	10.18	16.23	18.11	13.29	8.37	4.65
1990	−3.17	−21.56	6.78	6.18	9.73	7.81	6.11
1991	30.55	44.63	19.89	19.30	15.46	5.60	3.06
1992	7.67	23.35	9.39	8.05	7.19	3.51	2.90
1993	9.99	20.98	13.19	18.24	11.24	2.90	2.75
1994	1.31	3.11	−5.76	−7.77	−5.14	3.90	2.67
1995	37.43	34.46	27.20	31.67	16.80	5.60	2.54
1996	23.07	17.62	1.40	−0.93	2.10	5.21	3.32
1997	33.36	22.78	12.95	15.85	8.38	5.26	1.70
1998	28.58	−7.31	10.76	13.06	10.21	4.86	1.61
1999	21.04	29.79	−7.45	−8.96	−1.77	4.68	2.68
2000	−9.11	−3.59	12.87	21.48	12.59	5.89	3.39
2001	−11.88	22.77	10.65	3.70	7.62	3.83	1.55
2002	−22.10	−13.28	16.33	17.84	12.93	1.65	2.38
2003	28.70	60.70	5.27	1.45	2.40	1.02	1.88
2004	10.87	18.39	8.72	8.51	2.25	1.20	3.26
2005	4.91	5.69	5.87	7.81	1.36	2.98	3.42
2006	15.80	16.17	3.24	1.19	3.14	4.80	2.54
2007	5.49	−5.22	2.60	9.88	10.05	4.66	4.08

The Market Benchmark and Firm Size

Although not restricted to include only the 500 largest companies, the S&P 500 is considered a large company index. The returns of the S&P 500 are capitalization weighted, which means that the weight of each stock in the index, for a given month, is proportionate to its market capitalization (price times number of shares outstanding) at the beginning of that month. The larger companies in the index therefore receive the majority of the weight. The use of the NYSE "Deciles 1–2" series results in an even purer large company index. Yet many valuation professionals are faced with valuing small companies, which historically have had different risk and return characteristics than large companies. If using a large stock index to calculate the equity risk premium, an adjustment is usually needed to account for the different risk and return characteristics of small stocks. This will be discussed further in Chapter 7 on the size premium.

The Risk-Free Asset

The equity risk premium can be calculated for a variety of time horizons when given the choice of risk-free asset to be used in the calculation. The 2008 *Ibbotson® Stocks, Bonds, Bills, and Inflation® Classic Yearbook* provides equity risk premia calculations for short-, intermediate-, and long-term horizons. The short-, intermediate-, and long-horizon equity risk premia are calculated using the income return from a 30-day Treasury bill, a 5-year Treasury bond, and a 20-year Treasury bond, respectively.

Although the equity risk premia of several horizons are available, the long-horizon equity risk premium is preferable for use in most business-valuation settings, even if an investor has a shorter time horizon. Companies are entities that generally have no defined life span; when determining a company's value, it is important to use a long-term discount rate because the life of the company is assumed to be infinite. For this reason, it is appropriate in most cases to use the long-horizon equity risk premium for business valuation.

20-Year versus 30-Year Treasuries

Our methodology for estimating the long-horizon equity risk premium makes use of the income return on a 20-year Treasury bond; however, the Treasury currently does not issue a 20-year bond. The 30-year bond that the Treasury recently began issuing again is theoretically more correct due to the long-term nature of business valuation, yet Ibbotson Associates instead creates a series of returns using bonds on the market with approximately 20 years to maturity. The reason for the use of a 20-year maturity bond is that 30-year Treasury securities have only been issued over the relatively recent past, starting in February of 1977, and were not issued at all through the early 2000s.

The same reason exists for why we do not use the 10-year Treasury bond; that is, a long enough history of market data is not available for 10-year bonds. We have persisted in using a 20-year bond to keep the basis of the time series consistent.

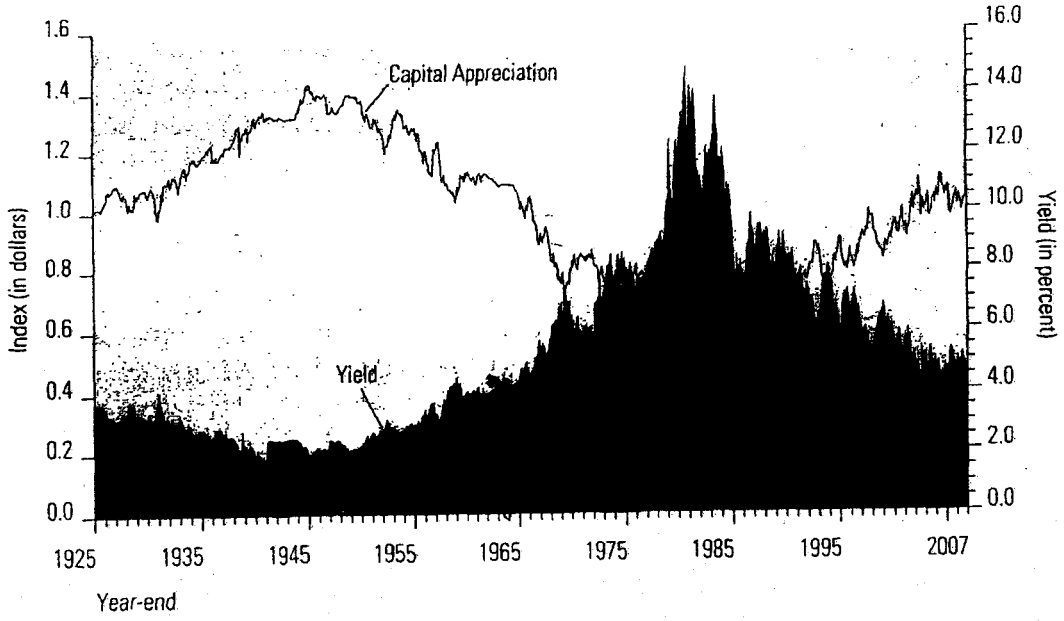
Income Return

Another point to keep in mind when calculating the equity risk premium is that the income return on the appropriate-horizon Treasury security, rather than the total return, is used in the calculation. The total return is comprised of three return components: the income return, the capital appreciation return, and the reinvestment return. The income return is defined as the portion of the total return that results

from a periodic cash flow or, in this case, the bond coupon payment. The capital appreciation return results from the price change of a bond over a specific period. Bond prices generally change in reaction to unexpected fluctuations in yields. Reinvestment return is the return on a given month's investment income when reinvested into the same asset class in the subsequent months of the year. The income return is thus used in the estimation of the equity risk premium because it represents the truly riskless portion of the return.[2]

Yields have generally risen on the long-term bond over the 1926–2007 period, so it has experienced negative capital appreciation over much of this time. This trend has turned around since the 1980s, however. Graph 5-2 illustrates the yields on the long-term government bond series compared to an index of the long-term government bond capital appreciation. In general, as yields rose, the capital appreciation index fell, and vice versa. Had an investor held the long-term bond to maturity, he would have realized the yield on the bond as the total return. However, in a constant maturity portfolio, such as those used to measure bond returns in this publication, bonds are sold before maturity (at a capital loss if the market yield has risen since the time of purchase). This negative return is associated with the risk of unanticipated yield changes.

Graph 5-2
Long-term Government Bond Yields versus Capital Appreciation Index
1925–2007



2 Please note that the appropriate forward-looking measure of the riskless rate is the yield to maturity on the appropriate-horizon government bond. This differs from the riskless rate used to measure the realized equity risk premium historically. Chapter 4 includes a thorough discussion of riskless rate selection in this context.

For example, if bond yields rise unexpectedly, investors can receive a higher coupon payment from a newly issued bond than from the purchase of an outstanding bond with the former lower-coupon payment. The outstanding lower-coupon bond will thus fail to attract buyers, and its price will decrease, causing its yield to increase correspondingly, as its coupon payment remains the same. The newly priced outstanding bond will subsequently attract purchasers who will benefit from the shift in price and yield; however, those investors who already held the bond will suffer a capital loss due to the fall in price.

Anticipated changes in yields are assessed by the market and figured into the price of a bond. Future changes in yields that are not anticipated will cause the price of the bond to adjust accordingly. Price changes in bonds due to unanticipated changes in yields introduce price risk into the total return. Therefore, the total return on the bond series does not represent the riskless rate of return.The income return better represents the unbiased estimate of the purely riskless rate of return, since an investor can hold a bond to maturity and be entitled to the income return with no capital loss.

Arithmetic versus Geometric Means

The equity risk premium data presented in this book are arithmetic average risk premia as opposed to geometric average risk premia. The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.

The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods. Graph 5-3 shows the realized equity risk premium for each year based on the returns of the S&P 500 and the income return on long-term government bonds. (The actual, observed difference between the return on the stock market and the riskless rate is known as the realized equity risk premium.) There is considerable volatility in the year-by-year statistics. At times the realized equity risk premium is even negative.

FENNEMORE CRAIG
Norman D. James (No. 006901)
Jay L. Shapiro (No. 014650)
3003 N. Central Ave.
Suite 2600
Phoenix, Arizona 85012
Attorneys for Chaparral City Water Company

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: W-02113A-07-_____

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AZ CORP COMMISSION
DOCKET CONTROL

DIRECT TESTIMONY OF

THOMAS J. BOURASSA

(COST OF CAPITAL)

EXHIBIT
A-19
ADMITTED

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I. INTRODUCTION AND QUALIFICATIONS.

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ARE YOU THE SAME THOMAS J. BOURASSA THAT FILED DIRECT TESTIMONY ON RATE BASE, INCOME STATEMENT, REVENUE REQUIREMENT AND RATE DESIGN IN THIS DOCKET?

A. Yes, and all of my background information and testimony regarding my qualifications is contained in that portion of my direct testimony.

II. SUMMARY OF TESTIMONY AND THE PROPOSED COST OF CAPITAL FOR THE COMPANY.

Q. WHAT IS THE PURPOSE OF THIS PORTION OF YOUR DIRECT TESTIMONY?

A. This portion of my direct testimony will focus on cost of capital issues. I will testify in support of the Company's proposed rate of return on its fair value rate base. I am sponsoring the Company's D Schedules, which are attached to this testimony. Also attached to this testimony are Exhibits D-1 through D-6, which are discussed below. As noted above, I am also sponsoring direct testimony that addresses the Company's rate base, its income statement (revenue and operating expenses), its required increase in revenue, and its rate design and proposed rates and charges for service. For the convenience of the Commission and the parties, that testimony and my related schedules are being filed separately in this case.

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COST OF DEBT AND EQUITY, AND YOUR RECOMMENDED RATE OF RETURN ON RATE BASE.

A. At the end of the test year, December 31, 2006, CCWC had adjusted total capital of

$35,267,476, consisting of $1,400,000 short-term debt, $6,865,000 long-term debt and $27,002,476 common equity, as shown in Schedule D-1. Thus, the Company's capital structure consisted of 23.44 percent debt and 76.56 percent common equity. The Company's cost of short-term debt is 6.11 percent, which is based on the short-term borrowing cost of its parent, American States Water. The Company's cost of long-term debt is 5.33 percent, which I computed as shown on Schedule D-2. I am recommending a return on equity of 10.5 percent. My recommendation is based on (i) cost of equity estimates using constant growth and multi-stage growth discounted cash flow ("DCF") models and the capital asset pricing model ("CAPM") for the sample group of publicly traded utilities, and (ii) my review of the economic conditions expected to prevail during the period in which new rates will be in effect. This results in a weighted cost of capital of 9.32 percent, as shown on Schedule D-1. The weighted cost of capital is applied to the Company's fair value rate base to compute the Company's required operating income.

Q. IS THERE A RELATIONSHIP BETWEEN A UTILITY'S CAPITAL STRUCTURE AND ITS COST OF CAPITAL?

A. Generally, when a firm engages in debt financing, it exposes itself to risks that, once debt becomes significant relative to the total capital structure, increase in a geometric fashion compared to the linear percentage increase in the debt ratio itself. This risk is illustrated by considering the effect of leverage on net earnings. For example, as leverage increases, the equity ratio falls. This creates two adverse effects on the investor. First, equity earnings decline rapidly and may even disappear. Second, the "cushion" of equity protection for debt falls. A decline in the protection afforded debt holders, or the possibility of a serious decline in debt protection, will act to increase the cost of debt financing. Therefore, one may conclude that each new financing, whether through debt or equity, impacts the

marginal cost of future financing by any alternative method. For a firm already perceived as being over-leveraged, this additional borrowing would cause the marginal cost of both equity and debt to increase. On the other hand, if the same firm instead employed equity funding, this could actually reduce the real marginal cost of additional borrowing, even if the particular equity issuance occurred at a higher unit cost than an equivalent amount of debt.

Q. DOES THE COMPANY HAVE AN APPROPRIATE CAPITAL STRUCTURE GIVEN ITS SIZE AND OTHER CHARACTERISTICS?

A. The theoretical optimum ratio of debt to equity in the capital structure will vary considerably from one industry to another and, to a very significant extent, among companies within a given industry, based on the size of the company and its ability (or inability) to attract capital. A theoretically "balanced" capital structure is one that provides debt with adequate protection, yet contains enough leverage to produce equity earnings sufficient to attract new equity capital (but not so large a degree of leverage as to introduce earnings instability and render equity investment speculative). For small utilities, financial leverage often has detrimental impacts with very slight increases in expenses. As a consequence, small utilities like CCWC cannot support the same percentage of debt in their capital structure as a large, publicly traded utility. Thus, the amount of debt in CCWC's capital structure is reasonable, in my opinion, given its relatively small size and other firm-specific factors.

Q. PLEASE SUMMARIZE THE APPROACH YOU USED TO ESTIMATE THE COST OF EQUITY FOR THE COMPANY.

A. The cost of equity for CCWC cannot be estimated directly because CCWC's common stock is not publicly traded. Therefore, there is no market data for CCWC. Consequently, I applied the DCF models and CAPM models using data

from a sample of water utilities selected from the *Value Line Investment Survey*. There are six water utilities in my sample: American States Water, Aqua America, California Water, Connecticut Water, Middlesex Water, and SJW Corp. I selected these particular utilities because the Commission's Utilities Division ("Staff") has relied on data for these water utilities in a number of recent water and sewer utility rate cases. Computations of common equity returns using DCF and CAPM approaches are shown on Schedules D-4.9 through D-4.10 and Schedule D-4.13.

Using Staff's sample group, the DCF analyses indicate that a return on equity ("ROE") in the range of 8.9 percent to 12.3 percent is appropriate. The CAPM analysis, again using Staff's sample group, indicates that an ROE in the range of 11.4 percent to 11.5 percent is appropriate. These cost of equity analyses indicate that an ROE in the range of 10.1 percent to 11.9 percent is appropriate.

An ROE of 10.5 percent is within the range of the averages of the results produced by both types of equity cost estimates, and is conservative when CCWC's small size relative to the six water utilities in Staff's sample group and other business risks not captured by the market data are considered. A return of 10.5 percent is somewhat higher than the returns its parent, American States, through its subsidiary, Golden State Water, is experiencing in California. The higher return for CCWC takes into consideration the higher business risk in Arizona, especially as the result of Arizona regulation. As I will discuss below, there are significant differences in business risk between Arizona and California. *See* also Hanford DT at 4.

Q. HAVEN'T YOU CRITICIZED STAFF'S USE OF THE CAPM IN ESTIMATING THE COST OF EQUITY IN THE PAST?

A. Yes, in prior rate cases before the Commission. The shortcomings of the CAPM

have been widely discussed in academic circles.[1] The DCF also has serious shortcomings when the stock of a company is trading at prices substantially in excess of book value.[2] I will discuss the shortcomings of both the DCF and the CAPM later in my testimony. For now, suffice it to say that each model possesses its own way of examining investor behavior, and each model requires the exercise of considerable judgment on the reasonableness of the assumptions underlying them and on the inputs and proxies used. As Dr. Morin states, "No one individual method provides the necessary level of precision for determining a fair return, but each method provides useful evidence to facilitate the exercise of an informed judgment."[3]

Q. GIVEN THE CRITICISM OF THE CAPM, WHY HAVE YOU DECIDED TO NOW EMPLOY THAT MODEL IN YOUR COST OF EQUITY ANALYSES?

A. I have done so to reduce the number of issues in this case. Staff has employed the CAPM in a number of recent rate cases, and the Commission has accepted the CAPM as a means of estimating the cost of equity in those cases.

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[1] *See, e.g.*, Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives* (Summer 2004) 25-46.

[2] *See, e.g.*, Win Whitaker, "The Discounted Cash Flow Methodology: Its Use in Estimating a Utility's Cost of Capital," *Energy Law Journal* (1991) 265-290.

[3] Roger A. Morin, *New Regulatory Finance* (2006) 428.

III. OVERVIEW OF THE RELATIONSHIP BETWEEN RISK AND THE EXPECTED RETURN ON AN INVESTMENT.

Q. HOW IS THE COST OF EQUITY TYPICALLY ANALYZED?

A. Put simply, the cost of equity is the rate of return that equity investors expect to receive on their investment. Investors can choose to invest in many types of assets, not simply publicly traded stock. Each investment will have varying degrees of risk, ranging from relatively low risk assets, such as Treasury securities, to somewhat higher risk corporate bonds to even higher risk common stocks. As the level of risk increases, investors require higher returns on their investment. Finance models that are used to estimate the cost of equity often rely on this basic concept.

Q. CAN YOU ILLUSTRATE THE CAPITAL MARKET RISK-RETURN CONCEPT?

A. Yes. The following graph depicts the risk-return relationship that has become widely known as the Capital Market Line ("CML"). The CML illustrates in a general way the risk-return relationship.

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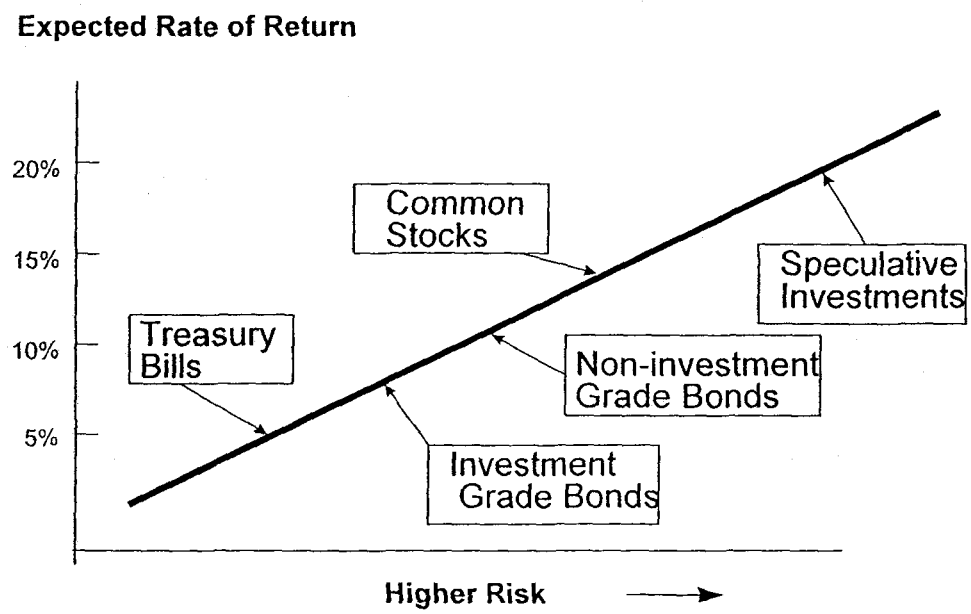
The Capital Market Line (CML)



The CML can be viewed as a continuum of the available investment opportunities for investors. Investment risk increases as one moves upward and to the right along the CML. As the risk of an investment increases, the expected return on the investment also increases.

Q. HOW DOES THE RISK-RETURN TRADE-OFF CONCEPT WORK IN THE CAPITAL MARKET?

A. As already suggested by the CML, the allocation of capital in a free market economy is based upon the relative risk of, and expected return from, an investment. In general, investors rank investment opportunities in the order of their relative risks. Investment alternatives in which the expected return is commensurate with the perceived risk become viable investment options. If all other factors remain equal, the greater the risk, the higher the rate of return investors will require to compensate investors for the possibility of loss of either the principal amount invested or the expected annual income from such investment.

Short-term Treasury bills provide a high degree of certainty and in nominal terms (after considering inflation) are considered virtually risk free. Long-term bonds and preferred stocks, having priority claims to assets and fixed income payments, are relatively low risk, but are not risk free. The market values of long-term bonds often fluctuate when government policies or other factors cause interest rates to change. Common stocks are higher and are to the right on the CML continuum because they are exposed to more risk. Common stock risk includes the nature of the underlying business and financial strength of the issuing corporation as well as market-wide factors, such as general changes in capital costs.

The capital markets reflect investor expectations and requirements each day through market prices. Prices for stocks and bonds change to reflect investor expectations and the relative attractiveness of one investment versus another. While the example provided above seems straightforward, returns on common stocks are not directly observable in advance, in contrast to debt or preferred stocks with fixed payment terms, and therefore they must be estimated from market data. Estimating the cost of equity capital is a matter of informed judgment about the relative risk of the company in question and the expected rate of return characteristics of other alternative investments.

Q. HOW IS THE COST OF EQUITY FOR A PARTICULAR UTILITY DETERMINED?

A. The estimation of a utility's cost of equity is a complex topic. It requires an analysis of the factors influencing the cost of various types of capital, such as interest on long-term debt, dividends on preferred stock, and earnings on common equity. The data for such an analysis comes from highly competitive capital markets, where the firm raises funds by issuing common stock, selling bonds, and by borrowing (both long- and short-term) from banks and other financial

institutions. In the capital markets, the cost of capital, whether the capital is in the form of debt or equity, is determined by two important factors:

1) The pure or real rate of interest, often called the risk-free rate of interest; and,

2) The uncertainty or risk premium (the compensation the investor requires over and above the real or pure rate of interest for subjecting his capital to additional risk).

Q. PLEASE DISCUSS THESE FACTORS IN GREATER DETAIL.

A. The pure rate of interest essentially reflects both the time preference for, and the productivity of, capital. From the standpoint of the individual, it is the rate of interest required to induce the individual to forgo present consumption and offer the funds thus saved to others for a specified length of time. Moreover, the pure rate of interest concept is based on the assumption that no uncertainty affects the investment undertaken by the individual, i.e., there is no doubt that the periodic interest payments will be made and the principal returned at the end of the time period. In reality, investments without risk do not exist. Every commitment of funds involves some degree of uncertainty.

Turning to the second factor affecting the cost of capital, it is generally accepted that the higher the degree of uncertainty, the higher the cost of capital. Investors are regarded as risk adverse and require that the rate of return increase as the risk (uncertainty) associated with an investment increase.

Q. CAN YOU PROVIDE SOME PERSPECTIVE ON YOUR PREVIOUS DISCUSSION WITH RESPECT TO RETURNS ON COMMON STOCKS?

A. Yes. Conceptually,

Required Return for Common Stocks	=	Return on a risk-free asset	+	Risk Premium

where the risk premium investors require for common stocks will be higher than the risk premium they require for investment grade bonds. This relationship is depicted in the graph of the CML, above. As I will discuss later in this testimony, this concept is the basis of risk premium methods, such as the CAPM, that are used to estimate the cost of equity.

Q. WHAT HAS BEEN THE RECENT EXPERIENCE IN THE U.S. CAPITAL MARKETS?

A. In the past 10 years, inflation and capital market costs have generally declined. Interest rates have been lower than in previous decades. Inflation, as measured by the Consumer Price Index, has been at relatively low levels. The uneven pace of the economy kept consumer prices in check and resulted in low interest rates. Since the first quarter 2004, however, improving economic growth and concerns about inflation have led to fluctuating interest rates. The Federal Reserve began raising interest rates in June 2004 to address these concerns and has raised interest rates more than 17 times since then to their highest level since 2004.

The economic forecast data show that after months of steady decline earlier this year, economic growth appears to have stabilized. Following annualized real GDP growth of only 1.3 percent in the first quarter of 2007, consensus forecasts estimate real GDP growth of 2.3 percent for the second quarter and clear expectations for continuing economic growth. Expectations are that GDP growth will approach its trend rate by the beginning of 2008. In May, the Federal Open Market Committee ("FOMC") left interest rates unchanged noting that while economic growth had slowed, inflation remained the predominant risk to the economy. Consensus forecasts are that inflation is expected to slow, but core inflation is expected to be at or above current levels. Forecasters conclude that improving economic growth and sticky core inflation may keep FOMC policy

unchanged throughout the year.

The Federal Funds Rate for the first quarter of 2007 was 5.26 percent. The Prime Rate was 8.25 percent. The 10-year Treasury bond and 30-year Treasury bond yields for the first quarter were 4.68 percent and 4.80 percent, respectively. Baa investment grade bond yields for the first quarter were 5.59 percent.

More recent data suggest the 10-year Treasury bond and 30 year Treasury bond yields are on the rise. On July 12, 2007, for example, the 10-year Treasury bond and 30 year Treasury bond yields were 5.13 percent and 5.22 percent, respectively, while Baa (investment grade) bond yields were 6.72 percent.

Long range consensus forecasts of the yields of 10-year and 30-year Treasury bonds for 2009 and 2010 are 5.2 percent and 5.3 percent, respectively. Baa investment grade bond yields are forecast to reach 6.9 percent.

Q. IS THERE A RELATIONSHIP BETWEEN THE COST OF EQUITY AND INTEREST RATES?

A. Yes. The cost of equity moves in the same direction as interest rates. Rising interest rates indicate the cost of equity is also rising. The upward trend in interest rates discussed above is an important factor in estimating the cost of equity for a utility.

Q. IS CCWC AFFECTED BY THESE SAME MARKET UNCERTAINTIES AND CONCERNS?

A. Yes. Also, to varying degrees, all the water utilities in the sample group are affected by these market forces.

Q. WHAT ARE THE RECENT DEVELOPMENTS IN THE WATER UTILITY INDUSTRY AFFECTING UTILITY INVESTMENTS AND THE MARKET?

A. Although the water utilities in the sample have recently encountered a more favorable regulatory environment in many states, such as California, the water

utility industry is expected to confront increasing infrastructure demands. According to the *Value Line Investment Survey*, many utilities have infrastructures that are over 100 years old and in need of significant maintenance and, in some cases, massive renovation and replacement. In addition, the EPA continues to impose more stringent water quality and operational standards, such as new maximum contaminant levels for public drinking water systems. Additional operational requirements have also been imposed to address the threat of bio-terrorism on U.S. water systems. As infrastructure costs continue to climb, many smaller companies are at a serious disadvantage. Without sufficient resources to fund improvements to meet new and more stringent requirements, many smaller companies are being forced to sell to larger utilities, which have greater operational flexibility and resources, as well as access to capital.

Q. WOULD YOU PLEASE DISCUSS IN MORE DETAIL THE IMPACT OF RISK ON CAPITAL COSTS?

A. With reference to specific utilities, risk is often discussed as consisting of two separate types of risk: business risk and financial risk.

Business risk, the basic risk associated with any business undertaking, is the uncertainty associated with the enterprise's day-to-day operations. In essence, it is a function of the normal day-to-day business environment, both locally and nationally. Business risks include the condition of the economy and capital markets, the state of labor markets, regional stability, government regulation, technological obsolescence, and other similar factors that may impact demand for the business product and its cost of production. For utilities, business risk also includes the volatility of revenues due to abnormal weather conditions, degree of operational leverage, regulation, and regulatory climate. Put simply, the greater the degree of uncertainty regarding the various factors affecting a company's business,

the greater the risk of an investment in a company and the greater the compensation required by the investor.

Financial risk, on the other hand, concerns the distribution of business risk to the various capital investors in the utility. As I discussed earlier, permanent capital is normally divided into three categories: long-term debt, preferred stock, and common equity. Because common equity owners have only a residual claim on earnings after debt and preferred stockholders are paid, financial risk tends to be concentrated in that element of the firm's capital. Thus, a decision by management to raise additional capital by issuing additional debt concentrates even more of the financial risk of the utility in the common equity owners.

Although often discussed separately, the two types of risks are actually interrelated. Specifically, a common equity investor may seek to offset exposure to high financial risk by investing in a firm perceived to have a low degree of business risk. In other words, the total risk to an investor would be high if the enterprise was characterized as a high business risk with a large portion of its permanent capital financed with senior debt. To attract capital under these circumstances, the firm would have to offer higher rates of return to its common equity investors.

IV. THE CRITERIA THAT ARE USED TO DETERMINE WHETHER THE AUTHORIZED RATE OF RETURN IS JUST AND REASONABLE IN A "FAIR VALUE" CONTEXT.

Q. HAS THE UNITED STATES SUPREME COURT SET FORTH ANY CRITERIA THAT GOVERN THE RATE OF RETURN THAT A UTILITY'S RATES SHOULD PRODUCE?

A. Yes. In 1923, the Supreme Court set forth the following criteria for determining whether a rate of return is reasonable in *Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia*, 262 U.S. 679, 692-93 (1923):

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments on other business undertaking which are attended by corresponding risks and uncertainties .... The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties. A rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market, and business conditions generally.

In summary, under *Bluefield Water Works*:

(1) The rate of return should be similar to the return in businesses with similar or comparable risks;

(2) The return should be sufficient to ensure the confidence in the financial integrity of the utility; and

(3) The return should be sufficient to maintain and support the utility's credit.

In addition to being widely followed by courts and regulatory commissions, the Court's discussion of the criteria that should be used to determine a reasonable rate of return is important because *Bluefield Water Works* involved the application of the "fair value" standard, which is embodied in the Arizona Constitution. Thus, in discussing the criteria for determining a fair rate of return, the Court applied the rate of return, judged according to these criteria, to the current or "fair" value of the utility's plant and property devoted to public service.

Q. HOW HAVE THESE CRITERIA BEEN APPLIED IN REGULATORY PROCEEDINGS?

A. The application of the "reasonableness" criteria laid down by the Supreme Court cases has resulted in controversy. The typical method of computing the overall cost of capital is quite straightforward: it is the composite, weighted cost of the

various classes of capital (debt, preferred stock, and common equity), used by the utility. The weighting is done by calculating the proportion that each class of capital bears to total capital. However, there is no consensus regarding the best method of estimating the cost of equity capital. The increasing regulatory emphasis on objectivity in determining the rate of return has resulted in a proliferation of market-based finance models that are used in equity return determination. As will be discussed more fully below, however, none of these models introduced has been universally accepted.

Q. DOES THE FACT THAT ARIZONA LAW REQUIRES THAT THE COMMISSION FIND AND USE THE "FAIR VALUE" OF THE COMPANY'S PLANT AND PROPERTY AFFECT YOUR COST OF EQUITY ANALYSES?

A. No. The Supreme Court explained in *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 308-09 (1989), that the "fair value standard mimics the operation of the competitive market." In a competitive market, like the capital markets, an investor expects to earn a return on the current value of the asset in which he has invested, not simply a return on the asset's original cost. If the market value of the asset increases, the investor is entitled to the benefit of that appreciation. Consequently, in describing the "fair value" approach to setting rates, the Supreme Court explained in *Duquesne Light*:

> To the extent the utilities' investments in plants are good ones (because their benefits exceed their costs) they are rewarded with an opportunity to earn an "above-cost" return, that is, a fair return on the current "market value" of the plant. To the extent utilities' investments turn out to be bad ones (such as plants that are canceled and so never used and useful to the public), the utilities suffer because the investments have no fair value and so justify no return.

The market-based models that are currently employed to estimate the cost of cost of equity are consistent with the "fair value" standard. While one can quarrel about

the "best" methodology to employ, all of these models, including the DCF and CAPM, rely on publicly available financial data derived from the capital markets. By relying on these models, a market-based estimate of the cost of equity is appropriately matched with a market-based rate base. This approach satisfies the "fair value" standard by allowing the equity investor an opportunity to earn a reasonable return on the current value of the property in which he has invested, thus reflecting the increase (or decrease) in the value of the investment in accordance with the "fair value" standard.

V. THE ESTIMATED COST OF EQUITY FOR THE COMPANY.

A. The Publicly Traded Utilities That Comprise the Sample Group Used to Estimate the Company's Cost of Equity.

Q. PLEASE BRIEFLY DESCRIBE THE APPROACH YOU FOLLOWED IN YOUR COST OF CAPITAL ANALYSIS FOR CCWC.

A. As I have stated, estimating the cost of equity is a matter of informed judgment. The development of an appropriate rate of return for a regulated enterprise involves the determination of the level of risk associated with that enterprise and the determination of an appropriate return for that risk level. Practitioners employ various techniques that provide a link to actual capital market data and assist in defining the various relationships that underlie the equity cost estimation process.

Since CCWC is not publicly traded, the information required to directly estimate CCWC's cost of equity is not available. Accordingly, I used a sample group of water utilities to develop an appropriate cost of equity for CCWC. There are six water utilities included in the sample group: American States Water, Aqua America, California Water, Connecticut Water, Middlesex Water, and SJW Corp. All these companies are followed by the *Value Line Investment Survey*, and, as explained previously, these particular utilities have consistently been used by the

Staff to estimate the cost of equity in a number of recent water and sewer utility rate cases.

Q. ARE THE WATER UTILITIES IN YOUR SAMPLE DIRECTLY COMPARABLE TO CCWC?

A. No. However, they have enough similarity to provide a useful starting point for developing a cost of equity for CCWC. I emphasize "starting point" because CCWC is not publicly traded, nor is there market data available for smaller utilities, like CCWC, that can be used to develop cost of equity estimates. Nevertheless, all of the sample companies are regulated water utilities, and their primary source of revenues is from regulated services. While all of them primarily provide water service, some of the companies provide both water and wastewater services.

Q. DOES THE MARKET DATA PROVIDED BY THE WATER UTILITY SAMPLE CAPTURE ALL OF THE MARKET RISKS THAT CCWC MIGHT FACE IF IT WERE PUBLICLY TRADED?

A. In my opinion, no. First, as I stated, there is no comparable market data for utility companies the size of CCWC. The average revenue of the water utility sample companies is nearly 32 times that of CCWC and the average net plant of the water utility sample companies is nearly 44 times that of CCWC. Even the smallest company in the sample, Connecticut Water, has nearly 12 times the net plant of CCWC, and over 7 times CCWC's revenues.

Second, market data for the sample water utilities do not include data for water utilities primarily serving the Arizona market and is thus primarily subject to Arizona rate regulation. The Commission requires the use of historical test years with limited out-of-period adjustments. Moreover, current Commission policy strongly disfavors adjustment mechanisms that allow for prompt recovery of

increases in the cost of purchased water and power, in contrast to other jurisdictions. In short, the Commission's current policies make it difficult for water utilities to earn their authorized rates of return.

Q. HOW DOES THIS IMPACT CCWC?

A. CCWC faces the risk that unexpected changes in costs during the period in which new rates will be in effect will not be recovered without a costly and lengthy general rate case. The water sample is heavily weighted with utilities doing business in California. American States, California Water, and SJW Corp. are based in California and receive the bulk of revenues from utility service in that state. These utilities face less regulatory risk because the California Public Utilities Commission allows the use of future test years and balancing accounts for expenses such as purchased water and power. Aqua America, the largest water utility in the group, has operations in more than 10 states. As a result, Aqua America's systems are regulated by different state commissions and are less affected by unfavorable decisions and policies of a particular regulatory commission.

Q. PLEASE PROVIDE A GENERAL DESCRIPTION OF THE WATER UTILITIES IN YOUR SAMPLE.

A. Schedule D-4.1 lists the operating revenues and net plant for the six water utilities as reported by AUS Utility Reports (formerly C.A. Turner Utility Reports) and CCWC. In addition, below is a general description of each of the companies:

(1) American States Water primarily serves the California market through Southern California Water Company, which provides water services to over 1 million people within 75 communities in 10 counties in the State of California, primarily in Los Angeles, San Bernardino, and Oranges counties. It has one subsidiary serving the

Arizona market with approximately 13,000 customers in Fountain Hills and Scottsdale. Approximately 91 percent of American States revenues were derived from Southern California Water. Revenues for American States were over $268 million in 2006 and net plant was over $750 million at the end of 2006.

(2) Aqua America owns regulated utilities in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, Maine, Missouri, New York, and South Carolina, serving over 927,000 customers at the end of 2006. Revenues for Aqua America were over $533 million in 2006 and net plant was over $2.5 billion at the end of 2006.

(3) California Water Service Group owns subsidiaries in California, New Mexico, Washington, and Hawaii serving over 480,000 customers. The California operations account for over 95 percent of customers and over 96 percent of operating revenues. Revenues for California Water were over $334 million in 2006 and net plant was over $941 million at the end of 2006.

(4) Connecticut Water Services owns subsidiaries in Connecticut and Massachusetts serving over 87,000 customers. Revenues for Connecticut Water Service were over $46 million in 2006 and net plant was over $263 million at the end of 2006.

(5) Middlesex Water owns subsidiaries in New Jersey and Delaware serving over 84,000 customers and provides water service under contract to municipalities in central New Jersey to a population of over 267,000. Revenues for Middlesex Water were over $81 million in 2006 and net plant was over $310 million at the end of 2006.

(6) SJW Corp. owns San Jose Water, which provides water service in a 138 square mile area in San Jose, California, and surrounding communities. Revenues for SJW Corp were over $189 million in 2006 and net plant was over $506 million at the end of 2006.

Q. HOW DOES CCWC COMPARE TO THE SAMPLE WATER UTILITIES?

A. It is much smaller. At the end of the test year, CCWC had approximately 13,500 water utility customers. Its revenues totaled less than $8 million, and its net plant was approximately $18.5 million. And CCWC is not diversified. It has a relatively small service territory in Maricopa County with relatively low growth potential compared to the sample companies, and no alternative sources of revenue.

Q. BASED ON WHAT YOU HAVE JUST STATED, IT DOESN'T APPEAR THAT CCWC IS ACTUALLY COMPARABLE TO THE SAMPLE WATER UTILITIES.

A. For the reasons I have stated, a good argument could be made that CCWC is not comparable to the six publicly traded water utilities in the same group. Unfortunately, as I testified, the approaches commonly used to estimate a utility's cost of equity require market data, which is not available for smaller companies like CCWC. As a result, much larger, public companies must be used as proxies. This is an important factor to keep in mind, because the criteria established by the Supreme Court in decisions such as *Bluefield Water Works* require the use of comparable companies, i.e., companies that would be viewed by investors as having similar risks. A rational investor would not regard CCWC has having the same level of risk as Aqua America or even Connecticut Water. Consequently, the results produced by the DCF and CAPM methodologies, utilizing data for the sample utilities, likely understate the cost of equity for CCWC.

Q. YOU PREVIOUSLY DISCUSSED FINANCIAL RISK, WHICH IS RELATED TO A FIRM'S CAPITAL STRUCTURE. HOW DO THE CAPITAL STRUCTURES OF THE SAMPLE WATER UTILITIES COMPARE TO CCWC?

A. Schedule D-4.2 shows that the capital structure of CCWC contains ~~36.3~~ 23.4 percent debt and ~~63.7~~ 76.6 percent equity compared to the average of the water utility sample of 46.4 percent debt and 53.6 percent equity. Having less debt in its capital structure implies less financial risk than the water utility sample, which may offset the other factors that make CCWC more risky than the sample group. As I previously stated, however, smaller companies cannot support the same level of debt as larger companies. Consequently, one would not expect CCWC to have as much debt in its capital structure as the larger sample companies.

B. <u>Current Stocks Prices and Their Effect on Estimating the Cost of Equity.</u>

Q. DO YOU HAVE ANY GENERAL CONCERNS WITH THE DATA AVAILABLE TO MAKE COST OF EQUITY ESTIMATES FOR THE WATER UTILITIES?

A. Yes. Schedule D-4.3 shows that common stock prices have increased significantly during the past five years, and those increases have exceeded the average annual increases in dividends per share ("DPS"), earnings per share ("EPS") and book value per share. As a result, the current market-to-book ratio for the sample water utilities is approximately 2.5. *Value Line* (January 2004) has suggested that part of the reason for increases in the stock prices is consolidation in the water utility industry. In January 2004, *Value Line* advised investors to expect stock prices from an acquisition to be as much as four times book value. *Value Line* (April 2007) continues to advise investors to expect mergers and acquisitions.

Irrespective of investor merger and acquisition expectations, stock price growth has exceeded book growth and both stock price growth, and book growth have exceeded dividends and earnings growth. Schedule D-4.4 shows that common stock prices have had annual price increases during the past 10 years that have exceeded the annual increases in dividends per share, earnings per share, and book value per share. The market-to-book ratios of most publicly traded utilities, including the sample water utilities, have been well above 1.0 for a number of years, and there is no reason to expect those ratios to significantly change in the future, given continuing increases in the stock markets and overall economic conditions.

Q. WHAT IMPLICATIONS DOES THIS CIRCUMSTANCE HAVE ON ESTIMATING THE COST OF EQUITY USING THE SAMPLE WATER UTILITIES?

A. If investors have bid up prices for utility stocks in anticipation of a merger or acquisition, the stock prices will reflect the investor's expected premium at acquisition. This distorts the results produced by the DCF model by underestimating dividend yield, lowering the indicated equity cost.

Alternatively, investors may have bid up the prices for the water utility stocks because they expect increases in earnings and dividends in the future. In other words, investors expect the water utilities to be authorized, and to actually earn higher returns on equity. *Value Line* (April 2007), for example, has advised investors that the extremely consumer-conscious regulatory environments of the past several years and the corresponding delayed rate relief and unfavorable decisions appear to be at an end, especially in California. The April 2007 *Value Line* Water Utility Industry report states:

The [California Public Utilities Commission] is currently reviewing a

> general rate case petitioning for a water revenue adjustment mechanism ("RAM"), which would allow recovery of revenues when actual sales are lower than adopted sales assumed in a general rate case. This would remove volatility due to weather conditions and provide some revenue stability going forward.

This is good news for both the utility companies and investors. There is no doubt investor expectations are influenced by events such as these.

C. <u>Overview of the DCF and CAPM Methodologies.</u>

Q. PLEASE EXPLAIN THE GENERAL APPROACHES TO ESTIMATING THE COST OF CAPITAL.

A. There two broad approaches:

1) identify comparable-risk sample companies and estimate the cost of capital directly, and,

2) find the location of the CML and estimate the relative risk of the company that jointly determines the cost of capital.

The DCF model is an example of a method falling into the first general approach. It is a direct method, but uses only a subset of the total capital market evidence. The DCF model rests on the premise that the fundamental value of an asset (stock) is its ability to generate future cash flows to the owner of that asset (stock). I will explain the DCF model in more detail later. For now, the DCF is simply the sum of a stock's expected dividend yield and the expected long-term growth rate. Dividend yields are readily available, but long-term growth estimates are more difficult to obtain.

The CAPM is an example of a method falling into the second general approach. It uses information on all securities rather than a small subset. I will explain the CAPM in more detail later. For now, the CAPM is a risk-return relationship, often depicted graphically as the CML. The CAPM is the sum of a risk-free return and a risk premium.

Each of these two methods has their own way of measuring investor expectations. In the final analysis, cost of equity estimates are subjective and should be based on sound, informed judgment. I have applied several versions of the DCF, as well as two versions of the CAPM that I believe brackets the fair cost of equity capital for CCWC, without taking into account the additional risks that CCWC possesses.

D. <u>Explanation of the DCF Model and Its Inputs.</u>

Q. PLEASE EXPLAIN THE DCF METHOD OF ESTIMATING THE COST OF EQUITY.

A. The DCF model is based on the concept that the current price of a share of stock is equal to the present value of future cash flows from the purchase of the stock. In other words, the DCF model is an attempt to replicate the market valuation process that sets the price investors are willing to pay for a share of a company's stock. It rests on the assumption that investors rely on the expected returns (i.e., cash flow they expect to receive) to set the price of a security. The DCF model in its most general form is:

(1) $P_0 = CF_1/(1+k) + CF_2/(1+k)^2 + \ldots + CF_n/(1+k)^n$

where k is the cost of equity; n is a very large number; P_0 is the current stock price; and, $CF_1, CF_2, \ldots CF_n$ are all the expected future cash flows expected to be received in periods 1, 2, … n.

Equation (1) can be written to show that the current price (P_0) is also equal to

(2) $P_0 = CF_1/(1+k) + CF_2/(1+k)^2 + \ldots + P_t/(1+k)^t$

where P_t is the price expected to be received at the end of the period t. If the future price (P_t) included a premium (an expected increase in the stock price or capital gain), the price the investor would pay today in anticipation of receiving that

premium would increase. In other words, by estimating the cash flows from the purchase of a stock in the form of dividends and capital gains, we can calculate the investor's required rate of return, i.e., the rate of return an investor presumptively used in bidding the current price to the stock (P_0) to its current level.

Equation (2) is a Market Price version of the DCF model. As with the general form of the DCF model in equation (1), in the Market Price approach the current stock price (P_0) is the present value of the expected cash inflows. The cash flows are comprised of dividends and the final selling price of the stock. The estimated cost of equity (k) is the rate of return investors expect if they bought the stock at today's price, held the stock and received dividends through the transition period, and then sold it for price (P_t).

Q. CAN YOU PROVIDE AN EXAMPLE TO ILLUSTRATE THE MARKET PRICE VERSION OF THE DCF MODEL?

A. Yes. Assume an investor buys a share of common stock for $40. If the expected dividend during the coming year is $2.00, then the expected dividend yield is 5 percent ($2.00/$40 = 5.0 percent). If the stock price is also expected to increase to $43.00 after one year, this $3.00 expected gain adds an additional 7.5 percent to the expected total rate of return ($3.00/$40 = 7.5 percent). Thus, the investor buying the stock at $40 per share, expects a total return of 12.5 percent (5 percent dividend yield plus 7.5 percent price appreciation). The total return of 12.5 percent is the appropriate measure of the cost of capital because this is the rate of return that caused the investor to commit $40 of his capital by purchasing the stock.

I have provided a Market Price DCF model in Exhibit D-1 to illustrate the Market Price DCF model approach further. The model computes the implied rate of return from a stream of cash flows. The first cash flow is negative and is the purchase price of the stock. I used the spot price at July 12, 2007, as reported by

Yahoo Finance as the initial purchase price. The next series of cash flows are the expected dividends for the next four years. The final cash flow is the dividend in year 5 plus the expected selling price of the stock. The selling price of the stock is based on the historical 5-year average annual price growth for each of the stocks. The average implied rate of return is 16 percent.

Q. HOW DOES THE RESULT OF YOUR MARKET PRICE DCF COMPARE TO THE HISTORICAL COMPOUND ANNUAL MARKET RETURNS FOR THE WATER UTILITY SAMPLE?

A. As shown in Exhibit D-2, the average 5-year historical compound annual total market return for the water utility sample is over 14 percent. Despite the fact that the historical 5-year total market returns as well as the market price DCF indicate returns in the range of 14 to 16 percent, I do not rely on this method. I have instead used it to evaluate the reasonableness of the results produced by the other versions of my DCF model.

Q. PLEASE CONTINUE WITH YOUR DESCRIPTION OF THE DCF MODEL.

A. Under the assumption that future cash flows are expected to grow at a constant rate ("g"), equation (1) can be solved for k and rearranged into the simple form:

$$(3) \qquad k = CF_1/P_0 + g$$

where CF_1/P_0 is the expected dividend yield and g is the expected long term dividend (price) growth rate ("g"). The expected dividend yield is computed as the ratio of next period's expected dividend ("CF_1") divided by the current stock price ("P_0"). This form of the DCF model is known as the constant growth DCF model and recognizes that investors expect to receive a portion of their total return in the form of current dividends and the remainder through future dividends and capital (price) appreciation. A key assumption of this form of the model is that investors

expect that same rate of return (k) every year and that market price grows at the same rate as dividends. This has not been historically true for the water utility sample, as shown by the data shown in Schedules D-4.3 and D-4.4. As a result, estimates of long-term growth rates (g) should take this into account.

Q. HOW IS THE FORMULA FOR THE MULTI-STAGE DCF MODEL DERIVED?

A. Under the multi-stage growth DCF model, equation (1) is expanded to incorporate two or more growth rate periods and is written as:

$$(4)\ P_0 = CF_0(1+g_1)/(1+k) + \ldots + CF_0(1+g_2)^n/(1+k)^n + CF_0(1+g_t)^{(t+1)}/k-g_t)$$

where g_1, g_2, etc., represent growth rates for periods 1, 2, etc., and g_t represents the growth rate from period t to infinity. This version of the DCF model assumes that cash flow growth will occur at different rates for one or more periods and ultimately reach a terminal growth stage that continues indefinitely.

Q. ARE THERE ANY GENERAL CONCERNS ABOUT APPLYING THE DCF MODEL TO UTILITY STOCKS?

A. There are a number of reasons why caution must be used when applying the DCF model to utility stocks. First, as I have already discussed, the stock price and dividend yield component may be unduly influenced by structural changes such as mergers and acquisitions, which influence investor expectations. Second, the DCF model is based on a number of assumptions which may not be realistic given the current capital market environment. The traditional DCF model assumes that the stock price, book value, dividends, and earnings all grow at the same rate. This has not been historically true for the sample water utility companies. Third, the application of the DCF model produces estimates of the cost of equity that are consistent with investor expectations only when the market price of a stock and the stock's book value are approximately the same. The DCF model will understate

the cost of equity when the market-to-book ratio exceeds 1.0 and conversely will overstate the cost of equity when the market-to-book ratio is less than 1.0. The reason for this is that the market-derived return produced by the DCF is often applied to book value rate base by regulators. Fourth, the assumption of a constant growth rate may be unrealistic, and there may be difficulty in finding an adequate proxy for the growth rate. Historical growth rates can be downward biased as a result of the impact of acquisitions, mergers, unfavorable regulatory decisions, and even abnormal weather patterns.

Q. LET'S TURN TO THE SPECIFIC INPUTS USED IN YOUR DCF MODELS. WHAT DATA HAVE YOU USED TO COMPUTE THE DIVIDEND YIELD (CF_1/P_0) IN YOUR MODELS?

A. I used the spot price for each of stocks of the water utilities in the sample group on July 12, 2007 as reported by Yahoo Finance. The dividend is the expected 2007 dividend.

Q. EARLIER YOU TESTIFIED THAT STOCK PRICES HAVE BEEN INCREASING DUE TO STRUCTURAL CHANGES SUCH AS POTENTIAL MERGERS AND ACQUISITIONS. HOW DOES THIS IMPACT THE DIVIDEND YIELD?

A. The DCF model results will be negatively biased because the dividend yield (CF_1/P_0) is reduced by virtue of having a larger denominator, the stock price (P_0). This impact is not by itself problematic because the DCF model is intended to take into account changes in the stock price (upward or downward). Investors may have bid up the price of the stocks of the water utilities in the sample group because they expect increased growth in earnings and, as a result, increased dividend growth and appreciation in the price of the stock. However, if stock prices have been bid up in anticipation of a merger or an acquisition, then the DCF model estimate will not

reflect true market conditions and understate the cost of equity.

Q. WHAT MEASURES OF GROWTH ("g") HAVE YOU USED?

A. I have used earnings growth forecasts, where available, from three different, widely-followed sources: *Zack's Investment Research*, *Standard & Poor Earnings Guide*, and *Value Line Investment Survey*. Schedule D-4.6 reflects estimates of earnings growth. The currently available estimates from these three sources provide at least two estimates for each of the sample water utility companies. There are three estimates for the majority of the companies.

I have also used forecasts of book returns, retention ratios, and growth in the number of common shares from *Value Line* to determine sustainable growth estimates, which I describe in more detail below. Schedules D-4.7 and D-4.8 show my calculations of sustainable growth.

For the multi-stage DCF, I employed a two-stage model with short-term and long-term growth rates. I used analysts' forecasts of EPS growth for the near term and average long-term GDP growth for the long-term.

Q. DID YOU USE THE ARITHMETIC MEAN OR THE GEOMETRIC MEAN FOR GDP GROWTH?

A. The arithmetic mean. It is well established that if the cost of capital is estimated from historical data, an arithmetic average should be used. Dr. Morin, in his text on regulatory finance, provides a detailed explanation of why this is the case, citing various authorities, including Professors Brealey, Myers and Allen, authors of the leading graduate textbook on corporate finance.[4]

[4] Roger A. Morin, *New Regulatory Finance* (2006) 133-43.

Q. WHY DID YOU USE FORECASTED GROWTH RATES IN YOUR MODELS?

A. The DCF model requires estimates of growth that investors expect in the future. Accordingly, I used analysts' forecasts of growth. Logically, in estimating future growth, financial institutions and analysts have taken into account all relevant historical information on a company as well as other more recent information.[5] To the extent that past results provide useful indications of future growth prospects, analysts' forecasts would already incorporate that information. In addition, a stock's current price reflects known historic information on that company, including its past earnings history. Any further recognition of the past will double count what has already occurred. Therefore, forward-looking growth rates should be used.

Q. HAVE YOU COMPARED THE ANALYSTS' ESTIMATES OF GROWTH WITH HISTORICAL DATA?

A. Yes. As shown in Exhibit D-3, the average 5-year historical compound annual capital (price) appreciation is 11.68 percent. The average 10-year historical compound annual capital (price) appreciation is 14.86 percent. This is significantly higher than the average of the analysts' estimates of growth, 8.56 percent. While historical returns do not necessarily reflect what will occur in the future, the analysts' estimates of EPS growth are significantly less than the historical capital appreciation and the historical total returns. Thus, I believe using the analysts' estimates of EPS growth for the growth rate in the DCF model is conservative.

Q. WHY DIDN'T YOU USE FORECASTS OF DIVIDEND GROWTH?

A. The average annual forecast of DPS growth is extremely low. When forecasted

[5] David A. Gordon, Myron J. Gordon and Lawrence I Gould, "Choice Among Methods of Estimating Share Yield," *Journal of Portfolio Management* (Spring 1989) 50-55.

dividend growth is used in the DCF model, it produces a cost of equity below the cost of debt for two of the three sample water utility companies for which a forecasted growth rate is available. Only one cost of equity estimate is above the cost of debt. This single estimate for Aqua America is 11.6 percent.

Q. HAVE YOU PERFORMED CONSTANT GROWTH DCF ESTIMATES USING ANALYSTS' ESTIMATES OF DPS GROWTH?

A. Yes. Exhibit D-4, attached hereto, reflect constant growth DCF results using analysts' estimates of DPS growth. While the average result is 7.1 percent, two of the three estimates are well below 6.0 percent – one as low as 4.1 percent. These are less than the current yield on an investment grade bond, 6.7 percent.

Q. HAVE YOU PREPARED CONSTANT GROWTH DCF MODELS USING HISTORICAL DPS AND EPS GROWTH RATES?

A. Yes. Exhibit D-5, attached hereto, reflects constant growth DCF results using five-year historical annual growth rates for DPS. The DCF results using five-year historical annual growth rates using historical DPS growth is 5.9 percent – below the cost of debt. Four of the six estimates are significantly below the cost of debt, with the lowest being only 3.5 percent.

Exhibit D-6, attached hereto, reflects constant growth DCF results using five-year historical annual growth rates for DPS. The DCF results using five-year historical annual EPS growth rates is 11.0 percent after removing the negative growth rate for Connecticut Water. While I do not employ these growth rates in my DCF estimates, they produce indicated costs of equity ranging from 10.1 percent to 11.5 percent, and thus serve as a check on my DCF results.

Q. WHY HAVEN'T YOU INCLUDED ANALYSTS' FORECASTS OF DPS GROWTH AND HISTORICAL DPS GROWTH IN YOUR DCF ESTIMATE OF GROWTH?

A. Using analysts' forecasts of DPS growth and historical DPS growth results in returns which are unrealistic. It is important to keep in mind that there is a great deal of empirical evidence demonstrating that, on average, stocks are riskier than bonds and achieve higher returns. Morningstar (formerly Ibbotson Associates), for example, annually publishes its comprehensive study of historical returns on stocks and bonds.[6]

Putting aside the potential distortions to the result produced by the DCF model caused by structural changes to the industry and abnormal weather conditions, it does not make sense to employ grow rates that result in indicated equity returns less than the cost of debt, especially when those results fly in the face of a large body of empirical evidence. Investors would not bid up the price of a utility stock if the expected return is equivalent to returns on bonds and other debt investments. As the CML depicted previously illustrates, common stocks are higher and to the right of investment grade bonds on the CML continuum because they are riskier investments. Again, the empirical evidence supports this conclusion. The results using the analysts' expectations of DPS growth and historical DPS growth are unreasonable.

Q. YOU MENTIONED SUSTAINABLE GROWTH EARLIER. PLEASE EXPLAIN WHAT SUSTAINABLE GROWTH IS?

A. Sustainable growth is derived by combining the expected growth from future retained earnings and expected future growth from sales of common stock. The growth rate (g) becomes:

(5) $g = br + sv$

where b is the expected retention ratio; r is the expected return on common equity; s is the funds raised from the sale of stock as a fraction of existing common equity;

[6] Morningstar, *SBBI Valuation Edition 2006 Yearbook.*

and v is the fraction of funds raised from the sale of stock that accrues to shareholders.

Q. HOW DID YOU ESTIMATE "br" GROWTH?

A. I used projected rates of return, dividends per share, and earnings per share reported in *Value Line* to estimate "br" growth.

Q. HOW DID YOU ESTIMATE "sv" GROWTH?

A. I used *Value Line*'s projections of new issues of common stock to estimate "s" and reported books values and the spot price to estimate "v". All of the water utility stocks used in my sample are currently selling at prices above book value and thus have "sv" growth.

Q. HOW DO YOUR ESTIMATES FOR SUSTAINABLE GROWTH COMPARE TO THE HISTORICAL COMPOUND ANNUAL CAPITAL APPRECIATION RETURN?

A. The average sustainable growth for the utility sample as shown in Schedule D-4.7 is 6.39 percent, which is lower than the average 5-year and 10-year historical compound annual capital appreciation return of 11.68 percent and 14.86 percent, respectively.

E. <u>Explanation of the CAPM and Its Inputs.</u>

Q. PLEASE EXPLAIN THE CAPM METHODOLOGY FOR ESTIMATING THE COST OF EQUITY.

A. As I already indicated, the CAPM is a type of risk premium methodology that is often depicted graphically in a form identical to the CML. Put simply, the CAPM formula is the sum of a risk-free rate plus a risk premium. It quantifies the additional return required by investors for bearing incremental risk. The risk-free rate is the reward for postponing consumption by investing in the market. The risk premium is the additional return compensation for assuming risk.

The CAPM formula provides a formal risk-return relationship premised on the idea that only market risk matters, as measure by beta. The CAPM formula is:

$$(6) \quad k = R_f + \beta(R_m - R_f)$$

where k is the expected return, R_f is the risk-free rate, R_m is the market return, $(R_f - R_m)$ is the market risk premium, and β is beta.

The difficulty with the CAPM is that it is a prospective or forward-looking model while most of the capital market data required to match the input variables above is historical.

Q. WHAT IS THE RISK-FREE RATE?

A. It is the return on an investment with no risk. The U.S. Treasury rate serves as the basis for the risk-free rate because the yields are directly observable in the market and are backed by the U.S. government. Practically speaking, short-term rates are volatile, fluctuate widely and are subject to more random disturbances than long-term rates. In short, long-term Treasury rates are preferred for these reasons and because long-term rates are more appropriately matched to securities with an indefinite life or long-term investment horizon.

Q. WHAT IS BETA AND WHAT DOES IT MEASURE?

A. Beta is a measure of the relative risk of a security and the market. In other words, it is a measure of the sensitivity of a security to the market as a whole. This sensitivity is also known as systematic risk. It is estimated by regressing a security's excess returns against a market portfolio's excess returns. The slope of the regression line is the beta.

Beta for the market is 1.0. A security with a beta greater than 1.0 is considered riskier than the market. A security with a beta less than 1.0 is considered less risky than the market.

There are computational problems surrounding beta. It depends on the

return data, the time period used, its duration, the choice of the market index, and whether annual, monthly, or weekly return figures are used. Betas are estimated with error. Based on empirical evidence, high betas will tend to have a positive error (risk is overestimated) and low betas will have a negative error (risk is underestimated).[7]

Q. WHAT DID YOU USE AS THE PROXY OF THE BETA FOR CCWC?

A. I used the average beta of the sample water utility companies. Betas were obtained from *Value Line* (April 27, 2007), which is source for estimated betas that Staff has used in a number of recent rate cases. The average beta as shown on Schedule D-4.12 is 0.84. In the past few years, beta for the sample water utility companies has increased significantly, indicating an upward trend. I should note that because CCWC is not publicly traded, CCWC has no beta. I believe that CCWC, if it were publicly traded, would have a higher beta than the sample water utility companies.

Q. PLEASE EXPLAIN THE MARKET RISK PREMIUM?

A. The market-risk premium (R_m-R_f) is the return an investor expects to receive as compensation for market risk. It is the expected market return minus the risk-free rate. Approaches for estimating the market risk premium can be historical or prospective.

Since expected returns are not directly observable, historical realized returns are often used as a proxy for expected returns on the basis that the historical market risk premium follows what is known in statistics as a "random walk." If the historical risk premium does follow the random walk, then one should expect the risk premium to remain at its historical mean. Based on this argument, the best estimate of the future market risk premium is the historical mean. Morningstar's

[7] Eugene F. Fama and Kenneth R. French, "The Capital Asset Pricing Model: Theory and Evidence," *Journal of Economic Perspectives* (Summer 2004) 25-46.

SBBI Valuation Edition 2006 Yearbook provides historical market returns for various asset classes from 1926 to the present. This publication also provides market risk premiums over U.S. Treasury bonds, which makes it an excellent source for historical market risk premiums.

The prospective market risk premium estimation approach necessarily examines the returns expected from common equities and bonds. It can be extremely volatile, especially when examining very short periods of time. When such methods are shown to be volatile, they should be avoided. One method employs applying the DCF model to a representative market index such as the S&P 500 index or the *Value Line* Composite Index. The expected return from the DCF is measured for a number of periods of time, and then subtracted from the prevailing risk-free rate for each period to arrive at market risk premium for each period. The market risk premium subsequently employed in the CAPM is the average market risk premium of the overall period.

Q. HOW MANY MARKET RISK PREMIUM ESTIMATES DID YOU PREPARE IN CONNECTION WITH YOUR ASSIGNMENT FOR CCWC?

A. I prepared two market risk premium estimates: An historical market risk premium and a current market risk premium.

Q. HOW DID YOU ESTIMATE THE HISTORICAL MARKET RISK PREMIUM?

A. I used the Morningstar's *SBBI Valuation Edition 2006 Yearbook* measure of the average premium of the market over intermediate-term treasury securities from 1926 through 2006. The average historical market risk premium over intermediate-term treasury securities is 7.6 percent.

Q. HOW DID YOU ESTIMATE THE CURRENT MARKET RISK PREMIUM?

A. I derived a market risk premium by, first, using the DCF model to compute an

expected market return for each of the past 10 months using *Value Line's* projections of the average dividend yield and average price appreciation (growth) on the *Value Line* Composite Index. I then subtracted the average 30-year Treasury yield for each month from the expected market returns to arrive at the expected market risk premiums. Finally, I averaged the computed market risk premiums to determine the current market risk premium. The data and computations are shown on Schedule D-4.13. The average market risk premium is 7.34 percent.

Q. WHY DIDN'T YOU USE A FULL 12 MONTHS OF DATA TO ESTIMATE THE EXPECTED MARKET RISK PREMIUM?

A. The availability of data is currently limited. I will have more data as the case progresses, and I will provide a revised estimate that is based on a full 12 months of data. Even 10 months worth of data is far better than Staff's approach. Staff typically computes a market risk premium based on a single point in time, which makes estimates extremely volatile, so much so that the expected market risk premium estimate can change by as much as 300 basis points (or more) each time it is estimated. The accuracy of the expected risk premium is greatly enhanced by increasing the number of periods used to estimate it. It is analogous to flipping a coin. One cannot predict with any degree of accuracy the result of a single flip of a balanced coin, or even a few. But the more coin flips, the greater degree of confidence one has in predicting the outcome.

Q. WHY DID YOU USE THE 30-YEAR TREASURY AS OPPOSED TO THE 5, 7, OR EVEN 10 YEAR TREASURIES IN COMPUTING YOUR EXPECTED MARKET RISK PREMIUMS?

A. To properly match the risk-free rate (based on the 30-year Treasury rate) with the expected market risk premium I used in the current market risk premium CAPM.

F. The Results of the DCF and CAPM Models, and Recommended ROE for CCWC.

Q. PLEASE DISCUSS YOUR ANALYSIS OF THE COST OF EQUITY FOR CCWC.

A. In the first part of my analysis, I applied two versions of the constant growth DCF and a two-stage DCF models to the six water utilities in the sample group. The DCF analyses appear on Schedules D-4.9, D-4.10, and D-4.11. The DCF models produce an indicated equity cost in the range of 8.9 percent to 12.3 percent.

In the second part of my analysis, I applied two versions of the CAPM – an historical risk premium CAPM and a current market risk premium CAPM. The CAPM analyses appear on Schedule D-4.13 and produce an indicated cost of equity in the range of 11.4 percent to 11.5 percent.

Q. PLEASE SUMMARIZE YOUR RESULTS.

A. The following table summarizes the results of the models I have used:

	Range	Midpoint
DCF Constant Growth (earnings growth)	9.2% - 13.6%	11.4%
DCF Constant Growth (sustainable growth)	8.1% - 10.9%	9.5%
Two-Stage Growth Model	9.3% - 12.4%	10.9%
DCF Average Results	**8.9% - 12.3%**	**10.6%**
CAPM Historical MRP		11.5%
CAPM Current MRP		11.4%
Average CAPM Results	**11.4%-11.5%**	**11.4%**
Average Overall Results	**10.1%-11.9%**	**11.0%**

Based on the DCF and CAPM results, and with consideration of current market, industry, and other factors relevant to smaller utilities like CCWC, I believe a return on equity of 10.5 percent is conservative. CCWC has a higher cost

of equity than the water utility sample group due to its relatively smaller size and higher business and operational risks. At 10.5 percent, my recommended cost of equity is in the lower end of the range of the estimates produced by the DCF and CAPM models. My recommendation represents a reasonable balance between the economic forecasts of interest rates during the period in which the rates will be in effect, the reduced equity costs obtained from low dividend yields using the DCF model, and my judgment about CCWC's additional risks not captured by the market models for utility companies like CCWC.

Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

D SCHEDULES

Chaparral City Water Company
Test Year Ended December 31, 2006
Summary of Cost of Capital

Exhibit
Schedule D-1
Page 1
Witness: Bourassa

Line No.	Item of Capital	End of Test Year Dollar Amount	End of Test Year Percent of Total	End of Test Year (e) Cost Rate	End of Test Year Weighted Cost	End of Projected Year Dollar Amount	End of Projected Year Percent of Total	End of Projected Year (e) Cost Rate	End of Projected Year Weighted Cost
1	Short-Term Debt	$ 1,400,000	3.97%	6.11%	0.24%	$ 1,400,000	3.90%	6.11%	0.24%
2									
3	Long-Term Debt	6,865,000	19.47%	5.33%	1.04%	$ 6,585,000	18.34%	5.34%	0.98%
4									
5	Stockholder's Equity (1)(2)(3)	27,002,476	76.56%	10.50%	8.04%	29,312,972	81.66%	10.50%	8.57%
6									
7	Totals	$ 35,267,476	100.00%		9.32%	$ 35,897,972	100.00%		9.55%
8									
9									
10	**(1) Increased for unrecorded amortization of CIAC of**	**$ 69,834**	**. See B-2 page 5.**						
11	**(2) Decreased for accumulated depreciation adjustment**	**$ (526,538)**	**. See B-2 page 2.**						
12	**(3) Increased for CAP Acquisition**	**$ 1,280,000**	**. See B-2 page 8.**						
13									
14									
15	SUPPORTING SCHEDULES:								
16	D-1								
17	D-3								
18	D-4								
19	E-1								
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35									

RECAP SCHEDULES:
A-3

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Long Term Debt

Exhibit
Schedule D-2
Page 1
Witness: Bourassa

Line No.	Description of Debt	End of Test Year Amount Outstanding	End of Test Year Annual Interest	End of Test Year Interest Rate	End of Test Year Weighted Cost	End of Projected Year Amount Outstanding	End of Projected Year Annual Interest	End of Projected Year Interest Rate	End of Projected Year Weighted Cost
1									
2	Series 1997A serial bonds, due 1998 to 2007 (4% to 4.85%)	240,000	11,040	4.60%	0.16%	-	-	4.60%	0.00%
3	Series 1997A term bonds, due Dec. 2011 (5.20%)	1,000,000	52,000	5.20%	0.76%	960,000	49,920	5.20%	0.76%
4	Series 1997A term bonds, due Dec. 2022 (5.40%)	4,610,000	248,940	5.40%	3.63%	4,610,000	248,940	5.40%	3.78%
5	Series 1997B term bonds, due Dec. 2022 (5.30%)	1,015,000	53,795	5.30%	0.78%	1,015,000	52,780	5.20%	0.80%
6									
7									
8									
9									
10									
11									
12									
13	Totals	$ 6,865,000	365,775		5.33%	$ 6,585,000	351,640		5.34%
14									
15	Supporting Schdules:								
16	E-2								
17									
18									
19									
20									
21									

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Preferred Stock

Exhibit
Schedule D-3
Page 1
Witness: Bourassa

Line No.	Description of Issue	End of Test Year Shares Outstanding	End of Test Year Amount	End of Test Year Dividend Requirement	End of Projected Year Shares Outstanding	End of Projected Year Amount	End of Projected Year Dividend Requirement
1							
2							
3	NOT APPLICABLE, NO PREFERRED STOCK ISSUED OR OUTSTANDING						
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17	SUPPORTING SCHEDULES:			RECAP SCHEDULES:			
18	(a) E-1			(a) D-1			
19							
20							

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Common Equity

Exhibit
Schedule D-4
Page 1
Witness: Bourassa

Line No.	
1	
2	The Company is proposing a cost of common equity of 10.5%.
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	SUPPORTING SCHEDULES: RECAP SCHEDULES:
18	(a) E-1 (a) D-1
19	
20	

Chaparral City Water Company
Summary of Results

Exhibit
Schedule D-4.0
Witness: Bourassa

Line No.		Low	High	Midpoint
1	DCF Constant Growth	9.2%	13.5%	11.4%
2	DCF Sustainable Growth	8.1%	10.9%	9.5%
3	DCF Two-Stage	9.3%	12.4%	10.9%
4				
5	Average DCF Results	**8.9%**	**12.3%**	**10.6%**
6				
7	CAPM Historial MRP			11.5%
8	CAPM Current MRP			11.4%
9				
10	Average CAPM Results	**11.4%**	**11.5%**	**11.4%**
11				
12	Average Overall Results	**10.1%**	**11.9%**	**11.0%**
13				
14				
15				
16				
17				
18				
19				
20				
21				

Chaparral City Water Company
Selected Characteristics of Water Utilities

Exhibit
Schedule D-4.1
Witness: Bourassa

Line No.		% Water Revenues	Operating Revenues (millions)	Net Plant (millions)	S&P Bond Rating	Moody's Bond Rating
1						
2						
3						
4	1. American States	83%	$ 262.8	$ 658.9	A-	A2
5	2. Aqua America	84%	$ 552.8	$ 2,254.5	AA-	NR
6	3. California Water	97%	$ 341.1	$ 842.5	NR	A2
7	4. Connecticut Water	89%	$ 56.9	$ 216.8	AAA	NR
8	5. Middlesex	89%	$ 81.1	$ 282.7	A	NR
9	6. SJW Corp.	95%	$ 194.5	$ 601.8	NR	NR
10						
11	Average	90%	$ 248.2	$ 809.5		
12						
13	Chaparral City Water Company	100%	$ 7.4	$ -	NR	NR
14						
15	Source: AUS Utility Reports (May 2007)					

Chaparral City Water Company
Capital Structures of Water Utilities December 2006

Exhibit
Schedule D-4.2
Witness: Bourassa

No.		Book Value		Market Value	
1		Long-Term	Common	Long-Term	Common
2		Debt	Equity	Debt	Equity
3					
4	1. American States	48.6%	51.4%	30.1%	69.9%
5	2. Aqua America	50.8%	49.2%	24.0%	76.0%
6	3. California Water	43.3%	56.7%	27.1%	72.9%
7	4. Connecticut Water	44.4%	55.6%	27.4%	72.6%
8	5. Middlesex	49.5%	50.5%	34.7%	65.3%
9	6. SJW Corp.	41.8%	58.2%	21.0%	79.0%
10					
11	Average	46.4%	53.6%	27.4%	72.6%
12					
13	Chaparral City Water Company	23.4%	76.6%	N/A	N/A
14					
15					
16	Sources:				
17	Zacks Investment Research				
18					
19					
20					

Chaparral City Water Company
Comparisons of Past and Future Estimates of Growth

Exhibit
Schedule D-4.3
Page 1
Witness: Bourassa

Line No.		Company	Five-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth*
7	1.	American States	14.33%	4.71%	0.90%	Negative	6.67%
8	2.	Aqua America	13.45%	10.90%	8.45%	6.54%	9.17%
9	3.	California Water	14.16%	7.17%	0.53%	7.35%	7.50%
10	4.	Connecticut Water	-2.03%	4.63%	1.46%	Negative	10.00%
11	5.	Middlesex	5.41%	6.67%	1.86%	4.44%	8.00%
12	6.	SJW Corp.	24.77%	8.83%	5.27%	9.24%	10.00%
15		GROUP AVERAGE	11.68%	7.15%	3.08%	6.89%	8.56%
16		GROUP MEDIAN	13.81%	6.92%	1.66%	6.94%	8.58%

18 * See Schedule D-4.5
19 Sources:
20 Value Line Data
21 Yahoo Finance

Chaparral City Water Company

Comparisons of Past and Future Estimates of Growth

Exhibit
Schedule D-4.4
Page 1
Witness: Bourassa

Line No.		Company	Ten-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth*
7	1.	American States	14.63%	4.22%	1.05%	1.64%	6.67%
8	2.	Aqua America	19.28%	9.97%	6.94%	8.84%	9.17%
9	3.	California Water	11.32%	4.13%	1.01%	Negative	7.50%
10	4.	Connecticut Water	9.88%	3.75%	1.24%	Negative	10.00%
11	5.	Middlesex	12.89%	5.05%	2.14%	3.17%	8.00%
12	6.	SJW Corp.	21.15%	5.65%	3.94%	2.17%	10.00%
15		GROUP AVERAGE	14.86%	5.46%	2.72%	3.96%	8.56%
16		GROUP MEDIAN	13.76%	4.63%	1.69%	2.67%	8.58%

* See Schedule D-4.5

Sources:

Value Line Data

Yahoo Finance

Chaparral City Water Company
Analysts Forecasts of Earnings Per Share Growth

Exhibit
Schedule D-4.5
Witness: Bourassa

Line No.		Company	(1) Zacks	(2) S&P	(3) Value Line	(4) Average Growth (G) (Cols 1-3)
			EPS GROWTH			
7	1.	American States	5.00%	6.00%	9.00%	6.67%
8	2.	Aqua America	10.00%	10.00%	7.50%	9.17%
9	3.	California Water	8.00%	8.00%	6.50%	7.50%
10	4.	Connecticut Water	10.00%		10.00%	10.00%
11	5.	Middlesex	8.00%	8.00%	8.00%	8.00%
12	6.	SJW Corp.	10.00%	10.00%	10.00%	10.00%
15		GROUP AVERAGE	8.50%	8.40%	8.50%	8.56%
16		GROUP MEDIAN				8.58%

Sources:
Value Line Investment Analyzer July 12, 2007
Zacks Investment Research Site July 12, 2007
S&P Earnings Guide June 2007

Exhibit
Schedule D-4.6
Witness: Bourassa

Chaparral City Water Company
Estimates of Sustainable Growth

Line No.		(1)	(2)	(3)	(4)	(5)
1						
2						
3						Average
4						Sustainable
5		Retention	Rate	br	sv	Growth
6	Company	Ratio	of Return	Growth	Growth	(Cols 3+4)
7	1. American States	0.48	9.00%	4.35%	3.94%	8.29%
8	2. Aqua America	0.33	11.50%	3.83%	1.02%	4.86%
9	3. California Water	0.44	10.00%	4.42%	1.60%	6.02%
10	4. Connecticut Water					
11	5. Middlesex					
12	6. SJW Corp.					
13						
14						
15	GROUP AVERAGE	0.42	10.17%	4.20%	2.19%	6.39%
16	GROUP MEDIAN	0.44	10.00%	4.35%	1.60%	6.02%
17						
18	Sources:					
19	Value Line Data					
20						
21						
22						
23						

Exhibit
Schedule D-4.7
Witness: Bourassa

Chaparral City Water Company
Estimates of sv Growth

Line No.		(1)	(2)	(3)	(4)
	Company	Stock Financing Rate	Current Market to Book Ratio	v	sv Growth
1.	American States	7.23%	2.20	0.55	3.94%
2.	Aqua America	1.42%	3.59	0.72	1.02%
3.	California Water	2.72%	2.43	0.59	1.60%
4.	Connecticut Water				na
5.	Middlesex				na
6.	SJW Corp.				na
	GROUP AVERAGE	3.79%	2.74	0.62	2.19%
	GROUP MEDIAN	2.72%	2.43	0.59	1.60%

Sources:
Value Line Data

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Projected EPS Growth

Exhibit
Schedule D-4.8
Witness: Bourassa

Line No.		Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) (a) EPS Growth (g)	(5) Indicated Cost of Equity k=Div Yld + g (Cols 3+4)
7	1.	American States	36.42	0.94	2.58%	6.67%	9.2%
8	2.	Aqua America	22.76	0.48	2.11%	9.17%	11.3%
9	3.	California Water	38.02	1.16	3.06%	7.50%	10.6%
10	4.	Connecticut Water	24.75	0.86	3.48%	10.00%	13.5%
11	5.	Middlesex	19.02	0.69	3.65%	8.00%	11.7%
12	6.	SJW Corp.	33.75	0.59	1.76%	10.00%	11.8%
15		GROUP AVERAGE			2.77%	8.56%	11.3%
16		GROUP MEDIAN					11.5%

a) See Rejoinder Schedules D-4.5

Sources:
Value Line Investment Analyzer July 12, 2007
Yahoo Finance Website June 14, 2007

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Sustainable Growth

Exhibit
Schedule D-4.9
Witness: Bourassa

Line No.		Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Sustainable Growth(a) br	(5) vs	(6) br+sv Growth (g)	(7) Indicated Cost of Equity k=Div Yld + g (Cols 3+6)	(8) Indicated Cost of Equity k=Div Yld + g (Cols 3+6)
7	1.	American States	36.42	0.94	2.58%	4.35%	3.94%	8.29%	10.9%	10.9%
8	2.	Aqua America	22.76	0.48	2.11%	3.83%	1.02%	4.86%	7.0%	(b)
9	3.	California Water	38.02	1.16	3.06%	4.42%	1.60%	6.02%	9.1%	9.1%
10	4.	Connecticut Water	24.75	0.86	3.48%			6.39%	9.9%	9.9%
11	5.	Middlesex	19.02	0.69	3.65%			6.39%	10.0%	10.0%
12	6.	SJW Corp.	33.75	0.59	1.76%			6.39%	8.1%	8.1%
15		GROUP AVERAGE			2.77%			6.39%	9.2%	9.6%
16		GROUP MEDIAN							9.5%	9.9%

19 a) See Schedule D-4.6 and D-4.7
20 b) Estimate is at or near the cost of Baa investment grade bonds, which are currently at 6.8 percent. Forecasted rate are
21 6.9 percent for the 2008-2009 time period.
22 Sources:
23 Value Line Investment Analyzer July 12, 2007
24 Yahoo Finance Website June 14, 2007

Exhibit
Schedule D-4.10
Witness: Bourassa

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Two-Stage Growth - Projected

Line No.		Company	(1) Spot Price(P_0)	(2) Next Year's Div (D_1)	(3) Yield (D_1/P_0)	(4) Projected Growth Rates Near Term (a)	(5) Long Term (GDP)	(6) Average (b)	(7) Indicated Cost of Equity
1	1.	American States	36.42	0.94	2.58%	6.67%	6.80%	6.71%	9.3%
2	2.	Aqua America	22.76	0.48	2.11%	9.17%	6.80%	8.39%	10.5%
3	3.	California Water	38.02	1.16	3.06%	7.50%	6.80%	7.27%	10.3%
4	4.	Connecticut Water	24.75	0.86	3.48%	10.00%	6.80%	8.94%	12.4%
5	5.	Middlesex	19.02	0.69	3.65%	8.00%	6.80%	7.60%	11.3%
6	6.	SJW Corp.	33.75	0.57	1.69%	10.00%	6.80%	8.94%	10.6%
7									
8		GROUP AVERAGE						7.98%	10.7%
9		GROUP MEDIAN							10.6%

(a) See Schedule D-4.5
(b) Near term growth given weighting of .67

Chaparral City Water Company
Market Betas

Exhibit
Schedule D-4.11
Witness: Bourassa

Line No.		Company	
1		Company	
2	1.	American States	0.80
3	2.	Aqua America	0.90
4	3.	California Water	0.90
5	4.	Connecticut Water	0.90
6	5.	Middlesex	0.85
7	6.	SJW Corp.	0.70
8		Average	**0.84**
9			
10	Source:		
11	Value Line - April 27, 2007		
12			
13			
14			
15			
16			

Chaparral City Water Company
Computation of Current Market Risk Premium

Exhibit
Schedule D-4.12
Witness: Bourassa

Line No.	Month	Dividend Yield	+	Growth	=	Expected Market Return	-	Monthly Average 30 Year Treasury Rate	=	Market Risk Premium
1										
2										
3	**Month**	Yield	+	Growth	=	Return	-	Treasury Rate	=	Premium
4										
5	Aug 2006	2.20%	+	11.69%	=	13.89%	-	5.00%	=	8.89%
6	Sept	2.20%	+	11.34%	=	13.54%	-	4.85%	=	8.69%
7	Oct	2.15%	+	9.75%	=	11.90%	-	4.85%	=	7.05%
8	Nov	2.10%	+	9.72%	=	11.82%	-	4.69%	=	7.13%
9	Dec 2006	2.09%	+	9.41%	=	11.50%	-	4.68%	=	6.82%
10	Jan 2007	2.05%	+	9.57%	=	11.62%	-	4.85%	=	6.77%
11	Feb	2.10%	+	10.47%	=	12.57%	-	4.82%	=	7.75%
12	March	2.10%	+	10.07%	=	12.17%	-	4.72%	=	7.45%
13	April	2.09%	+	9.29%	=	11.38%	-	4.87%	=	6.51%
14	May	2.08%	+	9.15%	=	11.23%	-	4.90%	=	6.33%
15										
16	Average	2.12%	+	10.05%	=	12.16%	-	4.82%	=	7.34%
17										
18										
19										
20										
21										
22	Sources									
23	Value Line Analyzer Software - Averages of Value Line 1700 stocks									
24	Federal Reserve Average Monthy Treasury Rates									
25										
26										

Chaparral City Water Company
Test Year Ended December 31, 2006
Capital Asset Pricing Model (CAPM)

Exhibit
Schedule D-4.13
Witness: Bourassa

Line No.		Rf	+	beta[3]	x	Rp	=	k
1								
2								
3	Historical Market Risk Premium CAPM[1]	5.1%	+	0.84	x	7.6% [4]	=	11.5%
4								
5	Current Market Risk Premium CAPM[2]	5.2%	+	0.84	x	7.3% [5]	=	11.4%
6								
7								
8								
9								
10								
11								

12 [1] Federal Reserve July 12, 2007 average of 5, 7 and 10 year Treasury rates (Rf)
13 [2] Federal Reserve July 12, 2007 30 year Treasury rate (Rf)
14 [3] Value Line. See Schedule D-4.12
15 [4] Historical Market Risk Premium from (Rp) MoriningStar SBBI 2006 Yearbook Table A-2 Intermediate-Horizon ERP 1926-2006
16 [5] Computed using DCF constant growth method to determine current market return on Value Line 1700 stocks
17 and CAPM with beta of 1.0 to compute Current Market Risk Premium (Rp). See Schdule D-4.12.
18
19
20

EXHIBITS D-1 – D-6

Schedule D
Exhibit 1
Witness: Bourassa

Chaparral City Water Company

Discounted Cash Flow Analysis (Water)
Market Price

Line No.		Company	(1)	(2) 2007 Div	(3) 5 Year Historical Average Div. Growth	(4) Recent Price	(5) 5 Year Historical Average Price Growth	(6) Year 5 Price	(7) EXPECTED CASH FLOWS Recent Price	(8) Year 1 Div	(9) Year 2 Div	(10) Year 3 Div	(11) Year 4 Div	(12) Year 5 Div + Price	(13) Implied ROE = Internal Rate of Return (Cols 7-12)
7	1.	American States		$ 0.93	1.05%	$ 36.42	12.24%	$ 64.89	$ (36.42)	$ 0.93	$ 0.94	$ 0.95	$ 0.96	$ 72.56	16.5%
8	2.	Aqua America		0.53	7.08%	22.76	9.77%	36.27	(22.76)	0.53	0.57	0.61	0.65	42.12	14.8%
9	3.	California Water		1.17	1.01%	38.02	11.77%	66.32	(38.02)	1.17	1.25	1.34	1.44	80.68	18.5%
10	4.	Connecticut Water		0.88	1.25%	24.75	-2.38%	21.94	(24.75)	0.88	0.94	1.01	1.08	33.82	9.4%
11	5.	Middlesex		0.70	2.15%	19.02	4.39%	23.58	(19.02)	0.70	0.75	0.80	0.86	33.89	15.0%
12	6.	SJW Corp.		0.59	3.95%	33.75	18.16%	77.72	(33.75)	0.59	0.63	0.68	0.72	87.14	22.1%
15		GROUP AVERAGE			2.75%		8.99%								16.0%
16		GROUP MEDIAN			1.70%		10.77%								15.8%

Sources:
Value Line Data April 27, 2007
Yahoo Finance - Stock Price July12, 2007

Chaparral City Water Company
Historical Compound Annual Total Market Returns

Schedule D
Exhibit 2
Witness: Bourassa

	Company	3 Yr.** Return	5 Yr.** Return	10 Yr.*** Return
1.	American States	21.94%	16.86%	22.68%
2.	Aqua America	15.12%	15.29%	20.88%
3.	California Water	20.39%	17.21%	14.07%
4.	Connecticut Water	0.35%	1.37%	13.31%
5.	Middlesex	3.84%	8.88%	16.20%
6.	SJW Corp.	42.91%	26.29%	22.45%
	Average	17.42%	14.32%	18.26%

* 2004-2006
** 2002-2006
*** 1997-2006

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Historical Compound Annual Capital Appreciation Returns

Schedule D
Exhibit 3
Witness: Bourassa

	Company	3 Yr.* Return	5 Yr.** Return	10 Yr.*** Return
1.	American States	19.28%	14.33%	14.63%
2.	Aqua America	13.41%	13.45%	19.28%
3.	California Water	17.19%	14.16%	11.32%
4.	Connecticut Water	-3.08%	-2.03%	9.88%
5.	Middlesex	0.49%	5.41%	12.89%
6.	SJW Corp.	41.25%	24.77%	21.15%
	Average	14.76%	11.68%	14.86%

* 2004-2006
** 2002-2006
*** 1997-2006

Sources:
Value Line Data
Yahoo Finance

Schedule D
Exhibit 4
Witness: Bourassa

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Analyst Estimates of DPS Growth

Line No.		Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Div. Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)
7	1.	American States	36.42	0.94	2.58%	3.00%	5.6%
8	2.	Aqua America	22.76	0.48	2.11%	9.50%	11.6%
9	3.	California Water	38.02	1.16	3.06%	1.00%	4.1%
10	4.	Connecticut Water	24.75	0.86	3.48%	Not Available	
11	5.	Middlesex	19.02	0.69	3.65%	Not Available	
12	6.	SJW Corp.	33.75	0.57	1.69%	Not Available	
15		GROUP AVERAGE					7.1%
16		GROUP MEDIAN					5.6%
18		Current Baa interest rate					6.3%
20		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Top 10					7.5%
21		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Bottom 10					6.3%
22		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Consensus					6.9%

Sources:
- Value Line Analyzer Data
- Zacks Investment Research
- Yahoo Finance Stock Price July 12, 2007
- Federal Reserve July 12, 2007
- Blue Chip Financial Forecast June 2007

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using 5 Year Historical Dividend Growth

Schedule D
Exhibit 5
Witness: Bourassa

Line No.		Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Historical Div. Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)
1							
2							
3							
4							
5							
6							
7	1.	American States	36.42	0.94	2.58%	0.91%	3.5%
8	2.	Aqua America	22.76	0.48	2.11%	8.68%	10.8%
9	3.	California Water	38.02	1.16	3.06%	0.53%	3.6%
10	4.	Connecticut Water	24.75	0.86	3.48%	1.46%	4.9%
11	5.	Middlesex	19.02	0.69	3.65%	1.87%	5.5%
12	6.	SJW Corp.	33.75	0.57	1.69%	5.27%	7.0%
13							
14							
15		GROUP AVERAGE				3.1%	5.9%
16		GROUP MEDIAN				3.6%	5.2%
17							
18		Current Baa interest rate					6.3%
19							
20		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Top 10					7.5%
21		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Bottom 10					6.3%
22		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Consensus					6.9%
23							
24							
25							
26	Sources:						
27		Value Line Analyzer Data					
28		Zacks Investment Research					
29		Yahoo Finance Stock Price July 12, 2007					
30		Federal Reserve July 12, 2007					
31		Blue Chip Financial Forecast June 2007					
32							
33							

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using 5 Year Historical EPS Growth

Schedule D
Exhibit 6
Witness: Bourassa

Line No.		Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Historical EPS Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)
7	1.	American States	36.42	0.94	2.58%	7.80%	10.4%
8	2.	Aqua America	22.76	0.48	2.11%	8.62%	10.7%
9	3.	California Water	38.02	1.16	3.06%	8.59%	11.6%
10	4.	Connecticut Water	24.75	0.86	3.48%	Negative	NM
11	5.	Middlesex	19.02	0.69	3.65%	5.32%	9.0%
12	6.	SJW Corp.	33.75	0.57	1.69%	9.84%	11.5%
15		GROUP AVERAGE				8.0%	10.7%
16		GROUP MEDIAN				8.6%	10.7%
18		Current Baa interest rate					6.3%
20		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Top 10					7.5%
21		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Bottom 10					6.3%
22		Blue Chip Forecast Baa Corporate Bond Interest Rate 2008-2009 Consensus					6.9%

24 * Indicated equity cost below current cost of debt (Baa) or negative growth.
25 ** Indicated cost of equity at or below projected cost of Baa bonds

28 Sources:
29 Value Line Analyzer Data
30 Zacks Investment Research
31 Yahoo Finance Stock Price July 12, 2007
32 Federal Reserve July 12, 2007
33 Blue Chip Financial Forecast June 2007

FENNEMORE CRAIG
Norman D. James (No. 006901)
Jay L. Shapiro (No. 014650)
3003 N. Central Ave.
Suite 2600
Phoenix, Arizona 85012
Attorneys for Chaparral City Water Company

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO: W-02113A-07-0551

REBUTTAL TESTIMONY OF

THOMAS J. BOURASSA

(COST OF CAPITAL)

(CORRECTED)

EXHIBIT
A-20
ADMITTED

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I. INTRODUCTION AND QUALIFICATIONS.

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. On behalf of the applicant, Chaparral City Water Company ("CCWC" or "the Company").

Q. ARE YOU THE SAME THOMAS J. BOURASSA THAT FILED DIRECT AND REBUTTAL TESTIMONY ON RATE BASE, INCOME STATEMENT, REVENUE REQUIREMENT AND RATE DESIGN IN THIS CASE?

A. Yes. My background and qualifications are discussed in my direct testimony on those aspects of the case.

Q. DID YOU ALSO PREPARE DIRECT TESTIMONY ON THE COST OF CAPITAL ON BEHALF OF CCWC IN THIS CASE?

A. Yes, I also provided direct testimony on the cost of capital, including the cost of equity, in this case.

II. SUMMARY OF REBUTTAL TESTIMONY AND THE PROPOSED COST OF CAPITAL FOR THE COMPANY.

A. Summary of Company's Rebuttal Recommendation.

Q. WHAT IS THE PURPOSE OF THIS PORTION OF YOUR REBUTTAL TESTIMONY?

A. In this portion of my rebuttal testimony I will provide updates of my cost of capital analysis and recommended rate of return using recent financial data. I also will respond as appropriate to the direct testimonies of Mr. Pedro Chaves and Mr. Gordon Fox on behalf of the Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") and the direct testimony of Mr. William A. Rigsby

on behalf of the Residential Utility Consumer Office ("RUCO").

Q. PLEASE SUMMARIZE YOUR UPDATED COST OF CAPITAL ANALYSIS.

A. Since the Company's direct filing, the cost of equity has increased substantially, as indicated by the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). The table below summarizes the results of my updated analysis using those models:

	Range	Midpoint
DCF Constant Growth (earnings growth)	11.1% - 14.4%	12.7%
DCF Constant Growth (sustainable growth)	9.0% - 11.4%	10.2%
Two-Stage Growth Model	10.6% - 12.7%	10.9%
DCF Average Results	**10.2% - 12.8%**	**11.5%**
CAPM Historical Market Risk Premium		10.7%
CAPM Current Market Risk Premium		18.3%
Average CAPM Results	**10.7%-18.3%**	**14.5%**
Average Overall Results	**10.5%-15.6%**	**13.0%**

The schedules containing my updated cost of capital analysis are included with my rebuttal schedules, attached to my other rebuttal testimony. Attached to this testimony are Exhibits 1 through 6, which are discussed below.

I also prepared rebuttal testimony that addresses the Company's rebuttal rate base, its income statement (revenue and operating expenses), its required increase in revenue, and its rate design and proposed rates and charges for service. For the convenience of the Commission and the parties, that testimony has been filed separately in this case.

Q. PLEASE SUMMARIZE YOUR RECOMMENDED COST OF DEBT AND EQUITY, AND YOUR RECOMMENDED RATE OF RETURN ON RATE BASE AT THIS STAGE OF THE PROCEEDINGS.

A. The Company's recommended capital structure consists of 23.42 percent debt and 76.58 percent common equity as shown on Rebuttal Schedule D-1. Based on my updated cost of capital analysis, I am recommending a cost of equity of 11.5 percent for the Company. The Company's recommended cost of debt is 5.1 percent based on a cost of short-term debt of 3.98 percent and a cost of long-term debt of 5.33 percent.

Based on my 11.5 percent recommended cost of equity, the Company's weighted cost of capital ("WACC") is 10.0 percent, as shown on Rebuttal Schedule D-1. I recommend that the WACC be used as the rate of return and applied to the Company's fair value rate base ("FVRB") to compute the Company's required operating income, consistent with the Company's position in its prior rate case, Docket No. W-02113A-04-0616.

Q. IS THE COST OF SHORT-TERM DEBT LOWER THAN IN THE COMPANY'S DIRECT FILING?

A. Yes. The short-term borrowing rate for CCWC's parent, American States Water, is based upon the London InterTAN Borrowing Rate ("LIBOR"). Because the short-term rate is adjusted based on the LIBOR, I am recommending that the current 12-month LIBOR rate, 3.98 percent, be used as the cost of short-term debt.

Q. IS YOUR REBUTTAL COST OF EQUITY RECOMMENDATION HIGHER THAN IN YOUR DIRECT TESTIMONY?

A. Yes. In my direct testimony relating to the cost of capital, which was filed more than one year ago, I recommended a cost of equity of 10.5 percent based on financial information from July 2007. My current recommendation, 11.5 percent,

is based on current financial information. The methodologies that I have used are same. However, key inputs into the DCF and CAPM models have changed over the past year. For example, the average beta of the public traded water utilities in my sample group (which is also Staff's sample group) has increased substantially, indicating that water utilities have become a much riskier investment. This, in turn, indicates that the cost of equity has increased.

Q. WHY ARE YOU RECOMMENDING A COST OF EQUITY OF ONLY 11.5 PERCENT, WHEN YOUR FINANCIAL MODELS INDICATE THAT A HIGHER EQUITY RETURN IS APPROPRIATE?

A. The midpoint of the range of cost of equity estimates is 13.0 percent, as shown above. Given CCWC's small size, the regulatory methods and policies used in this jurisdiction (which increase investment risk), and other firm-specific factors, it is my opinion that at the present time, a cost of equity of 13.0 percent is warranted and supported by the underlying record. Even so, I am recommending only 11.5 percent to reflect CCWC's desire to keep the revenue increase at or below the increase requested in its direct filing and to help minimize disputes between the parties.

B. <u>Summary of the Recommendations of Staff and RUCO.</u>

Q. PLEASE SUMMARIZE THE COST OF DEBT AND EQUITY RECOMMENDED BY STAFF AND RUCO, AND THEIR RESPECTIVE RECOMMENDATIONS FOR THE RATE OF RETURN ON FAIR VALUE RATE BASE.

A. Staff determined a cost of equity of 10.0 percent based on the average cost of equity produced by its DCF and CAPM models (11.8 percent) and a 180 basis point downward adjustment for CCWC's lower financial risk as compared to the publicly traded water utilities in Staff's sample group. *See* Chaves Direct

Testimony ("DT") at 35. Staff did not consider any of CCWC's firm-specific risks other than financial risk. Staff's recommended cost of debt is 5.0 percent, based on a short-term debt rate of 3.8 percent and a long-term debt rate of 5.4 percent. *Id.* Based on a capital structure of 24.4 percent debt and 76.6 percent equity, Staff determined the WACC for CCWC to be 8.8 percent. *Id.* Then, Staff adjusted the WACC downward by subtracting 1.2 percent as an adjustment for inflation. Thus, Staff's adjusted WACC is 7.6 percent. *See* Chaves DT at 36.

RUCO determined its recommended cost of equity, 6.83 percent, based on the average cost of equity of its DCF and CAPM results (8.83 percent) and a downward adjustment of 200 basis points for inflation. *See* Rigsby DT at 8. RUCO's recommended cost of debt is 4.96 percent, based on a short-term debt rate of 3.13 percent and a long-term debt rate of 5.34 percent. *Id.* at 58-59. Based on a capital structure of 23.47 percent debt and 76.56 percent equity, RUCO computed a WACC of 6.38 percent, which is RUCO's recommended rate of return on FVRB. *Id.* at 62. RUCO did not consider any firm-specific risks.

Q. WHAT IS THE UNDERLYING BASIS FOR THE APPROACH EMPLOYED BY STAFF AND RUCO IN DETERMINING CCWC'S RATE OF RETURN?

A. The approach used by Staff and RUCO in determining the rate of return to be applied to CCWC's FVRB is based on the methodology adopted in CCWC's remand proceeding in Decision 70441 (docketed July 28, 2008). In Decision 70441, the Commission determined an adjusted WACC based on the cost of common equity adopted in Decision No. 68176 (Sept. 30, 2005) reduced by an inflation factor. The adjusted WACC was then applied to CCWC's FVRB to derive its authorized operating income. *See* Decision No. 70441 at 37.

RUCO's approach in this case is identical to the approach adopted by the

Commission in Decision No. 70441. Staff's approach is a modified version. The modification is two-fold. First, Staff recommends that the inflation adjustment also apply to the cost of debt because inflation is a component cost of debt. *See* Fox DT at 5. Second, Staff recommends that the inflation factor recognize that the FVRB reflects a 50/50 weighting of original cost rate base ("OCRB") and reconstruction cost rate base ('RCRB"). Because the Company's OCRB (which is one-half of the FVRB) is based solely on historic or "book" costs and is unaffected by changes in price levels and other economic factors, Staff recommends that the inflation factor be reduced by one-half. *Id.* at 8-9.

Q. WHY HASN'T THE COMPANY ADOPTED AN APPROACH THAT IS IDENTICAL TO, OR A REFINEMENT OF THE APPROACH ADOPTED IN DECISION 70441, LIKE STAFF AND RUCO?

A. Decision No. 70441 has been appealed by the Company to Arizona Court of Appeals. Until this appeal has been decided, it is uncertain whether the approach adopted in Decision No. 70441 correctly uses the fair value of the Company's utility plant and property in setting rates. Moreover, if the Company accepted Decision No. 70441 as settled precedent in this case, the Company arguably would be waiving its right to assert that the approach adopted in Decision No. 70441 was erroneous, even if the Court of Appeals again rules against the Commission.

Q. IN YOUR OPINION, WHAT IS WRONG WITH THE APPROACH ADOPTED BY THE COMMISSION IN DECISION 70441?

A. The Company's Application for Rehearing, filed in Docket No. W-02113A-04-0616 on July 31, 2008, provides a detailed discussion of the problems inherent in Decision No. 70441. Because that application is currently on file with the Commission, and because certain of the Company's arguments are legal in nature, I will refer you to that document for a comprehensive discussion of the Company's

position regarding Decision No.70441.

As general background here, and in brief, the Company believes that despite the Arizona Court of Appeals' instruction to use the fair value of the Company's property in setting rates, and despite the fact that the Company's FVRB was $3.3 million larger than its OCRB in its last rate case, the Commission on remand simply set the Company's operating income at a level that was equivalent to the result produced by multiplying the WACC by OCRB. The increase in operating income was only $7,441, which is 0.57 percent greater than the operating income authorized in Decision No. 68176. The Company believes that the Commission should have applied the 7.6 percent rate of return that was used to determine the Company's operating income in Decision No. 68176 to the FVRB.

The Commission's primary justification for its approach was that applying the WACC to the Company's FVRB "would over-compensate the Company for inflation." Decision No. 70441 at 30-32, 41. The Company believes that this determination was erroneous for several reasons, including the fact that half of the FVRB is based on the original cost of the Company's plant which, by definition, contains no inflation, and the Commission's incorrect belief that the Company's fair value rate base is simply "inflated" by some general measure of inflation instead of being a conservative estimate of current value. The Company also believes that Decision No. 70441 violated the prohibition against piecemeal ratemaking because it considered the impact of inflation in isolation, ignoring inflation's impact on the Company's overall cost of service. The Commission considered only the impact of inflation on the Company's FVRB and its cost of equity, and ignored the evidence presented by the Company regarding the impact of inflation on the Company's earnings.

III. FAIR VALUE RATEMAKING.

A. Brief Overview of the "Fair Value" Standard.

Q. GENERALLY SPEAKING, HOW DOES THE "FAIR VALUE" STANDARD OPERATE?

A. Under the fair value standard, the rate of return is applied to the current market value of a utility's plant and property that is devoted to public service. The United States Supreme Court has explained that this approach is intended to mimic the competitive market.

> [The] fair value standard mimics the operation of the competitive market. To the extent utilities' investment in plant are good ones (because their benefits exceed their costs) they are rewarded with an opportunity to earn an "above-cost" return, that is, a fair return on the current "market value" of the plant. To the extent utilities' investments turn out to be bad ones (such as plants that are canceled and so never used and useful to the public), the utilities suffer because the investments have no fair value and so justify no return.

Duquesne Light Co. v. Barasch, 488 U.S. 299, 308-09 (1989).

In *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944), the U.S. Supreme Court ruled that other methods of setting utilities' rates also may be used, and adopted what is sometimes called the "end result" test to determine whether utilities' rates pass constitutional muster. However, the "end result" test has been rejected by Arizona courts due to the Arizona Constitution's requirement that fair value be used to set rates. For example, in *Arizona Corporation Commission v. Arizona Water Co.*, 85 Ariz. 198, 203, 335 P.2d 412, 415 (1959), the Arizona Supreme Court stated:

> This court has held that under our constitution the Corporation Commission must find the fair value of the properties devoted to the public use, and that in determining the fair value the Commission cannot be guided by the prudent investment theory nor can it use common equity as the rate base standard. ... The amount of capital invested is immaterial. Under the

> law of fair value a utility is not entitled to a fair return on its investment; it is entitled to a fair return on the fair value of its properties devoted to the public use, no more and no less.

Q. PLEASE DISCUSS WHAT IS MEANT BY A FAIR RATE OF RETURN.

A. A fair rate of return is achieved when a utility is permitted to set rates and charges for service at levels where the expected return provides common stock investors a reasonable opportunity to earn the cost of common equity. Since operating expenses and interest on debt take precedence over payments to common stockholders, the common equity shareholders of the company bear the greatest risk of not receiving expected returns. The U.S. Supreme Court recognized this requirement many years ago. In describing the appropriate return on a utility's FVRB, the U.S. Supreme Court, in *Bluefield Waterworks,* stated:

> A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economic management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

Bluefield Waterworks & Improvement Co. v. Pub. Serv. Comm'n of West Va., 262 U.S. 679, 692-93 (1923). In the *Hope* decision, the Supreme Court restated this requirement:

> [T]he return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Hope Natural Gas, 320 U.S. at 603.

Historically, a utility's rates were fixed on the basis of providing a fair return on its FVRB, as shown by the discussion in U.S. Supreme Court decisions such as *Bluefield Waterworks*, 262 U.S. at 690-92, and *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 408-10 (1926). Arizona courts have continued to state that the Commission must use a FVRB in setting rates in Arizona. Recently, the Arizona Supreme Court stated that in a monopolistic setting, "fair value has been the factor by which a reasonable rate of return was multiplied to yield, with the addition of operating expenses, the total revenue a corporation could earn." *US West Communications, Inc. v. Arizona Corporation Commission*, 201 Ariz. 242, 245, 34 P.3d at 351, 354 (2001). That statement is consistent with the Arizona Supreme Court's statement in *Simms v. Round Valley Light & Power Co.*, 80 Ariz. 145, 151, 294 P.2d 378, 382 (1956), some 45 years earlier, that the "reasonableness and justness of the rates must be related to [the] finding of fair value."

In short, the principles stated by the U.S. Supreme Court on what constitutes a fair rate of return are consistent with the holdings of the Arizona courts. Because of the constitutional requirements in Article 15 of the Arizona Constitution, however, the Commission should establish rates that provide a fair rate of return on the fair value of a utility's property at the time of inquiry, i.e., its FVRB.

Q. STAFF, HOWEVER, ARGUES THAT INVESTORS DO NOT EXPECT A HIGHER RETURN IF FAIR VALUE IS USED RATHER THAN ORIGINAL COST (FOX DT AT 9). DO YOU AGREE?

A. No. Mr. Fox's argument is erroneous for several reasons. First, I would assume that investors expect the Commission to follow Arizona law, just as they would expect any other public utility commission to follow the particular laws applicable in its jurisdiction. Second, the use of a FVRB may result in a higher return (in dollars) or a lower return (in dollars) when compared to the use of a OCRB,

depending on the particular circumstances of the utility. A variety of factors (e.g., obsolesce) may cause the FVRB to be lower than OCRB. Finally, in a data request, the Company asked Staff to provide the basis for Mr. Fox' view of what investor expect, and Staff's response was non-responsive, indicating that the Staff has no support for this contention.

Q. MR. FOX ALSO CONTENDS ON PAGE 9 OF HIS TESTIMONY THAT THE MARKET DETERMINES THE RETURN REQUIRED BY INVESTORS, AND THAT WATER UTILITIES CANNOT EXPECT TO EARN A RETURN IN EXCESS OF THE MARKET-DETERMINED RATE. IS THAT CORRECT?

A. Mr. Fox and I agree on this point. As I will discuss in a moment, in this case the return (cost of equity) is being estimated by using two market-based finance models, the DCF model and the CAPM. Therefore, cost of equity estimates can be applied to FVRB, as required by the Arizona Constitution.

B. <u>The Financial Models Used by the Commission to Estimate the Cost of Equity Are Market-Based Models, and Do Not Depend on the Type of Rate Base Used.</u>

Q. YOU HAVE PROVIDED EQUITY COST ESTIMATES FOR CCWC. DID THOSE ESTIMATES DEPEND ON THE TYPE OF RATE BASE USED?

A. No. My cost of equity estimates, as well as those provided by Staff and RUCO, are unrelated to the type of rate base used, and actually are better suited for use in connection with a market-based rate base.

Q. EXPLAIN WHY THAT IS THE CASE.

A. Like Staff and RUCO, I used the DCF model and the CAPM to derive my estimate of the current cost of equity, using financial information for a sample group of publicly traded utilities. Thus, the DCF and CAPM are market-based models that are implemented with market data. It is not necessary to determine the rate bases

of the sample utilities to implement these models. Consequently, the estimates produced by these models are independent of the rate base to which they are applied.

Equity cost estimates are determined from market data and provide an estimate of the equity return an investor requires on dollars invested in shares of common stock. Moreover, when the Commission determines the cost of equity in a rate case, it normally relies solely on cost of equity estimates derived from market-based methods such as the DCF model and the CAPM. The Commission does not use comparable earnings or other approaches that rely on accounting-based equity returns, which would be more appropriate for use with an accounting-based rate base, like an OCRB. The Commission's policy of relying on market-based finance models to estimate the cost of equity has been stated in a number of cases. For example, in a recent case filed by Arizona-American Water, the ACC explained:

> In regard to Arizona-American's arguments that Staff's cost of equity estimates are inconsistent with recent authorized returns on common equity, realized returns on common equity, *Value Line's* forecasted returns on common equity, and of forecasted Treasuries, we agree with Staff and RUCO that while the comparable earnings method was once widely used to determine equity cost, it has been replaced by market based corporate finance models, including the DCF and the CAPM. We further agree that because the DCF method and the CAPM estimate the cost of equity by quantifying the anticipated dividends and capital gains investors expect to earn by purchasing shares of stock with comparable risk, their results meet the *Hope* comparable risk standard.

Arizona-American Water Co., Decision No. 67093, at 29 (June 30, 2004). Similarly, in a recent case filed by Arizona Water Company, the ACC stated:

> In estimating its cost of equity, Arizona Water relied on a risk premium analysis methodology used by the CPUC staff, which uses comparisons to actual or authorized returns on equity. This sort of "comparable earnings" analysis has long been discredited for several reasons, ... Market-based

> methods like the DCF model and the CAPM provide more reliable estimates of equity cost, because it is capital markets, not regulatory commissions, that determine the cost of equity. Use of the risk premium analysis urged by the Company would circumvent the market forces that regulation attempts, as much as possible, to replicate. ... The risk premium analysis methodology erroneously assumes that accounting-based "actual" ROEs are equal to the cost of equity.

Arizona Water Co., Decision No. 68302, at 37-38 (Nov. 14, 2005). The same approach was used by the Commission in determining Chaparral City's equity return in this case. Decision No. 68176 at 17-26.

Q. DOES THAT MEAN THAT COST OF EQUITY ESTIMATES BASED ON THE DCF AND CAPM MODELS CANNOT BE USED WITH AN OCRB?

A. No, not at all. Most jurisdictions currently use OCRB as the rate base, and many apply cost of equity estimates based on the DCF and CAPM models to an OCRB. My point is that there is certainly no reason why the results of these models cannot be applied to a market-based rate base. As one expert on regulatory finance has explained:

> In a competitive market, investment decisions are taken on the basis of market prices, market values, and market cost of capital. If regulation's role was to duplicate the competitive result perfectly, then the market cost of capital would be applied to the current market value of rate base assets employed by utilities to provide service.

Roger A. Morin, *New Regulatory Finance* 395 (Public Utility Reports, Inc. 2006). Because the fair value standard is intended to mimic the competitive market, it makes sense to apply the results produced by models that are market-based to a rate base that is also market-based.

This point becomes obvious when considering the models used by this Commission in estimating the cost of equity for rate-making purposes. The DCF model has two basic components: dividend yield, which is the expected annual

dividend divided by the price of the stock, and dividend growth, which is the expected rate of future dividend growth and is largely a function of the firm's future earnings. Dividend yield is calculated by dividing the expected dividend by the current market price of the stock, not by the stock's book value. When a stock is trading above book value, the use of the current market price reduces the resulting cost of equity, and vice versa. In either case, the cost of equity is market-based, and if applied to the current value of a utility's plant (i.e., a FVRB), the utility is properly compensated based on current market conditions, as Dr. Morin states in his text.

The CAPM focuses on the relative riskiness of an investment in a particular stock, as estimated by its beta, which is calculated by analyzing its volatility relative to the market as a whole. Again, this approach is market-based, and produces an estimate of the cost of equity that is tied to the market price of the stock – not the stock's book value. The higher the beta, the riskier the stock, which means that the investor requires a higher return. As I stated earlier, the betas of the sample group of water utilities has increased substantially since CCWC's last rate case, indicating that CCWC's cost of equity has increased substantially.[1] Again, applying a cost of equity that is based on the relative riskiness of a group of stocks trading on a national exchange to the current value of a utility's plant properly compensates the utility based on current market conditions.

IV. COMMENTS ON THE GENERAL CONCEPT OF AN INFLATION ADJUSTMENT TO THE RATE OF RETURN APPLIED TO THE FAIR VALUE RATE BASE.

Q. BASED ON ARIZONA'S REQUIREMENT TO FIND AND USE FAIR

[1] In CCWC's last rate case, the average beta of Staff's sample group was 0.68. Surrebuttal Testimony of Alejandro Ramirez, Schedule AXR-8 May 5, 2005). The average beta of Staff's sample group in the current case is 1.01 – an increase of 0.33 – an increase of nearly 50 percent. Chaves DT, Schedule PMC-3.

VALUE IN ESTABLISHING RATES AND THE METHODOLOGIES USED TO ESTIMATE EQUITY RETURNS BY THIS COMMISSION, DO YOU AGREE WITH THE CONCEPT OF AN INFLATION ADJUSTMENT TO THE EQUITY RETURN OR TO THE RATE OF RETURN APPLIED TO THE FAIR VALUE RATE BASE?

A. No. Put simply, the level of earnings provided to a utility through the rate of return must support the current value of a utility's investment or a confiscation of its property will occur. It does not matter whether the rate of return includes an embedded inflation expectation or not. If investors require a particular rate of return as compensation for the risk associated with an investment in the equity of a utility, then anything less than that return will result in a decrease in the utility's value.

Let me explain this point in more detail. The cost of capital, or the investor's required return, is the compensation required by investors for postponing consumption and exposing capital to risk. That is, when investors supply funds to a utility, they are not only postponing consumption by giving up the alternative of utilizing their funds in some other way, but they also are exposing their funds to risk. If there are differences in the risks of investments, competition among firms for capital will bring different prices. If earnings on an investment of capital meet the investor's required return (compensation), the price they are willing to pay for the investment (e.g., for shares of common stock) will not change. If earnings on an investment are less than that required to meet the investor's required return, then the price the investor is willing to pay for the stock will decrease. The reverse is also true.

As I stated earlier, the DCF and CAPM are market-based models used to estimate the investor's required rate of return on the current value of common

equity capital. Investors are willing to pay, for example, $18.00 for a share of Aqua America's common stock (the approximate current price) because they anticipate that Aqua America's current and future dividends will produce a return that adequately compensates them for risking their funds. However, if regulation causes a reduction in earnings, inhibiting Aqua America's ability to pay dividends, the market price of its stock will fall because investors will be unwilling to pay $18.00 per share in order to receive a reduced return. Eventually, an equilibrium price will be reached, reflecting the reduction in earnings (and resulting reduction in dividends) caused by regulation, that will be below $18.00. A stockholder who purchases shares of Aqua American for an amount greater than the equilibrium price would suffer a loss as a result.

The same is true with respect to the value of a utility's assets. If the utility invests funds in plant in anticipation of earning a reasonable return on that plant, and regulation lowers the return below the cost of equity for the comparable companies, then the value of the plant that has financed with that investment is reduced. In that case, a portion of the plant's value (and the investment supporting it) is effectively confiscated, just as a reduction in the allowed return for Aqua America will cause the value of its stockholders' investment to be lost when the price of its stock falls.

Q. IF THE RATE OF RETURN AND THE VALUE OF AN INVESTMENT ARE INTERRELATED, THEN ISN'T THERE A PROBLEM OF CIRCULARITY WHEN SETTING THE RATE OF RETURN?

A. No, not under Arizona's regulatory regime. The methodology for estimating the current value of the utility's investment (its FVRB) and the estimation of the investor's required rate of return are independent of each other in Arizona. A utility's rate base is determined using an asset-based approach rather than an

income approach or a market-based approach.[2] The rate of return (WACC) is based on the actual, embedded cost of debt and the cost of equity, estimated using two market-based finance models with inputs based on a proxy of publicly traded utilities. These models do not consider the rate bases of the sample publicly traded water utilities. Thus, rate base and rate of return are entirely independent, and no circularity problem can exist.

Q. PLEASE DEFINE ORIGINAL COST RATE BASE, RECONSTRUCTION COST AND FAIR VALUE RATE BASE.

A. An OCRB is the depreciated value of the historic cost incurred by a utility for constructing the assets used to provide the utility services being regulated. In Arizona court decisions, original cost has also been called "prudent investment." Reconstruction cost new less depreciation ("RCND") is the cost of constructing the same plant based on current construction costs, less depreciation. Generally, account-specific cost indices are multiplied by the original cost of the assets in those accounts to determine the RCND. The methodology used in this case was described in my direct testimony on pages 7 to 9. All of the parties at this stage of the proceeding recommend RCND rate bases of similar magnitudes. All the parties have accepted the Company's RCN study and the RCND values, with the exception of some differences based on proposed rate base adjustments. The recommendations of each of the parties are set forth in my rebuttal rate base and income statement testimony on page 3.

The FVRB is the rate base that the Arizona Constitution requires the ACC to use in fixing rates and charges for the utility services being regulated. The Arizona courts have stated that "[f]air value is measured by the value of a utility's

[2] For a discussion of the different valuation approaches, please see the Rebuttal Testimony of Harold Walker III in the CCWC Remand Proceeding (Docket No. W-02113A-04-0616).

property at the time of inquiry." *Chaparral City Water Co. v. ACC*, No. 1 CA-CC 05-0002 (Feb. 13, 2007) ("*Chaparral City Decision*"), at 7. That value is not the value of the rate base a year ago or the expected value of the rate base at some time in the future. In this case, the utility's FVRB is the value of the rate base at the end of the test period, 2006, not a period prior to 2006 or some expected period in the future.

The ACC's long-standing practice has been to average the utility's OCRB and its RCND rate base, and use the result as the FVRB. That is a very conservative approach and is the approach used in the instant case. None of the parties at this stage of the proceeding disputes the method of computing the FVRB. However, by applying a rate of return that is arbitrarily reduced below the return anticipated by investors (as determined by market-based finance models), the Commission is effectively reducing the FVRB. This methodology is no different than Staff's use of "zero cost" capital in CCWC's remand proceeding, under which CCWC would earn no return on a portion of its FVRB. This is not proper rate-making under Arizona law, which requires that fair value be found and used to set rates, and ultimately results in confiscation of a portion of the rate base..

V. THE INFLATION ADJUSTMENTS TO THE RATE OF RETURN PROPOSED BY STAFF AND RUCO.

A. Problems with RUCO's Inflation Adjustment.

Q. PLEASE COMMENT ON THE INFLATION ADJUSTMENT TO THE COST OF EQUITY PROPOSED BY RUCO.

A. RUCO's downward adjustment of 200 basis points to account for inflation is overstated for two reasons. First, since the FVRB is a 50/50 weighting of OCRB and RCRB and the OCRB, by definition, does not contain inflation (it is the *original* cost to build the plant), RUCO's inflation adjustment should be no more

than 100 basis points, i.e., one-half of its recommended adjustment.

Second, RUCO's inflation adjustment is based on historical information and is not a good proxy for future inflation that is contained in investors' expected equity returns. As Staff argued in CCWC's prior rate case, "analysts who forecast future rates do not have any more information about the future than what is already reflected in the current rate" and "[t]he direction of interest rates ... cannot be predicted any better than by the flip of coin." Surrebuttal Testimony of Alejandro Ramirez, Chaparral City Water, Docket No. W-02113A-04-0616, at 12, 13. In Decision No. 68176, at page 24, the Commission adopted Staff's argument. In this case, Mr. Chaves has again testified that interest rates cannot be accurately forecasted, and therefore the best information about the future is reflected in *current* Treasury yield. Chaves DT at 43. Obviously the same rationale applies to estimating future inflation through a comparison of Treasury yields.

Moreover, the use of historical information assumes erroneously that the actual inflation experienced by investors matched the inflation expectation embedded in the cost of equity when rates were last set. In fact, there is no evidence that such matching occurred, especially given that CCWC has been unable to actually earn its authorized return.

A better measure of expected inflation is the difference between the current spot yields of intermediate-term Treasuries and their corresponding inflation indexed intermediate-term Treasuries. This is the approach Staff has used. Chaves DT at 36. I will address the appropriate proxy for investor-expected inflation in more detail later in my testimony. For now, based on my analysis, I believe the appropriate inflation adjustment is, at present, an upward adjustment of 41 basis points.

Q. WHAT WOULD BE RUCO'S COST OF EQUITY, FAIR VALUE RATE OF

RETURN AND REQUIRED OPERATING INCOME IF AN UPWARD INFLATION ADJUSTMENT FACTOR OF 41 BASIS POINTS WERE USED BY RUCO?

A. RUCO's cost of equity would increase by 241 basis points to 9.24 percent, the WACC would increase by 137 basis points to 8.20 percent, and the required operating income would increase by $500,989 to $2,255,254 from $1,753,848.

B. <u>Problems with Staff's Inflation Adjustment.</u>

Q. PLEASE COMMENT ON THE INFLATION ADJUSTMENT TO THE RATE OF RETURN PROPOSED BY STAFF?

A. In contrast to RUCO, Staff's proposed inflation adjustment of 1.2 percent would apply to *both* the debt and equity portions of CCWC's capital structure. While I disagree that any inflation adjustment is appropriate to either the cost of equity or the cost of debt, it is especially inappropriate to adjust the cost of debt for future inflation because debt is an embedded cost that isn't affected by inflation once the debt has been issued. In other words, debt has a fixed cost, and the cost does not increase or decrease in response to future price or cost increases in the economy.

A graphic illustration of this point can be found in Mr. Fox's direct testimony. On page 7, Mr. Fox has provided a chart that shows the average of the yields on 5- and 10-year Treasuries and the Consumer Price Index ("CPI") for the years 1962 through 2007. Referring to that chart, assume that in 1972, a utility issued bonds totaling $1 million, with an annual interest rate of 8 percent and payable 30 years from the date of issuance. During the 30-year period from 1972 to 2002, the utility's annual debt service – its cost of debt – would be $80,000. This would be the case in 1980, when the CPI was nearly 14 percent, in 1986, when the CPI was just over 2 percent, and in 2001, when the CPI was just under 4 percent. Regardless of the current CPI (or any other estimate of inflation) in any

year shown on Mr. Fox's chart, the utility's cost of debt would remain fixed at 8 percent ($80,000 per year).

Consequently, it would be inappropriate to adjust the cost of debt in setting rates, since the cost of debt is unaffected by inflation. In fact, referring again to Mr. Fox's chart, what would happen if the utility had filed a rate case in 1976 when the CPI was nearly 14 percent, but the annual cost was only 8 percent? Under Staff's approach, the utility's cost of debt would be reduced by 7.00 percent (one-half of 14 percent), resulting in a cost of debt of only 1.00 percent, notwithstanding the fact that the utility would remain legally obligated to pay interest to its bond holders at the rate of 8.00 percent.

This leads to another, significant problem with Staff's adjustment: debt represents a contract under which the borrower is legally obligated to pay interest (the cost of debt). If the borrower fails to pay interest when it becomes due, it defaults on that contract, and faces legal action or, potentially, insolvency. Thus, debt is akin to an operating expense, in contrast to common equity, with respect to which there is no fixed dividend obligation. If the debt cost is adjusted for inflation, the Company would under-recover its cost of debt. The shortfall would be made up by shifting a portion of the equity return to pay the cost of debt. For this reason, there is a substantial difference between the cost of equity, which is forward-looking and is based on investors' expected, future return, and the cost of debt, which is fixed and must be paid, regardless of actual earnings.

Finally, I believe that Staff's inflation adjustment factor is overstated. Again, I will address the appropriate proxy for investor's expectation of inflation in more detail later in my testimony. For now, based on my analysis, I believe the inflation adjustment factor should be an upward adjustment of 41 basis points.

Q. WHAT WOULD BE STAFF'S COST OF EQUITY, FAIR VALUE RATE OF

RETURN AND REQUIRED OPERATING INCOME IF AN UPWARD INFLATION ADJUSTMENT FACTOR OF 41 BASIS POINTS WERE USED BY STAFF?

A. Staff's cost of equity would increase by 161 basis points to 10.41 percent, Staff's cost of debt would increase by 161 basis points to 5.41 percent, the WACC would increase by 180 basis points to 9.41 percent from 7.6 percent, and Staff's required operating income would increase by $496,195 to $2,551,936 from $2,055,831.

Q. IF THE COMMISSION WERE TO DECIDE IT IS APPROPRIATE TO ADJUST THE COST OF DEBT, WHAT APPROACH WOULD YOU RECOMMEND?

A. I would recommend using the current market cost of debt. Otherwise, there would be a serious mismatch between pre-existing debt and inflation anticipated by investors in the future. However, to do so would in the instant case would produce a cost of debt that is higher than the book cost of debt.

Q. PLEASE EXPLAIN WHY THAT WOULD BE THE CASE.

A. The current cost of an AAA investment-grade bond is 6.37 percent (October 29, 2008). Assuming Staff's downward inflation adjustment of 1.2 percent, the inflation-adjusted cost of debt would be 5.17 percent (6.37% less 1.2% equals 5.17%). In contract, Staff's recommended cost of debt is 5.0 percent. I also should emphasize that it is unclear whether CCWC could actually borrow funds at that rate. CCWC has no credit rating, and its parent, American States Water, is currently rated A by Moody's. Thus, the current market cost of debt for CCWC is likely over 7 percent. Therefore, the market cost of debt, even if it were adjusted for inflation, is likely around 6.00 percent, and would produce a higher WACC.

Q. ASSUMING AN INFLATION ADJUSTMENT IS FOUND TO BE APPROPRIATE IN THE INSTANT CASE, WHAT INFLATION FACTOR

WOULD YOU RECOMMEND?

A. I would recommend that the inflation factor be based on average inflation computed on the 5, 7, and 10-year Treasuries and their corresponding inflation-indexed counterparts. The following table shows an analysis of inflation based on the spot yields as of October 29, 2008.

U.S. Treasury	Constant Maturity (Nominal Yield)	Inflation Indexed (Real Yield)	Indicated Inflation (Deflation)
5 Year	2.75%	3.79%	(1.04%)
7 Year	3.21%	3.82%	(.061%)
10 year	3.89%	3.06%	0.83%
		Average	(0.82%)

Using the computed expected inflation rate and multiplying it by 0.5 to account for the fact that one-half of CCWC's FVRB is its OCRB, I would recommend an upward adjustment for inflation of no more than 41 basis points (0.82% x 0.5 x 100).

Q. WHY DO YOU RECOMMEND THE USE OF 5, 7 AND 10-YEAR TREASURIES?

A. I have relied on Staff's testimony in CCWC's prior rate case and the Commission's Responsive Brief filed with the Arizona Court of Appeals. In the prior case, Staff's cost of capital witness testified that most investors consider the intermediate time frame to be the appropriate investment horizon, i.e., they normally consider holding stocks for 5 to 10 years. *See* Surrebuttal Testimony of Alejandro Ramirez , docket No. W-02113A-04-0616 (May 5, 2005) at 11. In its Responsive Brief, at page 28, the Commission quoted Mr. Ramirez's testimony. Notably, this position is consistent with Staff's use of 5, 7, and 10-year Treasury yields in their CAPM

and the use of 3 to 5-year stock price appreciation in developing the current market risk premium ("MRP") for the CAPM. Further, Staff uses 5 years of historical dividends per share ("DPS") and earnings per share ("EPS") as proxies for the growth rate used in their DCF models.

If investors do regard stocks as a 5 to 10-year investment, they also consider future inflation during that same time period. In other words, if an investor expects to hold a stock for 5 years, he is concerned about inflation during that 5-year period – not inflation a decade later. Thus, it does not make sense to use 20-year Treasuries to estimate expected inflation while assuming that investors hold stocks for 5 to 10 years.

C. <u>Other Problems Regarding the Inflation Adjustment.</u>

Q. WHAT IS THE RATIONALE FOR ADJUSTING THE RATE OF RETURN TO ACCOUNT FOR FUTURE INFLATION?

A. The Commission determined that the FVRB contains an inflation component and that the WACC contains an inflation component. *See* Decision No. 70441 at 33. Consequently, if the WACC is applied to the FVRB without the recognition of inflation, the impact of inflation would be overstated, and the revenues resulting from applying the WACC to the FVRB would over compensate the utility. *Id.* While I disagree with this rationale for the reasons stated earlier in my testimony, I would add that adjusting the WACC for inflation without consideration of the impact on the operating expenses of a utility is piecemeal ratemaking.

Inflation also impacts the utility's operating expenses. Thus, between rate cases, the utility's operating income and its earnings will both decline due to increases in operating expenses. These inflationary impacts are not necessarily the same, nor are they of the same magnitude as the inflation that an equity investor might anticipate in the future. Utility companies experience price increases for

specific types of costs which are unrelated to general inflation in the economy at large. For example, repairs and maintenance costs are impacted by the costs of materials and labor for construction services. Moreover, the impact on the utility's earnings caused by increases in operating expenses is much more significant than potential increases in the utility's RCND rate base.

For example, in Decision No. 68176, the Commission authorized recovery of adjusted test year operating expenses of $4,003,011 (exclusive of depreciation and income taxes). Decision No. 68176 at 16. Assuming inflation of 2.46 percent, as Staff does, operating expenses increased by $98,474 in the year following the test year ($4,003,011 x 0.0246), and by over $173,916 between the end of the last test year (2003) and October 1, 2005. Because rates are set on an historic basis, the inflationary increase in operating expenses is not reflected in current rates. To put this in perspective, $98,474 is equal to 8.9 percent of the total operating income authorized in Decision No. 68176, and equal to 11.4 percent of the effective net earnings (operating income less debt service) authorized by the decision. In other words, under an assumed inflation factor, which is arguably low, CCWC was earning <u>substantially less</u> than its authorized return on equity as soon as new rates became effective in 2005.

By contrast, Staff's inflation factor would cause the Company's FVRB to increase by $280,083 in the year following the test year ($20,340,298 x 0.012), and by more than $492,350 between the end of the test year and October 1, 2005. A substantial portion of that increase would be offset by depreciation. But even if depreciation is ignored, the impact of this assumed increase in rate base (and the resulting increase in rate of return dollars) is overwhelmed by the increase in operating expenses. An increase in the FVRB of $280,083 would translate into $21,126 of additional operating income ($280,083 x 0.076). The increase in

operating expenses during that same one-year period would be $98,474, as shown above. If depreciation is considered, the difference would be much greater.

In short, price and cost increases affect all of Chaparral City's business activities, not just the current value of its rate base. When combined with the use of historic test years and the lag inherent in the rate-setting process, the utility is almost always behind. The use of the fair value of the utility's property as its rate base simply helps to level the playing field.

Q. DOESN'T THE ASSUMPTION THAT INFLATION IS DOUBLE COUNTED (IN THE WACC AND THE FVRB) ASSUME THAT UTILITY HAS RECOVERED INFLATION IN THE PAST?

A. Yes. And this assumes that the utility has actually earned its authorized return. Theoretically, the cost of equity includes not only an inflation component, but a number of other components, including the real risk-free rate of interest, interest rate risk, business risk, regulatory risk, financial risk, construction risk, liquidity risk and other firm-specific factors. These components are fluid and change over time. They are also extremely difficult to disaggregate and individually quantify. Investors consider these factors both individually and collectively. The authorized return on equity may understate or overstate the true risk to investors, given that it is an attempt to estimate what return investors expect to earn in the future if they purchase shares of stock issued by publicly traded companies that are used as proxies for CCWC. It is further assumed that an investor would view CCWC as presenting the same investment risk as the stocks of the proxies.

Putting aside the difficulties inherent in measuring what (if any) inflationary component the cost of equity adopted by the Commission contains, the "double counting" inflation argument ignores the fact that authorized rate of return is <u>not</u> guaranteed. There is no evidence that CCWC has consistently earned its

authorized return on common equity in the past, nor is there any certainty that it will do so in the future. If CCWC hasn't earned its authorized return on equity, there is no basis on which to assume that inflation is being double counted by applying the rate of return to FVRB. And, because the cost of debt is a fixed, recurring obligation, any shortfall in recovering the authorized rate of return is borne by the utility's investors. Consequently, to suggest that investors have already fully recovered one or more of the components of the rate of return in the past is simply speculation.

Q. MR. FOX CONTENDS THAT INVESTORS IN THE UTILITY BENEFIT THROUGH APPRECIATION IN THE VALUE OF THE UTILITY'S ASSETS. IS HE CORRECT?

A. I disagree with the underlying premise of Mr. Fox's argument, which is found on page 9 of his direct testimony, for several reasons.

First, Mr. Fox assumes that the value of CCWC's assets – its FVRB – will increase by 1.2 percent per year. However, the market value of those assets is affected by a number of factors, not just "inflation."

Second, the purchasers of the stocks of the publicly traded water utilities in Staff's sample group also expect that the price of their stock will appreciate. In other words, their total return on their investment is a combination of future dividends and an increase in the stock price. Yet in estimating the cost of equity, Staff has ignored future increases in stock price. On page 42 of his direct testimony, Mr. Chaves argues that all stock investors care about are future dividends. A cost of equity that is based solely on future dividends (e.g., the DCF model) understates the total return expected by investors and, therefore, understates the cost of equity.

Third, Mr. Fox has ignored the liquidity risk associated in holding the assets

of a regulated water utility as opposed to holding shares of publicly traded common stock. If a shareholder of Aqua America becomes concerned about his equity investment in that firm, he can sell his stock in a few hours (or, on-line, much sooner). In contrast, there is no market for the assets of a water utility. Nor can the water utility decide to go out of business if its earnings are inadequate due to its legal obligation to furnish service.

In short, Mr. Fox ignores the basic fact that regardless of whether the value of CCWC's assets increases (or decreases), its shareholder has no ready means to obtain that appreciation (or minimize its losses). This is a much different situation than an investor in the common stock of a publicly traded firm. The failure to allow a fair return on FVRB on the basis of future appreciation is, therefore. speculative at best, and would deprive CCWC of the opportunity to earn a higher return if the value of its assets increases, which is contrary to the fair value standard.

VI. COMMENTS ON STAFF'S FINANCIAL RISK ADJUSTMENT FOR CHAPARRAL CITY WATER COMPANY.

Q. DO YOU HAVE COMMENTS REGARDING STAFF'S FINANCIAL RISK ADJUSTMENT?

A. Yes. I have reviewed the basis for Staff's financial risk adjustment and examined Staff's work papers. I have found several problems with the computation. First, a beta for CCWC is required to make this adjustment, yet I found no market beta for CCWC in Staff's testimony or work papers. Staff assumes the beta of the large publicly traded utility companies is the beta for CCWC. Consequently, there is no support for this adjustment. Second, Staff did not use the same inputs regarding the proposed capital structure for the water utility sample companies that Staff used in the past and the difference in the computed financial risk adjustment is 70 basis

points. Third, Staff does not use market value capital structures when unlevering and relevering the betas. This is an assumption of the Hamada method which Staff employs. *See* Chaves DT at 34.

Based on my computation of the financial risk adjustment using Staff's models, the downward financial risk adjustment should be no more than 10 basis points – 170 basis points less than Staff's 180 basis point recommendation.

Q. BRIEFLY EXPLAIN THE BASIS OF STAFF'S FINANCIAL RISK ADJUSTMENT COMPUTATION?

A. Staff's financial risk estimation is based upon the methodology developed by Professor Hamada of the University of Chicago, which incorporates the beta of a levered firm to that of its unlevered counterpart. The equation is

$$\beta_L = \beta_U[1 + (1 - T)\varphi]$$

where β_L and β_U are the levered and unlevered betas, respectively, T is the tax rate, and φ the leverage, defined as the ratio of debt and equity of the firm. In simple terms, Staff unlevers the average beta of the six publicly traded water utilities in its sample using a ratio of debt and equity. Once the unlevered beta is determined, Staff relevers the beta using the capital structure of the subject utility. The relevered beta is then used in Staff's CAPM models, and the new CAPM results are compared to Staff's original CAPM results. The computed difference is the basis of the financial risk adjustment.

Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT STAFF HAS CHANGED THE WAY IT COMPUTED ITS FINANCIAL RISK ADJUSTMENT AND THE DIFFERENCE IN THE COMPUTED FINANCIAL RISK ADJUSTMENT BASED ON THOSE CHANGES.

A. First, let me say that what prompted a more thorough review of Staff's financial risk adjustment was the rather shocking 180 basis point reduction to the cost of

equity in this case. In my experience, I have never seen a financial risk adjustment of that magnitude recommended by Staff. The largest downward financial risk adjustment that I have seen recommended by Staff and adopted by the Commission was in the recent Gold Canyon Sewer Company ("Gold Canyon") rate case (Decision 69664 June 24, 2007). In the Gold Canyon case, Staff recommended a 100 basis point reduction to the cost of equity due to a capital structure consisting of 100 percent equity. I reviewed the Staff work papers in the Gold Canyon matter and compared them with the Staff's work papers in the instant case in order to try to discern why the adjustment was so large. In the Gold Canyon case, the capital structure Staff assumed when it unlevered the beta was 40 percent debt and 60 percent equity. In the instant case, Staff assumed a capital structure of 50 percent debt and 50 percent equity.

Q. ISN'T THE 50 PERCENT DEBT AND 50 PERCENT EQUITY CAPITAL STRUCTURE THE ACTUAL BOOK CAPITAL STRUCTURES OF THE WATER UTILITY SAMPLE COMPANIES IN THE INSTANT CASE?

A. Yes. However, in the Gold Canyon case, the actual capital structures were more similar to a 50/50 debt/equity capital structure than the 40/60 debt equity capital structure employed by Staff.

Q. COULD THIS HAVE BEEN AN OVERSIGHT BY STAFF?

A. I am not sure. But reluctantly, I had to defend Staff's financial risk adjustment in the Gold Canyon rehearing order to preserve the results of the initial decision in that case. I pointed out that Staff used an assumed capital structure of 40 percent debt and 60 percent equity

Q. WHY WOULD A 40/60 DEBT/EQUITY CAPITAL STRUCTURE BE USED TO UNLEVER THE BETA AS OPPOSED TO THE AVERAGE ACTUAL BOOK DEBT/EQUITY CAPITAL STRUCTURES OF THE PUBLICLY

TRADED WATER UTILITIES?

A. That question should probably be better answered by Staff. However, presumably, it is to keep the financial risk reasonable and to encourage utilities to maintain healthy capital structures by not penalizing utilities for having capital structures with debt in the capital structure as great as the larger, publicly traded water utilities. If the view is that utilities should ordinarily have no more than 40 percent debt in their capital structure, then it would make sense to use the 40/60 debt/equity ratio when unlevering the beta in the financial risk computation. For example, if a utility had a capital structure of 35 percent debt and 65 percent equity, Staff's risk adjustment methodology would not produce as high of a downward financial risk adjustment using a 40/60 debt/equity capital structure to unlever the beta as opposed to unlevering the beta using a 50/50 debt/equity capital structure. Of course, if that is the underlying rationale, it should be consistently applied for capital structures of up to 40/60 debt/equity. Then, if Staff actually recommends a financial risk adjustment, their approach will be consist from case to case and not appear to be result-driven.

Q. **WHAT WOULD HAPPEN IF A UTILITY EXCEEDED 40 PERCENT DEBT IN ITS CAPITAL STRUCTURE?**

A. If a utility exceeded 40 percent debt in its capital structure, the methodology employing a 40/60 debt/equity capital structure to unlever the beta would produce a positive financial risk adjustment - essentially rewarding companies for having an unhealthy capital structure. In those cases, Staff may have to use another approach to address the higher leverage. Or, as has happened in other cases, Staff simply may have to not propose a financial risk adjustment unless the percentage of debt is substantial, say greater than 60 percent. In other words, a financial risk adjustment should be used only in more extreme cases, where there is very little (or no) debt or

a significant amount of debt in the capital structure.

Q. WHAT IS THE DIFFERENCE IN THE FINANCIAL RISK ADJUSTMENT USING THE 40/60 AND 50/50 DEBT/EQUITY CAPITAL STRUCTURES TO UNLEVER THE BETA IN THE FINANCIAL RISK COMPUTATION?

A. 70 basis points. The financial risk computation using 40/60 debt/equity produces a 110 basis point downward financial risk adjustment as opposed to the 180 basis points recommended by Staff in this case.

Q. DOES STAFF CONSISTENTLY RECOMMEND A FINANCIAL RISK ADJUSTMENT WHEN THE CAPITAL STRUCTURE IS DIFFERENT THAN THE 40/60 DEBT/EQUITY CAPITAL STRUCTURE?

A. Based on the available information to me at this time, no. I have not been able to complete a thorough analysis, in part, because Staff has not been forthcoming in its responses to the Company data requests on this subject. *See* Staff Responses to Company Data Request 1.51, attached hereto in Exhibit 7. However, the following is a table of recent cases showing the capital structure, Staff's unadjusted cost of equity, Staff's recommended financial risk premium, and Staff's recommended cost of equity.

Company (Docket/Decision/Date)	Capital Structure Debt/Equity	Staff Unadjtd ROE	Financial Risk Adjust.	Staff ROE
Gold Canyon Sewer Company (SW-02519A-06-0015, ACC No. 69664 Jun. 28, 2005)	0/100	10.2%	-1.0%	9.2%

Black Mountain Sewer Company (SW-02361A-05-0657, ACC No. 69164 Dec. 5, 2006)	0/100	9.6%	0.0%	9.6%
Goodman Water Company (W-02500A-06-0281, ACC 69404 Apr. 16, 2007)	0/100	9.3%	0.0%	9.3%
Arizona Water – Eastern Group (W-01445A-02-0619, ACC No. 66849 March 15, 2004)	34/66	9.2%	-0.2%	9.0%
Arizona Water – Western Group (W-01445A-04-0650, ACC No. 68302 Nov. 14, 2005)	27/73	9.2%	0.0%	9.2%
Chaparral City Water Company (W-02113A-07-0551	24/76	11.8%	-1.8%	10.0%

As the data in the table shows, Staff has not a recommended financial risk adjustment on a consistent basis.

Q. SHOULDN'T WE LOOK AT THESE CASES AND THE CIRCUMSTANCES IN EACH CASE BEFORE MAKING ANY PARTICULAR CONCLUSIONS ABOUT WHETHER A FINANCIAL RISK ADJUSTMENT IS CONSISTENTLY RECOMMENDED BY STAFF?

A. Yes. However, the view of Staff has been that the only specific risk that should be considered is financial risk. The standard for whether a utility has more or less

financial risk than the sample publicly traded water utilities is whether the utility has more or less debt than the sample publicly traded water utilities. Consequently, there are no firm-specific factors that would appear relevant other than capital structure, and I am not aware of Staff discussing any firm-specific risk factors in connection with recommending a financial risk adjustment. By this measure and based on the limited sample provided above, Staff has been inconsistent.

Q. PLEASE EXPLAIN WHY MARKET VALUE CAPITAL STRUCTURES SHOULD BE USED IN STAFF'S FINANCIAL RISK ADJUSTMENT AND YOUR COMPUTED FINANCIAL RISK ADJUSTMENT OF 10 BASIS POINTS.

A. Professor Hamada developed his methodology using market values of the firm. Market values are relevant.[3] Other authorities in the subject of finance recognize that market values of the firm are relevant when it comes to leverage and financial risk.[4] This is logical given that Professor Hamada's formula is an extension of the CAPM, which is a market-based model that does not consider book or accounting data, as I have explained.

Q. HAS STAFF PROVIDED ANY SUPPORT FOR USING BOOK DEBT AND EQUITY?

A. No. Staff's discussion on the subject other their financial risk adjustment is sparse. *See* Chaves DT at 34-35. It is difficult to address this subject adequately at this time without knowing Staff's rationale and authoritative support for the use of book values. I have been unable to find any authority for using book value in the

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[3] "Effects of the Firm's Capital structure on Systematic Risk of Common Stock," *Journal of Finance*, Vol. 27 No. 2 (May 1972) 435-453.

[4] Shannon, P. Pratt, *Cost of Capital – Estimations and Applications*, John Wiley & Sons 83-85 (2nd ed. 2002), Roger A. Morin. *New Regulatory Finance* (2006) 221-25.

Hamada formula.

Q. WHAT FINANCIAL RISK ADJUSTMENT HAVE YOU COMPUTED USING STAFF'S MODELS AND MARKET VALUES?

A. I computed a downward financial risk adjustment of 10 basis points. I used the market value of equity for the publicly traded water utilities, which I computed using their market-to-book ratios as set forth in Staff's testimony. For debt, I used the book value of debt as the market value. According to Dr. Morin, this is an appropriate assumption.[5] To compute the market value of CCWC's equity, I used Staff's recommended FVRB less Staff's book value of debt for the Company as set forth in their testimony. This is consistent with the finding of value for the Company in the instant case. Alternatively, I could have estimated the market value of CCWC's equity using the average market-to-book ratio of the sample publicly traded utility companies. Using the FVRB approach is more conservative.

Q. BASED ON THE 10 BASIS POINT DOWNWARD FINANCIAL RISK ADJUSTMENT AND THE 41 BASIS POINT UPWARD INFLATION ADJUSTMENT, WHAT WOULD BE STAFF'S COST OF EQUITY, COST OF DEBT, "FAIR VALUE" RATE OF RETURN AND REQUIRED OPERATING INCOME?

A. Staff's cost of equity would increase by 330 basis points to 12.11 percent. Staff's cost of debt would increase by 161 basis points to 5.41 percent. Staff's rate of return would increase by 288 basis points to 10.48. Staff's required operating income would increase by $777,754 to $2,833,585 from $2,055,831.

Q. HOW DOES THIS COMPARE TO YOUR RECOMMENDED COST OF EQUITY, COST OF DEBT, RATE OF RETURN, AND REQUIRED

[5] Morin, *supra* at 224.

OPERATING INCOME AT THIS STAGE OF THE PROCEEDING?

A. I am recommending a cost of equity of 11.5 percent, a cost of debt of 5.1 percent, a WACC (ROR on FVRB) of 10.0 percent, and an operating income of $2,776,725.

VII. RESPONSE TO THE TO THE TESTIMONY OF MR. CHAVES ON THE COMPANY'S COST OF CAPITAL ANALYSIS

Q. PLEASE RESPOND TO MR. CHAVES' CRITICISMS ON PAGES 38-41 REGARDING YOUR RELIANCE ON ANALYSTS' FORECASTS OF EPS GROWTH FOR THE GROWTH RATE IN YOUR DCF MODELS?

A. Mr. Chaves' spends a considerable amount of time criticizing my approach in estimating the appropriate growth rate. But he admits that analysts are likely to have considered historical measures of growth in developing their forecasts. *See* Chaves Dt at 39. As I testified in my direct testimony, in estimating future growth, financial institutions and analysts have already taken into account all relevant historical information on a firm as well as other more recent information. Any further recognition of the past will double count what has already occurred. *See* Bourassa DT at 30. In fact, the study discussed in the article that I cited in my direct concluded that of the four methods of estimating the growth component of the DCF model, analysts' forecasts of earnings performed the best, while historic earnings and historic dividends growth were third and fourth, respectively.[6]

Staff gives 50 percent weight to historic growth rates, despite the extremely low results these inputs produce. Exhibits 5 and 6 illustrate the extremely low and unrealistic results produce by the historical DPS and EPS growth rates. For example, as shown in Exhibit 5, using historical DPS growth rates as estimates of growth produce indicated costs of equity *below* the cost of debt for 4 of the 6

[6] David A. Gordon, Myron J. Gordon and Lawrence I. Gould, "Choice Among Methods of Estimating Share Yield," *Journal of Portfolio Management* (Spring 1989) 50-55.

publicly traded water utilities – one as low as 3.8 percent. Thus, while Mr. Chaves criticizes my approach, he does not explain why indicated costs of equity below the cost of debt are reasonable and should be considered in this case. Again, analysts' forecasts would already incorporate historical information into their estimates. *Id.* It is therefore logical to conclude that Staff's growth estimates are distorted by incorporating the historical data and therefore cannot be used.

Mr. Chaves' reliance on the study by David Breman is also puzzling. *See* Chaves DT at 40. Even though Mr. Breman has criticized analysts' growth rates as being too optimistic, Mr. Breman also says *investors rely on those forecasts.*

> We have also seen that in spite of high error rates being recognized for decades, neither analysts nor investors who religiously depend on them have altered their methods in any way." (David Breman, *Contrarian Investment Strategies: The Next Generation.* Simon & Schuster. New York page 115-116.)

If investors rely on analysts' growth rate forecasts, those forecasts should be used to determine the cost of equity. Those growth rates influence the prices investors will pay for stocks and thus impact the dividend yields. The dividend yields change until the sum of the dividend yield plus the growth rate equals investors' perceived cost of equity. Had the growth forecasts been lower – as Mr. Chaves suggests they should be – the stock prices would be lower and dividend yields would be higher, but there would not necessarily be any difference in the ultimate estimate of the cost of equity.

Q. PLEASE RESPOND TO MR. CHAVES' TESTIMONY ON PAGE 44 OF HIS TESTIMONY THAT, DESPITE BEING EXTREMELY VOLATILE, STAFF'S CURRENT RISK PREMIUM RESULTS ARE A REFLECTION OF CHANGES IN THE MARKET'S CURRENT RISK PREMIUM RATHER THAN INSTABILITY IN STAFF'S METHOD?

A. Frankly, experts recommend that when estimating the market risk premium ("MRP") for the CAPM, analysts should rely on returns realized over long time periods.[7] The accuracy of the realized premium as an estimator for the prospective MRP increases by increasing the number of periods used to estimate it. If a current MRP is to be used in the CAPM, it should use a short enough period to gauge current market conditions, without making the estimate so volatile that it becomes an unreliable indicator of actual realized premiums for the near term. Staff's current MRP can produce wide swings in the indicated cost of equity within very short time periods. This makes it highly dependent on the date on which Staff chooses to perform its estimate. So two utilities with rate proceedings occurring at the approximately the same time could have very different cost of equity recommendations from Staff largely the result of their current MRP.

VIII. CRITICISMS OF RUCO'S COST OF CAPITAL ANALYSIS

Q. HOW DOES THE SAMPLE OF WATER UTILITIES MR. RIGSBY USED TO ESTIMATE THE COST OF EQUITY COMPARE TO THE UTILITIES USED BY THE COMPANY AND STAFF?

A. Mr. Rigsby used four publicly traded water utilities. He used the three largest water utilities out of the six water utilities that Mr. Chaves and I have used. Mr. Rigsby's fourth water company is Southwest Water Company. He used Southwest Water in his proxy group despite the fact that this company derives 57 percent of its revenue from unregulated activities. In addition, Southwest Water's return on common equity averaged less than 4.5 percent from 2004 through 2007, and is projected by *Value line* to earn returns on common equity of 4.5 percent and 6.0 percent for 2008 and 2009, respectively..

Q. TO YOUR KNOWLEDGE, HAS THE COMMISSION EVER USED

[7] Morin, *supra*, at 157.

SOUTHWEST WATER IN ESTIMATING THE COST OF EQUITY FOR A WATER OR WASTEWATER UTILITY?

A. No, not to my knowledge. Nor, to my knowledge, has Staff ever used Southwest Water.

Q. DOES MR. RIGSBY ALSO USE SAMPLE GAS COMPANIES TO DEVELOP HIS ESTIMATE OF THE COST OF EQUITY? HOW DO THEY COMPARE TO THE SAMPLE WATER COMPANIES?

A. Yes. He uses eight natural gas companies. However, the sample gas utilities are less risky and therefore are not comparable to water utilities. His sample water companies, for example, have an average beta of 1.05, while his sample gas companies have an average beta of just 0.82. *See* RUCO Schedule WAR-7, page 1 of 2. That means that the equity cost for the water utility should be substantially greater than the gas companies, based on their relative riskiness.

Q. HAS THIS ISSUE EVER COME UP BEFORE?

A. Yes. In several prior cases, water utilities presented evidence of the cost of equity using financial data for a similar group of publicly traded gas companies, which at that time had a higher average beta than the water utility sample. In rejecting this evidence, the Commission adopted Staff's argument that because the water utility sample had a lower average beta than the gas utility sample, the cost of equity for the water utility should be lower. For example, in Arizona Water Company's Eastern Group rate case, the water utility sample had an average beta of 0.59, while the gas utility sample had an average beta of 0.69. Staff estimated that based on the difference in the two groups' betas, the sample gas companies has an equity cost that is 100 basis points higher than the water utilities. Decision No. 66849 (March 19, 2004) at 21. *See also Arizona-American Water Company*, Decision No. 67093 (June 30, 2004) at 27.

Q. DOESN'T SOUTHWEST GAS HAVE A PENDING RATE CASE? AND IF SO, IS THAT RELEVANT TO THIS CASE?

A. Yes, there is a pending Southwest Gas rate case. It is relevant from the standpoint that CCWC's cost of equity is significantly higher than the gas sample. Therefore, as the Commission indicated in the decisions cited above, CCWC's authorized return on equity should be substantially higher than Southwest Gas' authorized return on equity. At this point, however, the Commission has not issued decision in Southwest Gas' rate case.

Q. WHAT IS THE IMPACT OF RUCO'S USE OF THE GAS UTILITIES TO ESTIMATE THE COST OF EQUITY IN THIS CASE?

A. By averaging the results of his equity cost estimate for the water utility sample with his equity cost estimate for the gas utility sample, Mr. Rigsby has depressed the cost of equity estimates. For example, the average of Mr. Rigsby's CAPM estimates for the water companies and gas companies are 8.9 percent and 7.6 percent, respectively. This is a 130 basis point difference. His CAPM estimate for the gas utilities is 140 basis points below the current cost of Baa investment grade bonds, which is over 9 percent. His overall estimate of 8.83 percent is also less than the current cost of investment grade bonds, which demonstrates that RUCO's methods are biased downward.

Q. WHAT OTHER CONCERNS DO YOU HAVE WITH RESPECT TO MR. RIGBY'S COST OF CAPITAL ANALYSIS?

A. Mr. Rigsby employs a geometric average in calculating the risk premium in his CAPM. His choice to use geometric average depresses his cost of equity estimate downward. An arithmetic average is the correct approach to use in estimating the cost of capital, as various experts have explained.[8] In fact, the CAPM was

[8] Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance* 156-157 (7th ed. 2003);

developed on the premise of expected returns being averages and risk being measured with the standard deviation. As Dr. Morin states,

> Since the latter **[standard deviation]** is estimated around the arithmetic average, and not the geometric average, it is logical to stay with arithmetic averages to estimate the market risk premium. In fact, annual returns are uncorrelated over time, and the objective is to estimate the market risk premium for the next year, the arithmetic average is the best unbiased estimate of the premium.[9]

Q. WHAT IS THE OVERALL COST OF EQUITY ESTIMATE FOR MR. RIGSBY'S WATER UTILITY SAMPLE COMPANIES EXCLUDING THE GEOMETRIC MEAN CAPM ESTIMATE?

A. 9.39 percent, which is the average of his DCF model estimate of 9.0% and his CAPM estimate (using the correct arithmetic average) of 9.78%. By including the sample gas companies in his cost of capital analysis and using a geometric average in his the CAPM estimates, Mr. Rigsby has managed to shave nearly 60 basis points from a cost of equity estimate strictly based on water companies, which are more comparable to CCWC than the gas companies in Mr. Rigsby's sample.

Q. DOES THAT CONCLUDE YOUR REBUTTAL TESTIMONY MR. BOURASSA?

A. Yes.

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Morin, *supra*, at 156-157; Ibbotson SBBI 2008 Valuation Yearbook 77-78.

[9] Morin, *supra*, at 157-157.

BOURASSA
COST OF CAPITAL
EXHIBITS 1-6

Exhibit 1
Witness: Bourassa

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Market Price

Line No.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
							EXPECTED CASH FLOWS						
	Company	Projected Div	5 Year Historical Average Div. Growth	Recent Price	5 Year Historical Annual Compound Price Growth	Year 5 Price	Recent Price	Year 1 Div	Year 2 Div	Year 3 Div	Year 4 Div	Year 5 Div + Price	**Implied ROE =** Internal Rate of Return (Cols 7-12)
7	1. American States	$ 0.98	2.02%	$ 38.48	13.68%	$ 73.05	$ (38.48)	$ 0.98	$ 1.00	$ 1.02	$ 1.04	$ 74.12	15.8%
8	2. Aqua America	0.52	8.80%	17.55	13.72%	33.38	(17.55)	0.52	0.57	0.62	0.67	34.11	16.4%
9	3. California Water	1.17	0.71%	37.87	12.76%	69.05	(37.87)	1.17	1.27	1.39	1.51	70.56	15.6%
10	4. Connecticut Water	0.89	1.51%	25.81	1.91%	28.37	(25.81)	0.89	0.97	1.05	1.15	29.54	5.8%
11	5. Middlesex	0.71	1.94%	17.18	6.86%	23.93	(17.18)	0.71	0.77	0.84	0.91	24.86	11.1%
12	6. SJW Corp.	0.66	7.43%	29.52	24.69%	88.97	(29.52)	0.66	0.72	0.78	0.85	89.89	26.4%
15	GROUP AVERAGE		3.74%		12.27%								15.2%
16	GROUP MEDIAN		1.98%		13.22%								15.7%

Sources:
Value Line Data
Yahoo Finance October 2, 2008

Chaparral City Water Company
Historical Compound Annual Total Market Returns

Exhibit 2
Witness: Bourassa

Line No.	Company	3 Yr.** Return	5 Yr.** Return	10 Yr.*** Return
1	1. American States	19.08%	16.30%	19.95%
2	2. Aqua America	9.00%	15.84%	15.62%
3	3. California Water	5.58%	16.07%	9.20%
4	4. Connecticut Water	3.15%	5.38%	12.18%
5	5. Middlesex	6.97%	10.43%	13.15%
6	6. SJW Corp.	28.62%	26.51%	17.90%
7				
8	Average	12.07%	15.09%	14.67%

* 2005-2007
** 2003-2007
*** 1998-2007

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Historical Compound Annual Capital Appreciation Returns

Exhibit 3
Witness: Bourassa

Line No.	Company	3 Yr.* Return	5 Yr.** Return	10 Yr.*** Return
8	1. American States	16.28%	13.68%	12.35%
9	2. Aqua America	6.81%	13.72%	13.87%
10	3. California Water	2.47%	12.76%	6.33%
11	4. Connecticut Water	-0.40%	1.91%	8.84%
12	5. Middlesex	3.35%	6.86%	9.88%
13	6. SJW Corp.	26.63%	24.69%	16.43%
17	Average	9.19%	12.27%	11.28%

23 * 2005-2007
24 ** 2003-2007
25 *** 1998-2007

27 Sources:
28 Value Line Data
29 Yahoo Finance

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Analyst Estimates of DPS Growth

Exhibit 4
Witness: Bourassa

Line No.	Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Div. Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)	[6] Indicated Equity Cost k=Div Yld + G (Cols 1+4)
1	1. American States	38.48	1.00	2.60%	4.50%	7.1%	*
2	2. Aqua America	17.55	0.50	2.85%	7.50%	10.3%	10.3%
3	3. California Water	37.87	1.17	3.09%	1.00%	4.1%	*
4	4. Connecticut Water	25.81	0.89	3.43%	Not Available		
5	5. Middlesex	17.18	0.71	4.11%	Not Available		
6	6. SJW Corp.	29.52	0.66	2.22%	Not Available		
7							
8	GROUP AVERAGE					7.2%	10.3%
9	GROUP MEDIAN					7.1%	10.3%
10							
11	Current Baa interest rate (October 16, 2008)					9.1%	
12							
13	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Top 10					8.0%	
14	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Bottom 10					6.8%	
15	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Consensus					7.3%	
16							
17	* Indicated equity cost below current cost of debt (Baa) or negative growth.						
18							
19	Sources:						
20	Value Line Analyzer Data September 2008						
21	Yahoo Finance October 2, 2008						
22	Federal Reserve October 16, 2008						
23	Blue Chip Financial Forecast June 2008						

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using 5 Year Historical Dividend Growth

Exhibit 5
Witness: Bourassa

Line No.	Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Historical Div. Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)	[6] Indicated Equity Cost k=Div Yld + G (Cols 1+4)
1	1. American States	38.48	1.00	2.60%	2.02%	4.6%	*
2	2. Aqua America	17.55	0.50	2.85%	8.80%	11.6%	11.6%
3	3. California Water	37.87	1.17	3.09%	0.71%	3.8%	*
4	4. Connecticut Water	25.81	0.89	3.43%	1.51%	4.9%	*
5	5. Middlesex	17.18	0.71	4.11%	1.94%	6.1%	*
6	6. SJW Corp.	29.52	0.66	2.22%	7.43%	9.7%	9.7%
7	GROUP AVERAGE				3.7%	6.8%	10.7%
8	GROUP MEDIAN				4.1%	5.5%	10.7%
9	Current Baa interest rate (October 16, 2008)					9.1%	
10	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Top 10					8.0%	
11	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Bottom 10					6.8%	
12	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Consensus					7.3%	

* Indicated equity cost below current cost of debt (Baa) or negative growth.

Sources:
- Value Line Analyzer Data September 2008
- Yahoo Finance October 2, 2008
- Federal Reserve October 16, 2008
- Blue Chip Financial Forecast June 2008

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Historical
Using 5 Year Historical EPS Growth

Exhibit 6
Witness: Bourassa

Line No.	Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Historical EPS Growth	(5) Indicated Equity Cost k=Div Yld + G (Cols 1+4)	[6] Indicated Equity Cost k=Div Yld + G (Cols 1+4)
7	1. American States	38.48	1.00	2.60%	8.22%	10.8%	10.8%
8	2. Aqua America	17.55	0.50	2.85%	5.76%	8.6%	*
9	3. California Water	37.87	1.17	3.09%	4.25%	7.3%	*
10	4. Connecticut Water	25.81	0.89	3.43%	Negative	NM	NM
11	5. Middlesex	17.18	0.71	4.11%	4.42%	8.5%	*
12	6. SJW Corp.	29.52	0.66	2.22%	6.93%	9.2%	9.2%
15	GROUP AVERAGE				5.9%	8.9%	10.0%
16	GROUP MEDIAN				5.8%	8.6%	10.0%
18	Current Baa interest rate (October 16, 2008)					9.1%	
20	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Top 10					8.0%	
21	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Bottom 10					6.8%	
22	Blue Chip Forecast Baa Corporate Bond Interest Rate 2011 Consensus					7.3%	

24 * Indicated equity cost below current cost of debt (Baa) or negative growth.

26 Sources:
27 Value Line Analyzer Data September 2008
28 Yahoo Finance October 2, 2008
29 Federal Reserve October 16, 2008
30 Blue Chip Financial Forecast June 2008

BOURASSA
COST OF CAPITAL
EXHIBIT 7

1.52. Has Staff proposed an adjustment to its recommended return on equity utilizing the Hamada formula, or a similar adjustment that takes into account the amount of debt in that utility's capital structure in any utility rate cases in the past 18 months? If Staff has proposed such an adjustment, provide a copy of Staff's cost of capital testimony, and all workpapers and other materials showing how it was calculated.

RESPONSE: Objection, this data request is overbroad and burdensome, requests information that is not maintained in the normal course of business and would be time-consuming and burdensome to compile. Notwithstanding the above, the following response is provided.

Staff has in prior cases proposed an adjustment to its recommended return on equity utilizing the Hamada formula. Copies of Staff's cost of capital testimony are available through Docket Control. Staff would point to Docket No. 07-0209

Respondent: Pedro Chaves

FENNEMORE CRAIG
Norman D. James (No. 006901)
Jay L. Shapiro (No. 014650)
3003 N. Central Ave.
Suite 2600
Phoenix, Arizona 85012
Attorneys for Chaparral City Water Company

BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	DOCKET NO. W-02113A-07-0551

REJOINDER TESTIMONY OF

THOMAS J. BOURASSA

(COST OF CAPITAL)

December 4, 2008

EXHIBIT
A-21
ADMITTED

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I. INTRODUCTION AND SUMMARY OF THE COMPANY'S FINAL POSITION AND RECOMMENDATIONS ON THE COST OF CAPITAL

Q. PLEASE STATE YOUR NAME AND ADDRESS.

A. My name is Thomas J. Bourassa. My business address is 139 W. Wood Drive, Phoenix, Arizona 85029.

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS CASE?

A. On behalf of the applicant, Chaparral City Water Company ("Chaparral City" or "the Company").

Q. ARE YOU THE SAME THOMAS J. BOURASSA THAT FILED DIRECT AND REBUTTAL TESTIMONY IN THIS CASE?

A. Yes. I previously filed testimony on the appropriate cost of capital and rate of return to be applied to the Company's fair value rate base. I also have filed rejoinder testimony addressing the Company's final position on its rate base, income statement (revenue and operating expenses), required increase in revenue, and rate design and proposed rates and charges for service. That testimony has been filed separately.

Q. WHAT IS THE PURPOSE OF YOUR REJOINDER TESTIMONY?

A. I will provide an updated estimate of the cost of equity and discuss the basis for the Company's proposed rate of return, which is 9.96 percent. I also will provide an updated estimate of the cost of equity using the methodology employed by the Utilities Division ("Staff") and accepted by the Arizona Corporation Commission ("Commission") in recent rate cases for Arizona water and wastewater utilities for comparison purposes. Finally, I will respond to the surrebuttal testimony of Mr. William A. Rigsby ("Rigsby Sb.") on behalf of the Residential Utility Consumer Office ("RUCO"). My rejoinder schedules and exhibits that relate to the cost of capital are attached to this testimony.

Q. PLEASE PROVIDE A SUMMARY OF THE COMPANY'S FINAL POSITION REGARDING THE COST OF CAPITAL.

A. The Company's final position is virtually unchanged from the Company's rebuttal position:

Cost of Equity and WACC

My updated estimate of the cost of equity, 13.2 percent, is slightly higher than my rebuttal estimate, 13.0 percent. Chaparral City, however, continues to recommend an equity return of 11.5 percent to be conservative and minimize disputes over the cost of equity. The cost of short-term debt has decreased from 3.97 percent to 2.88 percent, while the cost of long-term debt, 5.33 percent, is unchanged. The resulting weighted cost of capital ("WACC") is 9.96 percent.

Application of WACC to FVRB

Chaparral City continues to maintain that the WACC should be applied to the Company's fair value rate base ("FVRB") to determine the Company's required operating income, without any adjustment. The cost of equity is estimated using two market-based finance models, the Discounted Cash Flow ("DCF") model and the Capital Asset Pricing Model ("CAPM"). These models rely on current stock prices and other market data for a sample group of publicly traded water utilities. Neither model considers the rate bases of the sample utilities or Chaparral City's rate base. Moreover, because the WACC depends on the percentages of debt and equity in the Company's capital structure, and not on the actual amount invested in plant, a WACC-derived return can be used with any rate base. There is no "matching" problem, as has been suggested.

Adjustment for Financial Risk

Chaparral City opposes an adjustment to its cost of equity based on financial risk. The parties agree that the Company's capital structure consists of approximately 24

percent debt and 76 percent equity. The Commission has not reduced the cost of equity in situations like this, where approximately one-quarter of the utility's capital structure consists of debt. *See, e.g.,* Arizona Water Company, Decision No. 68302 (Nov. 14, 2005) (no adjustment for financial risk appropriate when the utility's capital structure contained 73 percent equity). Where downward adjustments have been made, the utility's capital structure has typically contained 100 percent equity and no debt. Moreover, even in those cases, the downward adjustment has been no more than 100 basis points, not 180 basis points as proposed by Staff here.

Adjustment for "Inflation"

Chaparral City continues to oppose any adjustment based on "inflation" being "over-counted" because the cost of equity, estimated by means of the DCF and CAPM models, and the FVRB both contain an "inflation component." *See* Decision No. 70441 (July 28, 2008) at 33 (appeal pending). In reality, inflation adversely impacts utilities to a far greater extent than other businesses because they cannot adjust their rates in response to price increases, and must wait until new rates are approved following a rate case. For this reason, inflation is continually eroding the Company's earnings. Yet the impact of inflation on earnings is ignored by Staff and RUCO, resulting in unlawful piecemeal rate-making.

Moreover, the Company's FVRB is not simply the "inflated" cost of its plant. Rather, it is based on the average of its original cost rate base ("OCRB") and its reconstruction cost rate base ("RCRB"). By definition, the original or book cost of the Company's plant contains no inflationary component, as Staff has acknowledged. *See* Gordon Fox Direct Testimony ("Fox Dt.) at 7-8. Further, the Company's RCRB is not based on the CPI or other measures of inflation, but is the current value of its plant based on its reconstruction cost. That value is reduced by

averaging the OCRB with the RCRB to derive fair value. If an adjustment for inflation is authorized, it must be reduced by at least one-half to properly account for the use of OCRB in the FVRB.

Finally, at present, inflation is non-existent. The parties agree that an appropriate method of estimating the expected, future inflation component in the cost of equity may be estimated by subtracting the yields on Treasury inflation protected securities ("TIPS") from the yields on Treasury securities with constant maturities. The present inflationary component indicated by this method is a negative 1.18 percent, based on the average yields on 5, 7 and 10-year Treasuries. According to Staff, most investors hold securities for an intermediate period, i.e., 5 to 10 years. Therefore, if an inflation adjustment is made, it should increase the cost of equity and overall rate of return. Even if 20-year Treasuries are used instead, the indicated inflation is about 80 basis points. In that case, however, the current yield on a 20-year Treasury should be used in the CAPM, producing a higher cost of equity.

II. SUMMARY OF THE PARTIES' RECOMMENDED CAPITAL STRUCTURE AND COST OF DEBT

Q. WHAT ARE THE PARTIES' RECOMMENDED CAPITAL STRUCTURES FOR THE COMPANY?

A. The parties' recommended capital structures are very similar, as shown in the following table:

	Company	Staff	RUCO
Short-Term Debt	$1,400,000	$2,050,000	$1,400,000
Long-Term Debt	6,865,000	6,585,000	6,585,000
Common Equity	27,028,873	26,690,000	26,362,476
Total Capital	$35,293,873	$35,325,000	$34,347,476

The differences are due to the Company's use of the capital structure at the end of the test year while the other parties went outside the test year.

Notably, all of the parties acknowledge that the Company's total capitalization significantly exceeds the Company's OCRB, its reconstruction cost rate base RCRB and its fair value rate base FVRB, which is derived by averaging the OCRB and RCRB. The percentages of debt and equity, and not the amounts of debt and equity, are the key inputs used to determine the weighted cost of capital WACC.

Q. WHAT ARE THE PERCENTAGES OF DEBT AND EQUITY THAT ARE BEING RECOMMENDED BY EACH PARTY?

A. Again, the percentages of debt and equity being recommended by each party are similar, as shown in the following table:

	Company	Staff	RUCO
Short-Term Debt	3.97%	5.8%	4.08%
Long-Term Debt	19.45%	18.6%	19.17%
Common Equity	76.58%	75.6%	76.75%

As the foregoing table shows, while there are certain minor differences, the parties are in agreement that the Company's capital structure consists of approximately 24 percent debt and 76 percent equity. As previously stated, the percentages of debt and equity and their respective costs are the key inputs that are used in computing the WACC, rather than the actual amounts of debt and equity in the capital structure.

Q. WHAT ARE THE COSTS OF DEBT RECOMMENDED BY THE PARTIES AND HOW WERE THEY DERIVED?

A. Again, each party's proposed cost of debt is approximately the same. The

Company's recommended cost of debt is 4.92 percent, based on a cost of short-term debt of 2.88 percent and a cost of long-term debt of 5.33 percent. The Company's short-term debt consists of funds provided by its parent, which borrows under a credit facility with interest based on the London Interbank Offered Rate ("LIBOR"). The current 12-month LIBOR rate is 2.88 percent, which is slightly higher than RUCO's proposed rate of 2.71 percent. The Company's long-term debt consists of long-term bonds with fixed interest rates and annual interest payments, which are unaffected by inflation or by changes in the capital markets.

Q. RUCO'S WITNESS, MR. RIGSBY, ASSERTS THAT STAFF HAS ELIMINATED SHORT-TERM DEBT FROM ITS RECOMMENDED CAPITAL STRUCTURE. IS HE CORRECT?

A. No. Mr. Rigsby apparently misread Mr. Chaves' testimony. Mr. Chaves has proposed a composite cost of debt of 5.0%. The composite rate includes the cost of both short-term and long-term debt. *See* Chaves Dt., Schedule PMC-10.

III. UPDATED ESTIMATE OF THE COST OF EQUITY AND COST OF CAPITAL

A. <u>The Company's Updated Cost of Equity Estimate</u>

Q. PLEASE SUMMARIZE YOUR UPDATED COST OF CAPITAL ANALYSIS.

A. I have performed new estimates of the cost of equity using the Commission's preferred models, the DCF model and the CAPM. The schedules containing my updated cost of capital analysis are attached to this testimony at Tab 1. The table below summarizes the results of my updated analysis using those models:

	Range	Midpoint
DCF Constant Growth (earnings growth)	10.7% - 14.9%	12.8%
DCF Constant Growth (sustainable growth)	8.6% - 12.3%	10.4%

Two-Stage Growth Model	10.3% - 13.2%	11.8%
DCF Average Results	9.9% - 13.5%	11.7%
CAPM Historical Market Risk Premium		9.8%
CAPM Current Market Risk Premium		19.4%
CAPM Average Result		14.6%
Average		**13.2%**

The overall result is approximately the same as the estimate derived from these models when I prepared my rebuttal testimony last October, which was 13.0 percent. As I explained in my rebuttal testimony, these results are not surprising given the increase in the average beta of the water utility sample group, which is currently 0.98 and is substantially greater than the average beta of the same utilities in the Company's previous rate case, 0.68.[1] The water utility sample has become considerably more risky relative to the market as a whole, and investors require a higher return on equity to compensate for that risk.

There are other factors that also affect the cost of equity, but to a large degree those factors offset one another. For example, Treasury rates have declined during the past several months, and are currently at very low levels. Thus, the "risk free" rates used in the CAPM are very low and tend to reduce the cost of equity. At the same time, the current market risk premium has increased as a result of recent stock market volatility. *Compare* Rejoinder Schedule D-4.13 *with* Rebuttal Schedule D-4.13. Likewise, the stock prices have declined, increasing the dividend yield from 3.2 percent to nearly 3.6 percent. *Compare* Rejoinder Schedule D-4.8 *with* Rebuttal Schedule D-4.8. As a result, there has been little change in the cost of equity estimate produced by the models.

[1] *See* Surrebuttal Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616, Exh. S-4, Schedule AXR-8.

Q. HAVE STAFF AND THE COMMISSION PREVIOUSLY RECOGNIZED THAT THE INPUTS USED IN THE COST OF EQUITY ESTIMATION MODELS TEND TO OFFSET EACH OTHER, RESULTING IN A REASONABLE COST OF EQUITY?

A. Yes. In Arizona Water Company's Western Group rate case, for example, the Commission adopted Staff's CAPM estimate, explaining:

> [W]hile interest rates have gone up, the cost of equity for the market as a whole as decreased, while the cost of equity for utilities has remained relatively stable. Staff states that while its witness in [Arizona Water Company's prior rate case] estimated an overall market risk premium at 13.1 percent, its current estimate is 7.8 percent ..., and this relative change in the risks of utilities as compared to the overall market is reflected in Staff's increased beta estimate, from 0.59 in the [prior case] to 0.68 in this case.

Decision No. 68302 at 38. A similar discussion appears in Decision No. 69164 (Dec. 5, 2006), which involved Black Mountain Sewer Corporation's request for rate increases. In that case, Mr. Chaves testified that changes in interest rates do not mean that the cost of equity will also change or even move in the same direction as interest rates. Thus, "while interest rates increased between the filing of [Mr. Chaves'] direct and surrebuttal testimonies, from 3.3 to 4.7 percent, Staff's current [market risk premium] declined from 13.1 percent to 5.7 percent, thereby offsetting the interest rate increase (Tr. 719-722)." Decision No. 69164 at 25. The same phenomenon is present in this case: While Treasury yields have declined, the betas of the water utilities in the sample group and the market risk premium have remained high, resulting in a cost of equity of approximately 13 percent.

B. <u>The Company's Updated Cost of Capital and Rate of Return</u>

Q. WHAT ARE THE COMPANY'S REVISED WACC AND ITS RECOMMENDED RATE OF RETURN ON FAIR VALUE RATE BASE?

A. As previously explained, the Company's capital structure consists of 23.42 percent debt and 76.58 percent common equity as shown on attached Rejoinder Schedule D-1. Despite my updated cost of capital analysis, Chaparral City is requesting a cost of equity of 11.5 percent. This results in a WACC of 9.96 percent, as shown on Rejoinder Schedule D-1, attached hereto.

The Company continues to maintain that the WACC be used as the rate of return and applied to the Company's fair value rate base FVRB to compute the Company's required operating income, consistent with the Company's position in its prior rate case, Docket No. W-02113A-04-0616.

Q. WHY ARE YOU RECOMMENDING A COST OF EQUITY OF ONLY 11.5 PERCENT WHEN YOUR FINANCIAL MODELS INDICATE THAT A HIGHER EQUITY RETURN IS APPROPRIATE?

A. The Company has elected to request a return of 11.5 percent on common equity. As I explained in my rebuttal testimony, the Company is willing to do so in order to minimize disputes and to keep the revenue increase at or below the increase requested in its direct filing. The Company realizes that an equity return of 13 percent would be controversial, even if it is indicated by the financial models and methods that have been used by Staff and approved by the Commission in numerous water and wastewater utility rate cases during the past six or seven years. The Company hopes to avoid a dispute over the cost of equity and to simplify this case, which has already been pending for more than 14 months.

IV. UPDATED ESTIMATE OF STAFF'S COST OF EQUITY AND COMMENTS ON STAFF'S METHODOLOGY.

A. Overview of Staff's Position

Q. DID STAFF FILE SURREBUTTAL TESTIMONY ON THE COST OF CAPITAL?

A. No. Staff has elected to rely on the Direct Testimony of Pedro Chaves, filed on October 3, 2008.

Q. IN SUMMARY, WHAT DOES MR. CHAVES RECOMMEND?

A. In his direct testimony, Mr. Chaves estimated that the cost of equity is 11.8 percent based on the average cost of equity produced by the DCF and CAPM models as applied to the sample of six publicly traded water utilities. *See* Direct Testimony of Pedro M. Chaves ("Chaves Dt") at 34 and Schedule PMC-3. He then adjusted the cost of equity downward by 180 basis points based on the Company's purported financial risk. *Id.* at 34-35 and Schedule PMC-3.

Mr. Chaves' calculated a cost of debt of 5.0 percent, which was based on a short-term debt rate of 3.8 percent and a long-term debt rate of 5.4 percent. *Id.* at 6 and Schedule PMC-10. He also calculated a capital structure consisting of 24.4 percent debt and 75.6 percent equity. *Id.*

Using that capital structure, Mr. Chaves determined that the Company's WACC is 8.8 percent. *Id.* at 35. Then, Mr. Chaves adjusted the WACC downward by subtracting 1.2 percent as an adjustment for inflation, resulting in an adjusted WACC of 7.6 percent. *Id.* at 36 and Schedule PMC-2. That adjustment is supported by the testimony of Mr. Fox, the Staff Public Utilities Analyst Manager. Mr. Fox and Mr. Chaves maintain the inflation factor should recognize that the FVRB reflects a 50/50 weighting of OCRB and RCRB. Because the Company's OCRB (which is one-half of the FVRB) is based solely on historic or "book" costs and is unaffected by changes in price levels, they recommends that the inflation factor be reduced by one-half. Fox Dt. at 8-9; Chaves Dt. at 35-36. But they also recommend that the inflation factor be applied to the cost of debt, even though the annual cost (interest) is fixed and does not change in response to changes in price levels, as I discussed in my rebuttal testimony. *See* Bourassa Rb. at 21-22. I will

address inflation later in my testimony, and will provide an updated estimate of current inflation.

B. Updated Cost of Equity Estimate Using Staff's Methods

Q. DID YOU PREPARE AN UPDATED ESTIMATE OF THE COST OF EQUITY USING STAFF'S METHODS AND INPUTS?

A. Yes. It is attached to this testimony at Tab 2 as Schedule TJB-1 through Schedule TJB-13. I relied on the work papers provided by Staff following its direct filing to ensure that I followed Staff's exact approach. I used the constant growth DCF model and two-stage growth DCF model and the CAPM with historical and current market risk premiums, with the same inputs used by Staff. The table below summarizes the results of my updated analysis using Staff's models and inputs:

DCF Constant Growth	9.1%
Two-Stage Growth Model	10.2%
DCF Average Results	9.7%
CAPM Historical Market Risk Premium	10.0%
CAPM Current Market Risk Premium	29.8%
Average CAPM Results	19.9%
Average Overall Results	**14.8%**

Q. WHY HAS STAFF'S COST OF EQUITY ESTIMATE INCREASED SO MUCH SINCE ITS DIRECT TESTIMONY WAS FILED?

A. Staff's cost of equity estimate increased from 11.8 percent to 14.8 percent between its direct filing and this filing primarily due to the result produced by Staff's CAPM model. More specifically, Staff's current market risk premium ("MRP") has increased substantially over the past two months. The method that Staff uses to estimate the current MRP is volatile, as I have testified in prior rate cases and as the Company's cost of capital witness in its prior case, Dr. Thomas Zepp,

explained to the Commission.[2] In the Company's prior case, Staff relied on its relatively low current MPR to reduce the CAPM estimate, producing a return on equity of 9.3 percent, even though interest rates and betas of the water utility sample had been increasing. As I explained above, in prior cases, the Commission has accepted Staff's method, and approved the resulting lower rates of return. In this case, the inputs into Staff's method are such that a very high current MPR is produced, increasing the cost of equity. This is simply the case of a very volatile method being volatile. To be consistent with prior decisions in water and wastewater utility rate cases, including Chaparral City's prior case, Staff's method should be used here.

Q. NEVERTHELESS, THE COMPANY IS NOT ARGUING THAT STAFF'S METHOD OF ESTIMATING THE CURRENT MRP SHOULD BE USED IN THIS CASE.

A. That is correct. While it is tempting to simply use Staff method, given that the Commission has consistently approved this method in water and wastewater rate cases, I have testified in the past that Staff's method produces unreliable results and should not be used. Moreover, as I have stated, the Company desires to avoid a dispute over the cost of equity, and will accept a return on equity of 11.5 percent, which is less than Staff's initial estimate of 11.8 percent.

Q. IT APPEARS THEN THAT THE PRIMARY AREA OF DISAGREEMENT WITH STAFF CONCERNS THE ADJUSTMENTS TO STAFF'S COST OF EQUITY ESTIMATE.

A. That is correct. Notwithstanding the volatility of Staff's method of estimating the

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[2] *See* Rebuttal Testimony of Thomas M. Zepp, Exh. A-8, Docket No. W-02113A-04-0616, at pp. 21-22. Dr. Zepp explained that between October 9, 2002, and April 15, 2005, Staff's current MPR fluctuated between 5.9 percent and 18.2 percent. *Id.* at 22. He suggested a more reliable way to estimate the current MRP, but the Commission adopted Staff's method.

current MRP, the models employed by the Company and Staff are similar in most respects, and we both rely on the same sample group of six publicly traded water utilities, which are the utilities that have been used by the Commission in setting rates for water and wastewater utilities for a number of years. As a result, our cost of equity estimates are similar.

Q. HOW DO THE COST OF EQUITY ESTIMATES OF THE COMPANY AND STAFF COMPARE TO RUCO'S COST OF EQUITY ESTIMATES?

A. RUCO continues to use a completely different sample of utilities as well as methods and approaches that depress the cost of equity. The results in this case are obvious:

Company Rebuttal	13.0%
Company Rejoinder	13.2%
Staff Direct	11.8%
Staff Updated	14.8%
RUCO Direct	8.83%
RUCO Surrebuttal	8.60%

I will address the problems with RUCO's methods later in this testimony. It is apparent, however, that RUCO's methods are quite different from those used by Staff and the Company, and produce an extremely low cost of equity.

C. <u>Staff's Financial Risk Adjustment</u>

Q. DID YOU ALSO RECOMPUTE STAFF'S FINANCIAL RISK ADJUSTMENT?

A. Yes. It is shown on Schedules TJB-11 through TJB-13. In doing so, I again followed Staff's method, which is the formula originally derived from the CAPM by Professor Hamada. *See* Bourassa Rb. at 29. I also used the book value of the equity in the sample utilities' capital structures, which, as I explained in my

rebuttal testimony, is not the correct method of implementing the Hamada formula. *Id.* at 34-35.

Q. WHAT IS STAFF'S UPDATED RISK ADJUSTMENT, USING THE BOOK VALUE OF EQUITY?

A. It would be 290 basis points, or nearly 3.0 percent! That is extraordinarily high. In my experience before the Commission, I have never seen a downward adjustment greater than 100 basis points, and I have only seen a downward adjustment when the utility had a capital structure consisting of 100 percent equity and no debt. The magnitude of this adjustment is driven by Staff's improper use of the book equity of the sample utilities, coupled with Staff's CAPM's model and, more specifically, its current MRP determination.[3]

Q. DID YOU RE-COMPUTE STAFF'S FINANCIAL RISK ADJUSTMENT USING THE MARKET VALUES OF THE SAMPLE UTILITIES' EQUITY?

A. Yes. This calculation is shown on Schedules TJB-14 through TJB-16. The use of the correct inputs – the market value of the sample utilities' equity – results in a downward adjustment of 80 basis points (0.80 percent). Keep in mind that this adjustment is tied to Staff's CAPM estimate and resulting cost of equity of 14.8 percent. If Staff's method were used, the resulting cost of equity would be 14.0 percent (14.8 percent – 0.80 percent), which is higher than the Company's 11.5 percent recommended cost of equity.

Q. ARE YOU PROPOSING A DOWNWARD ADJUSTMENT OF 80 BASIS POINTS FOR CHAPARRAL CITY?

A. Absolutely not, given that approximately one-quarter of Chaparral City's capital

[3] Since my rebuttal testimony was filed, I located an additional text discussing the calculation used to determine the effect of leverage. That text also states that market values should be used, not book values. Tim Koller, Marc Goedhart and David Wessels, *Valuation: Measuring and Managing the Value of Companies* 312-13 (John Wiley & Sons, Inc. 4th ed. 2005).

structure consists of debt. As explained in my rebuttal testimony at pages 32 to 33, the Commission has generally considered an adjustment of this nature only when the utility's capital structure consists of 100 percent equity, and even then, it has not always made an adjustment to the cost of equity. *See, e.g.,* Arizona Water Company, Decision No. 68302 (Nov. 14, 2005) (no adjustment for financial risk based on capital structure containing 73 percent equity); Black Mountain Sewer Corporation, Decision No. 69164 (Dec. 5, 2006) (no financial risk adjustment based on capital structure consisting of 100 percent equity). Here, one-quarter of the Company's capital structure is debt. It would be punitive, in my opinion, to apply a downward adjustment to the cost of equity under these circumstances.

V. THERE IS NO BASIS TO ADJUST THE COST OF EQUITY OR THE RATE OF RETURN DOWNWARD FOR INFLATION

A. Summary of Company's Final Position

Q. WHAT IS THE COMPANY'S FINAL POSITION ON WHETHER ITS COST OF CAPITAL SHOULD BE ADJUSTED DOWNWARD FOR INFLATION?

A. The Company continues to maintain that a downward adjustment for inflation is improper and would deprive the Company of an opportunity to earn a fair rate of return on the fair value of its utility plant and property, i.e., its FVRB.

Q. PLEASE SUMMARIZE THE BASIS FOR THE COMPANY'S POSITION.

A. There are a number of serious problems with the adjustments to account for inflation proposed by Staff and RUCO. They are, in summary, as follows:

- The failure to account for the impact of inflation on other aspects of the Company's business, namely operating expenses and earnings, which impacts the Company to a much greater extent than an alleged increase in rate base (*see* Bourassa Rb. at 24-26).

- The failure to consider the Company's continued inability to actually earn its authorized rate of return, and thereby recover the inflationary component in the cost of equity (*see* Bourassa Rb. at 26-27).
- The fact that, as Staff acknowledges, one-half of the Company's FVRB consists of its OCRB, which is based on the original or historic cost of the plant and is unaffected by changes in prices (*see* Fox Dt. at 7-8; Bourassa Rb. at 18-19). An adjustment to the cost of equity that fails to recognize this fact dramatically overstates the impact of inflation.
- The Company's long-term debt is an existing contractual obligation that has a fixed cost and is unaffected by changes in prices or other inflationary effects (*see* Bourassa Rb. at 20-21). Therefore, it would be improper to reduce the cost of debt and impair the Company's ability to recover its authorized return on equity.
- If inflation is considered, it must be based on inflation that is expected to occur in the future, not historic data. As Mr. Chaves explains, "[u]se of current bond yield [to estimate inflation] is consistent with finance theory, i.e., the efficient market hypothesis. Further, ... the best estimate of tomorrow's [inflation] is simply today's [inflation]. (Chaves Dt. at 37). RUCO, however, improperly uses historic data from the period 2001 through 2007 to estimate future inflation (*see* William Rigsby Direct Testimony (Rigsby Dt."), Schedule WAR-1, p. 5).

B. Updated Estimate of Inflation

Q. WHAT IS THE CURRENT RATE OF INFLATION, USING THE METHOD RECOMMENDED BY STAFF?

A. The current rate of inflation is a negative 1.18 percent, based on the average yields on 5, 7 and 10-year Treasuries. As explained in my rebuttal testimony at pages 23-

24, it is appropriate to use the current yields on these bonds based on Staff's view (which has been accepted by the Commission is prior cases) that most investors hold stocks for an intermediate period, which is why Staff uses the average of 5, 7 and 10-year Treasuries as the risk-free rate in implementing its CAPM.[4]

Staff and RUCO agree that an appropriate method of estimating the expected, future inflation component in the cost of equity is by subtracting the yields on U.S. Treasury inflation protected securities ("TIPS") from the yields of U.S. Treasury securities with constant maturities. In connection with updating my estimate of the cost of equity, I used financial data at November 21, 2008. Consequently, to estimate the current inflationary component in the cost of equity, I also evaluated U.S. Treasuries' spot rates on that same date, following the recommendation of Staff, to determine the current level of inflation. The result is as follows:

	Constant Maturity	TIPS	Expected Inflation
5-Year	2.02%	3.96%	(1.94)
7-Year	2.53%	4.17%	(1.64)
10-year	3.20%	3.15%	0.05
Average	2.58%	3.76%	(1.18)

Q. IS THIS THE SAME METHOD THAT YOU USED IN YOUR REBUTTAL TESTIMONY TO ESTIMATE INFLATION?

A. Yes (*see* Bourassa Dt. at 23). At that time, the indicated rate of inflation was negative 0.82%. It is currently negative 1.18%, as shown above. If there is an adjustment to the cost of equity, it should be a positive adjustment to increase the

[4] This was Staff's position in Chaparral City's prior rate case, which was adopted by the Commission. *See* Surrebuttal Testimony of Alejandro Ramirez, Docket No. W-02113A-04-0616 (May 5, 2005), Exh. S-4 at 11.

cost of equity, not lower it.

Q. WOULD THE INDICATED INFLATION RATE BE DIFFERENT IF 20-YEAR TREASURIES WERE USED INSTEAD?

A. Yes. The difference between the yields of a 20-year Treasury and a 20-year TIPS as of November 21, 2008, was 0.83 percent. Half of that difference is 0.42 percent, which would result in a 42 basis point downward adjustment to the cost of equity. However, following Staff's logic, it would not be appropriate to use the spot yields of 20-year Treasuries without also using 20-year Treasuries to implement the CAPM. This would result in a higher cost of equity, offsetting the downward adjustment for inflation.

The bottom line is that regardless of whether an adjustment for inflation is appropriate – and the Company continues to maintain that such an adjustment is not appropriate for a variety of reasons – given current financial indicators, no adjustment for inflation is required.

C. <u>Response to RUCO's Surrebuttal Arguments</u>

Q. HOW DO YOU RESPOND TO MR. RIGSBY'S ARGUMENT THAT YOU ARE ATTEMPTING TO APPLY AN "ACCOUNTING-LIKE MATCHING CONVENTION" BY FOLLOWING STAFF'S RECOMMENDED APPROACH AND USING "SPOT" YIELDS ON TREASURIES RATHER THAN HISTORIC RATES OF INFLATION?

A. Mr. Rigsby is mistaken. The use of current Treasury yields, as advocated by Staff, has nothing to do with the so-called "matching principle." Rather, as Mr. Chaves explains in his testimony (which Mr. Rigsby has ignored), it is a matter of using <u>current</u> market data to properly reflect <u>current</u> investor expectations. *See* Chaves Dt. at 37. It is the same reason why Mr. Rigsby didn't use the average annual price of the stocks of his sample utilities since 2001 in his DCF model, or use the

average annual yield on a 5-year Treasury since 2001 as the risk-free rate in his CAPM. The cost of equity is based on what investors expect to earn in the future, not what may have been earned in the past. Under the efficient market hypothesis, investors have already taken into account historic inflation levels, as well as historic information on stock prices, dividends, earnings and other data on the utilities in the sample group. It is also why Mr. Rigsby adjusted his proposed cost of short-term debt to reflect the current LIBOR rate, rather than using the average LIBOR rate over the past eight years. For the same reason, the level of inflation in 2002 or in 2005 is irrelevant to determining the inflation component in the current cost of equity.

Q. WHAT INFLATION ADJUSTMENT WOULD BE APPROPRIATE IF THE MODELS AND INPUTS ADOPTED BY RUCO WERE USED TO ESTIMATE THE COST OF EQUITY?

A. RUCO's cost of equity estimate should be increased by 194 basis points (1.94 percent), not reduced by 200 basis points. This would result in a cost of equity of 10.8 percent, instead of a cost of equity of 6.60 percent, which is what RUCO proposes. The reason is that Mr. Rigsby uses the 5-year Treasury yield as the risk-free rate. At the present time, the difference in the yield on a 5-year Treasury and a 5-year TIPS is <u>negative</u> 1.94 percent.

Q. HOW DO YOU RESPOND TO MR. RIGSBY'S ARGUMENT THAT IT IS IRRELEVANT WHETHER HALF OF THE COMPANY'S RATE BASE IS UNAFFECTED BY INFLATION?

A. On this issue, Mr. Rigsby has simply ignored the issue before the Commission. He claims on page 16 of his surrebuttal testimony that the purpose of making the inflation adjustment is to "avoid overcompensating investors for general inflation and not offset year-to-year increases or decreases in a utility's specific rate base."

His support for this argument is the surrebuttal testimony of Ben Johnson, filed in Chaparral City's remand proceeding in Docket No. W-02113A-04-0616. Unfortunately, Dr. Johnson also ignored the issue.

Q. WHAT IS THE ISSUE, MR. BOURASSA?

A. The issue is whether Chaparral City is being overcompensated if the fair value of its utility plant is used as the rate base, instead of OCRB. In Decision No. 70441, the Commission concluded that inflation is being "over-counted" because the cost of equity (estimated by means of the DCF and CAPM models) and the FVRB both include an "inflation component."[5] Dr. Johnson, unfortunately, never identified the "inflation component" in the Company's FVRB or explained how it should be determined. Instead, he ignored the issue by talking in vague terms about "general inflation" affecting the cost of equity, as Mr. Rigsby now states. However, if Chaparral City's FVRB is not affected by "general inflation," there is no "over-counting." We know that at least half of the Company's FVRB is not affected by inflation because it is valued on the basis of its historic cost, i.e., the OCRB. For this reason, Staff has acknowledged that OCRB includes no inflation, and that the inflation adjustment must be reduced to reflect that fact.

Another way to look at this issue is to consider what has happened in other recent rate cases for Arizona water and wastewater utilities that have agreed to accept OCRB as the fair value of their utility plant. In those cases, the Commission has consistently adopted Staff's recommended cost of equity, based on the same finance models and inputs used by Staff in this case. Yet neither Staff nor RUCO proposed an adjustment to account for "general inflation" in the cost of equity. It was done in this case on the basis that inflation is "over-counted" if the FVRB is used to set rates. If it is appropriate, as RUCO argues, to adjust the cost

[5] Decision No. 70441 at 33.

of equity to account for "general inflation" without regard to the components of the rate base, then in every rate case, an inflation-related adjustment would be used. This does not take place, however, because the utility's rate base is its OCRB. For the same reason, an adjustment based on "general inflation" is overstated by at least 50 percent if the fact that half of the FVRB consists of plant valued at its historic or original cost is ignored.

D. <u>Response to Mr. Abinah's Request for Consideration of Method One</u>

Q. MR. FOX DID NOT FILE SURREBUTTAL TESTIMONY ADDRESSING THE ADJUSTMENT FOR INFLATION. STAFF INSTEAD FILED TESTIMONY FROM ELIJAH ABINAH. DOES MR. ABINAH'S TESTIMONY AFFECT STAFF'S RECOMMENDATION REGARDING INFLATION?

A. Apparently, no. Mr. Abinah simply states that he has reviewed Mr. Fox's direct testimony and my rebuttal testimony, and believes that the Commission should also consider what Mr. Fox calls "Method One" (*see* Fox Dt. at 3-4) as well as Staff's preferred method, "Method Two" (*id.* at 4-8). Method Two recognizes that any inflation adjustment must be reduced to account for absence of inflation in the OCRB, but erroneously assumes that the annual debt service (interest) goes up or down, based on inflation. Method One, in contrast, adjusts only the cost of equity, but fails to recognize that half of the FVRB is the historic cost of plant.

Q. ISN'T "METHOD ONE" SIMPLY THE METHOD PROPOSED BY RUCO?

A. Yes. Consequently, I have assumed that the Commission would consider Method One. My testimony responding to RUCO's inflation adjustment also applies to Staff's Method One.

Q. DOES MR. ABINAH PROVIDE ANY BASIS FOR ACCEPTING METHOD ONE OVER METHOD TWO?

A. Only that he believes Method One will produce a lower revenue requirement than Method Two. That would not be the case at present, however, because inflation is currently negative.

VI. RESPONSE TO RUCO'S SURREBUTTAL TESTIMONY

A. Overview of RUCO's Proposed Cost of Capital

Q. PLEASE SUMMARIZE RUCO'S PROPOSED COST OF CAPITAL.

A. RUCO continues to recommend a WACC of only 6.38 percent. To put this in perspective, the Company's long-term debt has a cost of 5.33 percent – about 100 basis points less than RUCO's WACC. At the same time, the interest rate on an investment grade (Baa) bond is currently about 9 percent.[6]

As I explained, RUCO's capital structure and cost of debt are very similar to the capital structures and cost of debt recommended by the Company and Staff. Thus, the primary reason for RUCO's extremely low WACC is its cost of equity, 6.83 percent, which is based on the average cost of equity of its DCF and CAPM results (8.83 percent) and a downward adjustment of 200 basis points for inflation. *See* Rigsby Dt. at 8. In his surrebuttal testimony, Mr. Rigsby explains that his updated cost of equity is 8.60 percent, which would produce an inflation-adjusted WACC of only 6.19 percent. Rigsby Sb. at 11-12. But he continues to recommend a WACC of 6.38 percent. *Id.*

As I explained on pages 38 through 41 of my rebuttal testimony, Mr. Rigsby's methods are flawed in several critical respects, as one would expect given the extremely low result produced by his models. Moreover, as I explained, an adjustment to account for inflation would actually increase RUCO's cost of equity

[6] The Federal Reserve reports that the yield on Baa corporate bonds was 9.08 percent on November 21, 2008, while the yield on Aaa bonds was 5.82 percent on that same date. *See* Federal Reserve Statistical Release H.15 (Nov. 24, 2008), available at http://www.federalreserve.gov/releases/h15/.

by nearly 200 basis points, based on the current difference between a 5-year Treasury and a 5-year TIPS.

B. <u>Updated Cost of Equity Estimate Using RUCO's Methods</u>

Q. DID YOU PREPARE AN UPDATED ESTIMATE OF THE COST OF EQUITY USING RUCO'S METHODS AND INPUTS?

A. No, I did not.

Q. WHY DID YOU UPDATE STAFF'S COST OF EQUITY ESTIMATE AND NOT RUCO'S ESTIMATE?

A. Because RUCO's method of estimating the cost of equity is subjective and cannot be verified or replicated, in contrast to the methods that Staff and I use. In his DCF model, Mr. Rigsby relies on projected sustainable growth in order to estimate the dividend growth rate. Mr. Chaves and I also use the sustainable growth method. *See* Chaves Dt. at 18-19; Bourassa Dt. at 32-33. The difference, however, is that the key inputs necessary to estimate the internal or retention growth rate are not disclosed by Mr. Rigsby.

Q. WHAT ARE THOSE INPUTS?

A. Internal or retention growth, as Mr. Chaves and I have explained, is the expected growth in dividends due to the retention of earnings. Retention growth is dependent on the percentage of earnings retained (the retention ratio) and the expected return on common equity that is applied to the retained earnings. Thus, the internal growth rate formula is:

Retention growth rate = br

Where: b = the retention ratio (1-dividend payout ratio)

r = the expected return on common equity

The problem with Mr. Rigsby's implementation of this formula is that he does not

disclose the retention ratio or the expected return on common equity used to calculate the retention growth rate. As a result, it is impossible to verify the accuracy of his calculation or to duplicate that calculation based on more current information.

Q. I ASSUME THAT THE COMPANY REQUESTED THIS DATA FROM RUCO.

A. Yes. Unfortunately, RUCO was unable to provide the data necessary to verify Mr. Rigsby's calculation. Instead, RUCO's counsel advised the Company's counsel that Mr. Rigsby relied on Value Line estimates. I relied on the same data, however, and derived a higher growth rate. *Compare* Bourassa Rejoinder Schedule D-4.6 *with* Rigsby Dt. Schedule WAR-4, page 1.

Q. MR. RIGSBY ALSO CLAIMS TO HAVE CONSIDERED OTHER DATA.

A. Yes. Again, the problem is that it is unclear how this data was actually used to derive his sustainable growth estimate. He lists various sources of data (*see* Rigsby Dt. at 26), and also attaches various materials to his direct testimony. But there is no explanation of how any of these materials were actually used. This approach effectively allows Mr. Rigsby to simply select a growth rate that falls somewhere within a broad range and cannot be verified. For this reason, his cost of equity estimate cannot be updated to reflect current market data.

C. <u>Problems with RUCO's CAPM Estimates</u>

Q. COULD YOU HAVE UPDATED RUCO'S CAPM ESTIMATES?

A. Perhaps. Again, however, the methodology employed by Mr. Rigsby differs significantly from the methodology that Mr. Chaves and I have used. Mr. Rigsby makes no attempt to estimate the current MRP. Instead, he calculates two different historic MRPs for the period 1926 to 2007, one of which relies on the geometric mean (average) of historic returns and the other relies on the arithmetic mean

(average) of historic returns. *See* Rigsby Dt. at 33. Mr. Rigsby's calculated risk premiums are 4.90 percent based on his geometric mean calculation, and 6.5 percent based on his arithmetic mean calculation. In contrast, Staff and I both rely on the information published by Morningstar (formerly Ibbotson Associates), which calculates the historical risk premium by averaging the historical arithmetic differences between the S&P 500 and intermediate-term government bond income returns for the period 1926 through 2007. *See* Chaves Dt. at 30; Bourassa Dt. at 35-36. Our historical market risk premium is 7.5 percent. *Id.*

Q. MR. RIGSBY ARGUES THAT IT IS APPROPRIATE TO USE THE GEOMETRIC MEAN (AVERAGE) IN COMPUTING THE HISTORICAL MARKET RISK PREMIUM, DISAGREEING WITH YOUR REBUTTAL TESTIMONY. DO YOU HAVE A RESPONSE?

A. Yes. The discussion found on pages 19-25 of his surrebuttal testimony is contrary to the overwhelming weight of the evidence. Dr. Roger Morin, for example, explains in his text on regulatory finance:

> In estimating the cost of capital, the goal is to obtain the rate of return that investors expect, that is, a target rate of return. On average, investors expect to achieve their target return. This target expected return is in effect an arithmetic average. The achieved retrospective return is the geometric average. In statistical parlance, the arithmetic average is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean....
>
> In capital markets, where returns are a probability distribution, the answer that takes account of uncertainty, the arithmetic mean, is the correct one for estimating discount rates and the cost of capital.
>
> While the geometric mean is appropriate when measuring performance over a long time period, it is incorrect when estimating a risk premium to compute the cost of capital.[7]

[7] Roger A. Morin, *New Regulatory Finance* 133 (Public Utility Reports 2006).

Dr. Morin's text provides a theoretical discussion of why the arithmetic mean should be used to estimate the cost of capital, empirical evidence supporting the use of an arithmetic mean, excerpts from widely used corporate finance texts, and a formal demonstration of why the use of an arithmetic mean is appropriate. I have attached the relevant pages from Dr. Morin's text to this testimony at Tab 3.

Q. MR. RIGSBY HAS PROVIDED AN EXAMPLE ON PAGES 20 TO 22 OF HIS SURREBUTTAL PURPORTING TO SHOW WHY THE GEOMETRIC MEAN SHOULD BE USED. THIS THAT CALCULATION CORRECT?

A. His calculation is correct, but is backward-looking rather forward-looking. He has used the geometric mean to calculate the past performance of an investment, not to estimate the return that will be earned in the future. As explained in the attached excerpt from Dr. Morin's text, the geometric average "is an excellent measure of *past* performance. However, if our focus is on future performance, then the arithmetic average is the statistic of interest because it is an unbiased estimate of the portfolio's expected future return … ." (italics in text).[8]

Q. MR. RIGSBY CITES A TEXT BOOK FOR THE ARGUMENT THAT THE USE OF AN ARITHMETIC MEAN OVERSTATES THE MARKET RISK PREMIUM. DID YOU REVIEW THAT TEXT?

A. I reviewed the most current edition of the text, Tim Koller, Marc Goedhart and David Wessels, *Valuation: Measuring and Managing the Value of Companies* (John Wiley & Sons, Inc. 4th ed. 2005). This text does not support Mr. Rigsby's argument. The authors state that for longer intervals (here, a period of 81 years) an arithmetic average should be used. They also state that "[t]o estimate the mean (expectation) for any random variable, well-accepted statistical principles dictate

[8] *Id.* at 135, quoting Z. Brodie, A. Kane and A.J. Marcus, *Investments* (McGraw-Hill Irwin 6th ed. 2005).

that the arithmetic average is the best unbiased estimator."[9] Mr. Rigsby appears to be confusing the calculation of future cash flows beyond one period, which may be biased upward or downward, with estimating the current cost of equity. I also note that the authors recommend use of a 10-year Treasury as the risk-free rate, while Mr. Rigsby uses a 5-year Treasury, resulting in a lower risk-free rate and a lower cost of equity.

Q. MR. RIGSBY ALSO CITES THIS TEXT AS AUTHORITY FOR THE EXISTENCE OF "SURVIVORSHIP BIAS."

A. The authors briefly discuss survivorship bias, which relates to the fact that over the past 100 years, the U.S. stock market has outperformed markets in foreign countries such as China, Russia and Poland. Since the purpose here is to estimate the cost of equity for Chaparral City by using a proxy group of publicly traded water utilities in the United States, which are treated as being comparable in terms of investment risk, it would be improper to reduce the historic risk premium, which is based on differences between the S&P 500 and U.S. Treasury bond income returns over the past 81 years, to account for a higher incidence of business failures in foreign countries.

D. <u>Problems with RUCO's Use of Southwest Water</u>

Q. IN YOUR REBUTTAL TESTIMONY, YOU CRITICIZED MR. RIGSBY FOR USING SOUTHWEST WATER IN HIS SAMPLE WATER UTILITIES. HOW DOES MR. RIGSBY RESPOND TO YOUR CRITICISMS AND DO YOU AGREE WITH HIM?

A. In my rebuttal testimony, I pointed out that Mr. Rigsby used four publicly traded water utilities, including Southwest Water Company, in his sample group of water utilities, which is inappropriate for several different reasons, including the low

[9] Koller, *et al.*, *supra*, at 299.

percentage of its revenues derived from regulated activities and its poor earnings record.

Q. BEFORE WE GO ANY FARTHER, WHAT WATER UTILITIES DID STAFF AND THE COMPANY INCLUDE IN THEIR SAMPLE GROUPS?

A. The sample water utilities used by Staff and the Company are the same six publicly traded water utilities that Staff has been using in its sample group for a number of years, American States Water, Aqua America, California Water Service, Connecticut Water Service, Middlesex Water Company and SJW Corporation. The Commission has repeatedly accepted that sample group in determining the cost of equity for Arizona water and wastewater utilities. It did so, for example, in Chaparral City's prior rate case.

Mr. Rigsby, however, contends that it is appropriate to substitute Southwest Water Company for Connecticut Water Service, Middlesex Water Company and SJW Corporation, despite the fact that, as he acknowledges on page 17 of his surrebuttal testimony, <u>less than 50 percent</u> of Southwest Water's revenues are derived from regulated activities. According to the most recent *AUS Utility Reports* (November 2008), 45 percent of Southwest Water's revenues are derived from regulated activities. In contrast, four of the six water utilities customarily used by the Commission have at least 90 percent of their revenue derived from regulated activities, while the remaining two water utilities have 82 percent and 85 percent of their revenues derived from regulated activities. Obviously there is a significant difference between Southwest Water and the remaining water utilities.

Q. MR. RIGSBY POINTS OUT THAT THE COMPANY'S PARENT, AMERICAN STATES WATER, ENGAGES IN NON-REGULATED ACTIVITIES. IS THAT CORRECT?

A. Yes, as do the remaining five water utilities in the sample group. None of these

utilities is a "pure water provider." However, there is obviously a significant difference, in terms of comparability, between a utility such as American States, which derives over 80 percent of its revenue from regulated activities, and Southwest Water, which currently derives 45 percent of its revenue from regulated activities.

Q. IS THERE ANY OTHER REASON WHY SOUTHWEST WATER COMPANY SHOULD BE EXCLUDED FROM THE COST OF EQUITY ANALYSIS?

A. Yes. Southwest Water Company's financial condition continues to deteriorate. According to the most recent *AUS Monthly Utility Report*, for the 12-month period ended June 30, 2008, Southwest Water had negative earnings per share, and its dividend pay out ratio, return on common equity and return on total capital are described as "not meaningful." A utility experiencing these sorts of financial difficulties should not be included in the sample group.

E. <u>RUCO'S Gas Utility Sample Group Is Not Directly Comparable</u>

Q. LET'S TURN TO RUCO'S GAS UTILITY SAMPLE GROUP, MR. BOURASSA. WHAT DOES MR. RIGSBY SAY IN RESPONSE TO YOUR REBUTTAL TESTIMONY ABOUT THE USE OF THOSE UTILITIES TO DETERMINE CHAPARRAL CITY'S COST OF CAPITAL?

A. Mr. Rigsby asserts that the gas utilities have similar operating characteristics and therefore can be used to estimate Chaparral City's cost of equity.

Q. DO YOU AGREE?

A. No. The gas utilities are not comparable, and cannot be treated as such in implementing the DCF and CAPM models. In reality RUCO has used them to depress the cost of equity, not to provide a larger sample group.

Q. WHY AREN'T THE GAS COMPANIES COMPARABLE?

A. As I explained in my rebuttal testimony, RUCO's gas utility sample has an average beta of 0.82, while RUCO's water utility sample has an average beta of 1.05. *See* Rigsby Dt., Schedule WAR-7, page 1. Therefore, the water utility sample has significantly more systematic risk than the gas utility sample. Mr. Rigsby erroneously assumes that the gas utilities and water utility have the same systematic risk and are directly comparable, when they are not.

Q. CAN THE GAS UTILITIES BE USED TO ESTIMATE CHAPARRAL CITY'S COST OF EQUITY?

A. Yes, if the results produced by the DCF and CAPM models are adjusted upward to reflect the water utilities' additional risk. Mr. Rigsby, however, has made no adjustment to account for the water utilities' additional risk.

Q. HOW WOULD AN APPROPRIATE RISK ADJUSTMENT BE CALCULATED?

A. By using the CAPM. As I explained in my rebuttal, the difference between the results produced by Mr. Rigsby's CAPM model is 130 basis points. *See* Bourassa Dt. at 40. Because of the method used by Mr. Rigsby to implement the CAPM, however, 130 basis points understates the required adjustment to properly reflect the gas utilities' lower investment risk. If Staff's method and inputs are used instead, the result is 190 basis points, calculated as follows:

	Rf		Beta		Rp		k
Historic MRP	2.5%	+	0.82	x	7.5%	=	8.65%
Current MRP	3.6%	+	0.82	x	16.0%	=	16.72%
Average Gas Utility Sample							12.7%
Average Water Utility Sample[10]							14.6%
Difference/Risk Adjustment							**1.9%**

[10] *See* Rejoinder Schedule D-4.13.

Given this difference, it is clearly inappropriate to simply average the gas utilities' equity cost with the water utilities' equity cost, as Mr. Rigsby has done. This error assumes that a typical gas utility has the same investment risk as a typical water utility, which is not the case at the present time. As a result, Mr. Rigsby's use of gas utilities depresses the cost of equity for Chaparral City.

Q. DOES THAT CONCLUDE YOUR REJOINDER TESTIMONY MR. BOURASSA?

A. Yes.

1

Chaparral City Water Company
Test Year Ended December 31, 2006
Summary of Cost of Capital

Exhibit
Rejoinder Schedule D-1
Page 1
Witness: Bourassa

Line No.	Item of Capital	End of Test Year Dollar Amount	Percent of Total	Cost Rate	Weighted Cost	End of Projected Year Dollar Amount	Percent of Total	Cost Rate	Weighted Cost
1	Short-Term Debt[1]	$ 1,400,000	3.97%	2.88%	0.11%	$ 1,400,000	3.89%	2.88%	0.11%
2									
3	Long-Term Debt	$ 6,865,000	19.45%	5.33%	1.04%	$ 6,585,000	18.28%	5.36%	0.98%
4									
5	Stockholder's Equity	$ 27,028,873	76.58%	11.50%	8.81%	$ 29,432,897	81.72%	11.50%	9.40%
6									
7	Totals	$ 35,293,873	100.00%		9.96%	$ 36,017,897	100.00%		10.38%

[1] Current one year LIBOR rate (12 month LIBOR as reported on Nov. 21, 2008 by www.economagic.com)

SUPPORTING SCHEDULES:
Rejoinder D-2
Rejoinder D-3
Rejoinder D-4

RECAP SCHEDULES:

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Long Term Debt

Exhibit
Rejoinder Schedule D-2
Page 1
Witness: Bourassa

Line No.	Description of Debt	End of Test Year Amount Outstanding	Annual Interest	Interest Rate	Weighted Cost	End of Projected Year Amount Outstanding	Annual Interest	Interest Rate	Weighted Cost
1									
2	Series 1997A serial bonds, due 1998 to 2007 (4% to 4.85%)	240,000	11,040	4.60%	0.16%	-	-	4.60%	0.00%
3	Series 1997A term bonds, due Dec. 2011 (5.20%)	1,000,000	52,000	5.20%	0.76%	960,000	49,920	5.20%	0.76%
4	Series 1997A term bonds, due Dec. 2022 (5.40%)	4,610,000	248,940	5.40%	3.63%	4,610,000	248,940	5.40%	3.78%
5	Series 1997B term bonds, due Dec. 2022 (5.30%)	1,015,000	53,795	5.30%	0.78%	1,015,000	53,795	5.30%	0.82%
6									
7									
8									
9									
10									
11									
12									
13	Totals	$ 6,865,000	365,775		5.33%	$ 6,585,000	352,655		5.36%
14									
15	Supporting Schdules:								
16	E-2								
17									
18									
19									
20									
21									

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Preferred Stock

Exhibit
Rejoinder Schedule D-3
Page 1
Witness: Bourassa

Line No.	Description of Issue	End of Test Year Shares Outstanding	End of Test Year Amount	End of Test Year Dividend Requirement	End of Projected Year Shares Outstanding	End of Projected Year Amount	End of Projected Year Dividend Requirement
1							
2							
3	NOT APPLICABLE, NO PREFERRED STOCK ISSUED OR OUTSTANDING						
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17	SUPPORTING SCHEDULES:			RECAP SCHEDULES:			
18	E-1			Rejoinder D-1			
19							
20							

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Common Equity

Exhibit
Rejoinder Schedule D-4
Page 1
Witness: Bourassa

Line No.	
1	
2	The Company is proposing a cost of common equity of 11.5%.
3	
4	
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15	
16	
17	SUPPORTING SCHEDULES: RECAP SCHEDULES:
18	Rejoinder D-1
19	
20	

Chaparral City Water Company
Test Year Ended December 31, 2006
Cost of Common Equity

Exhibit
Rejoinder Schedule D-4
Page 1
Witness: Bourassa

Line No.	
1	
2	The Company is proposing a cost of common equity of 11.5%.
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	SUPPORTING SCHEDULES: RECAP SCHEDULES:
18	Rejoinder D-1
19	
20	

Chaparral City Water Company
Summary of Results

Exhibit
Rejoinder Schedule D-4.0
Witness: Bourassa

Line No.	Method	Low	High	Midpoint
1				
2				
3				
4	Method	Low	High	Midpoint
5	DCF Constant Growth	10.7%	14.9%	12.8%
6	DCF Sustainable Growth	8.6%	12.3%	10.4%
7	DCF Two-Stage	10.3%	13.2%	11.8%
8				
9	Average DCF Results	9.9%	13.5%	11.7%
10				
11	CAPM	9.9%	19.4%	14.7%
12				
13	Average DCF and CAPM Results	9.9%	16.5%	13.2%
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				

Chaparral City Water Company
Selected Characteristics of Water Utilities

Exhibit
Rejoinder Schedule D-4.1
Witness: Bourassa

Line No.	Company	% Water Revenues	Operating Revenues (millions)	Net Plant (millions)	S&P Bond Rating	Moody's Bond Rating
4	1. American States	82%	$ 299.1	$ 701.8	NR	A2
5	2. Aqua America	87%	$ 604.6	$ 2,466.5	AA-	NR
6	3. California Water	97%	$ 378.2	$ 929.5	NR	NR
7	4. Connecticut Water	85%	$ 61.3	$ 239.2	AAA	NR
8	5. Middlesex	90%	$ 89.3	$ 307.2	A	NR
9	6. SJW Corp.	95%	$ 213.8	$ 476.8	NR	NR
11	Average	89%	$ 274.4	$ 853.5		
13	Chaparral City Water Company	100%	$ 7.4	$ 37.2	NR	NR

15 Source: AUS Utility Reports (November 2008)

Chaparral City Water Company
Capital Structures of Water Utilities

Exhibit
Rejoinder Schedule D-4.2
Witness: Bourassa

No.	Company	Book Value Long-Term Debt	Book Value Common Equity	Market Value Long-Term Debt	Market Value Common Equity
1					
2					
3					
4	1. American States	47.0%	53.0%	33.2%	66.8%
5	2. Aqua America	55.4%	44.6%	30.7%	69.3%
6	3. California Water	43.0%	57.0%	25.6%	74.4%
7	4. Connecticut Water	47.9%	52.1%	34.7%	65.3%
8	5. Middlesex	49.8%	50.2%	40.5%	59.5%
9	6. SJW Corp.	47.7%	52.3%	33.0%	67.0%
10					
11	Average	48.5%	51.5%	32.9%	67.1%
12					
13	Chaparral City Water Company	23.4%	76.6%	N/A	N/A
14					
15					
16					
17	Source: Value Line Analyzer Data (November 21, 2008)				
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					

Exhibit
Rejoinder Schedule D-4.3
Page 1
Witness: Bourassa

Chaparral City Water Company
Comparisons of Past and Future Estimates of Growth

Line No.	Company	Five-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth[1]
7	1. American States	13.68%	4.53%	1.99%	6.53%	8.50%
8	2. Aqua America	13.72%	9.84%	8.45%	5.63%	8.00%
9	3. California Water	12.76%	7.11%	0.70%	3.71%	8.67%
10	4. Connecticut Water	1.91%	3.50%	1.51%	Negative	9.03%
11	5. Middlesex	6.86%	6.34%	1.93%	3.57%	8.00%
12	6. SJW Corp.	24.69%	8.96%	7.24%	5.92%	12.00%
15	GROUP AVERAGE	12.27%	6.71%	3.64%	5.07%	9.03%
16	GROUP MEDIAN	13.22%	6.73%	1.96%	5.63%	8.58%

1 See Rejoinder Schedule D-4.5

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Comparisons of Past and Future Estimates of Growth

Exhibit
Rejoinder Schedule D-4.4
Page 1
Witness: Bourassa

Line No.	Company	Ten-year historical compound annual changes: Price	Book Value	DPS	EPS	Average Future Growth[1]
1	1. American States	12.35%	4.54%	1.47%	4.53%	8.50%
2	2. Aqua America	13.87%	9.39%	7.18%	7.64%	8.00%
3	3. California Water	6.33%	3.59%	0.91%	Negative	8.67%
4	4. Connecticut Water	8.84%	3.76%	1.26%	1.08%	9.03%
5	5. Middlesex	9.88%	3.98%	1.98%	2.65%	8.00%
6	6. SJW Corp.	16.43%	4.85%	5.13%	2.66%	12.00%
7						
8						
9	GROUP AVERAGE	11.28%	5.02%	2.99%	3.71%	9.03%
10	GROUP MEDIAN	11.12%	4.26%	1.72%	2.66%	8.58%

1 See Rejoinder Schedule D-4.5

Sources:
Value Line Data
Yahoo Finance

Chaparral City Water Company
Analysts Forecasts of Earnings Per Share Growth

Exhibit
Rejoinder Schedule D-4.5
Witness: Bourassa

Line No.	Company	(1) Zacks	(2) Morningstar	Yahoo	(3) Value Line	(4) Average Growth (G) (Cols 1-3)
		EPS GROWTH				
7	1. American States	12.00%	7.00%	4.00%	11.00%	8.50%
8	2. Aqua America	9.00%	7.50%	8.00%	7.50%	8.00%
9	3. California Water	9.00%	8.00%	7.67%	10.00%	8.67%
10	4. Connecticut Water					9.03%
11	5. Middlesex	8.00%		8.00%	8.00%	8.00%
12	6. SJW Corp.	10.00%	18.00%	10.00%	10.00%	12.00%
15	GROUP AVERAGE	9.60%	10.13%	7.53%	9.30%	9.03%
16	GROUP MEDIAN					8.58%

Sources:
Value Line Investment Analyzer Data November 21, 2008
Zacks Investment Research Site November 21, 2008
Morningstar Website November 21, 2008
Yahoo Finance November 21, 2008

Chaparral City Water Company
Estimates of Sustainable Growth

Exhibit
Rejoinder Schedule D-4.6
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)
1						
2						
3						Average
4						Sustainable
5		Retention	Rate	br	sv	Growth
6	Company	Ratio	of Return	Growth	Growth	(Cols 3+4)
7	1. American States	0.52	13.50%	7.02%	0.89%	7.91%
8	2. Aqua America	0.43	12.00%	5.20%	0.67%	5.87%
9	3. California Water	0.49	11.00%	5.34%	2.66%	7.99%
10	4. Connecticut Water					
11	5. Middlesex					
12	6. SJW Corp.					
13						
14						
15	GROUP AVERAGE	0.48	12.17%	5.85%	1.40%	7.26%
16	GROUP MEDIAN	0.49	12.00%	5.34%	0.89%	7.91%
17						
18	Sources:					
19	Value Line Data					
20						
21						
22						
23						

Chaparral City Water Company
Estimates of sv Growth

Exhibit
Rejoinder Schedule D-4.7
Witness: Bourassa

Line No.	Company	(1) Stock Financing Rate	(2) Current Market to Book Ratio	(3) v	(4) sv Growth
7	1. American States	2.03%	1.78	0.44	0.89%
8	2. Aqua America	1.03%	2.81	0.64	0.67%
9	3. California Water	4.87%	2.20	0.55	2.66%
10	4. Connecticut Water				na
11	5. Middlesex				na
12	6. SJW Corp.				na
15	GROUP AVERAGE	2.65%	2.26	0.54	1.40%
16	GROUP MEDIAN	2.03%	2.20	0.55	0.89%

Sources:
Value Line Data

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model
Using Projected EPS Growth

Exhibit
Rejoinder Schedule D-4.8
Witness: Bourassa

Line No.	Company	(1) Spot Price (Po)	(2) Next Year's Div (D1)	(3) Dividend Yield	(4) Growth (g)[1]	(5) Indicated Cost of Equity k=Div Yld + g (Cols 3+4)
1	1. American States	31.32	1.08	3.45%	8.50%	11.9%
2	2. Aqua America	20.57	0.56	2.72%	8.00%	10.7%
3	3. California Water	40.47	1.18	2.92%	8.67%	11.6%
4	4. Connecticut Water	20.60	0.90	4.37%	9.03%	13.4%
5	5. Middlesex	14.32	0.72	5.03%	8.00%	13.0%
6	6. SJW Corp.	23.93	0.70	2.94%	12.00%	14.9%
7						
8	GROUP AVERAGE			3.57%	9.03%	12.6%
9	GROUP MEDIAN					12.5%

[1] See Schedules D-4.5

Sources:
Value Line Investment Analyzer Data November 21, 2008
Yahoo Finance November 21, 2008

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Constant Growth DCF Model - Sustainable Growth

Exhibit
Rejoinder Schedule D-4.9
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)
1								Indicated
2								Cost of
3			Next		Sustainable Growth[1]			Equity
4		Spot	Year's	Dividend			br+sv	k=Div Yld + g
5	Company	Price (Po)	Div (D1)	Yield	br	vs	Growth (g)	(Cols 3+6)
6	1. American States	31.32	1.08	3.45%	7.02%	0.89%	7.91%	11.4%
7	2. Aqua America	20.57	0.56	2.72%	5.20%	0.67%	5.87%	8.6%
8	3. California Water	40.47	1.18	2.92%	5.34%	2.66%	7.99%	10.9%
9	4. Connecticut Water	20.60	0.90	4.37%			7.26%	11.6%
10	5. Middlesex	14.32	0.72	5.03%			7.26%	12.3%
11	6. SJW Corp.	23.93	0.70	2.94%			7.26%	10.2%
12								
13								
14	GROUP AVERAGE			3.57%			7.26%	10.8%
15	GROUP MEDIAN							11.1%
16								
17								
18	1 See Rejoinder Schedule D-4.6 and D-4.7							
19								
20								
21	Sources:							
22	Value Line Investment Analyzer Data November 21, 2008							
23	Yahoo Finance November 21, 2008							
24								

Chaparral City Water Company
Discounted Cash Flow Analysis (Water)
Two-Stage Growth - Projected

Exhibit
Rejoinder Schedule D-4.10
Witness: Bourassa

Line No.		(1)	(2)	(3)	(4)	(5)	(6)	(7)
					Projected Growth Rates			
	Company	Spot Price(P_0)	Next Year's Div (D_1)	Yield (D_1/P_0)	Near Term[1]	Long Term (GDP)	Average[1]	Indicated Cost of Equity
7	1. American States	31.32	1.08	3.45%	8.50%	6.80%	7.94%	11.4%
8	2. Aqua America	20.57	0.56	2.72%	8.00%	6.80%	7.60%	10.3%
9	3. California Water	40.47	1.18	2.92%	8.67%	6.80%	8.05%	11.0%
10	4. Connecticut Water	20.60	0.90	4.37%	9.03%	6.80%	8.30%	12.7%
11	5. Middlesex	14.32	0.72	5.03%	8.00%	6.80%	7.60%	12.6%
12	6. SJW Corp.	23.93	0.70	2.94%	12.00%	6.80%	10.28%	13.2%
15	GROUP AVERAGE			3.57%			8.30%	11.9%
16	GROUP MEDIAN							12.0%

1 See Rejoinder Schedule D-4.5
[2] Near term growth given weighting of .67

Chaparral City Water Company
Market Betas

Exhibit
Rejoinder Schedule D-4.11
Witness: Bourassa

Line No.		Company	
1			
2	1.	American States	0.95
3	2.	Aqua America	1.00
4	3.	California Water	1.10
5	4.	Connecticut Water	0.80
6	5.	Middlesex	0.90
7	6.	SJW Corp.	1.15
8		Average	**0.98**
9			
10	Source:		
11	Value Line Investment Analyzer Data November 21, 2008		
12			
13			
14			
15			
16			

Chaparral City Water Company
Computation of Current Market Risk Premium

Exhibit
Rejoinder Schedule D-4.12
Witness: Bourassa

Line No.	Month	Dividend Yield	+	Growth	=	Expected Market Return	-	Monthly Average 30 Year Treasury Rate	=	Market Risk Premium
1										
2										
3	**Month**	Dividend Yield	+	Growth	=	Expected Market Return	-	Monthly Average 30 Year Treasury Rate	=	Market Risk Premium
4										
5	Jun	2.17%	+	9.71%	=	11.88%	-	5.20%	=	6.68%
6	Jul	2.27%	+	10.91%	=	13.18%	-	5.11%	=	8.07%
7	Aug	2.37%	+	11.92%	=	14.29%	-	4.93%	=	9.36%
8	Sept	2.31%	+	11.16%	=	13.47%	-	4.79%	=	8.68%
9	Oct	2.45%	+	11.90%	=	14.35%	-	4.77%	=	9.58%
10	Nov	2.60%	+	13.41%	=	16.01%	-	4.52%	=	11.49%
11	Dec 2007	2.61%	+	13.51%	=	16.12%	-	4.52%	=	11.60%
12	Jan 2008	2.67%	+	15.19%	=	17.86%	-	4.33%	=	13.53%
13	Feb	2.74%	+	16.47%	=	19.21%	-	4.52%	=	14.69%
14	March	2.85%	+	17.64%	=	20.49%	-	4.39%	=	16.10%
15	April	2.69%	+	15.73%	=	18.42%	-	4.44%	=	13.98%
16	May	2.73%	+	15.51%	=	18.24%	-	4.60%	=	13.64%
17	Jun	3.13%	+	18.51%	=	21.64%	-	4.69%	=	16.95%
18	Jul	3.15%	+	18.61%	=	21.76%	-	4.57%	=	17.19%
19	Aug	3.06%	+	17.08%	=	20.14%	-	4.50%	=	15.64%
20	Sept	3.07%	+	19.30%	=	22.37%	-	4.27%	=	18.10%
21	Oct	4.31%	+	29.40%	=	33.71%	-	4.17%	=	29.54%
22										
23	Recent 12 Mon Avg	2.97%	+	17.53%	=	20.50%	-	4.46%	=	16.04%
27										
28	Short-term Trends									
29	Recent Nine Months Avg	3.08%	+	18.69%	=	21.78%	-	4.46%	=	17.31%
30	Recent Six Months Avg	3.24%	+	19.74%	=	22.98%	-	4.47%	=	18.51%
31	Recent Three Months Avg	3.48%	+	21.93%	=	25.41%	-	4.31%	=	21.09%
32										
33	Sources									
34	Value Line Investment Analyzer Software Data									
35	Federal Reserve									

Chaparral City Water Company
Test Year Ended December 31, 2006
Capital Asset Pricing Model (CAPM)

Exhibit
Rejoinder Schedule D-4.13
Witness: Bourassa

Line No.		Rf	+	beta[3]	x	Rp	=	k
1								
2								
3	Historical Market Risk Premium CAPM[1]	2.5%	+	0.98	x	7.5% [4]	=	9.8%
4								
5	Current Market Risk Premium CAPM[2]	3.6%	+	0.98	x	16.0% [5]	=	19.4%
6								
7								
8	Average							14.6%
9								
10								
11								

12 [1] Federal Reserve November 20, 2008 average of 5, 7 and 10 year Treasury rates (Rf)
13 [2] Federal Reserve November 20, 2008 30 year Treasury rate (Rf)
14 [3] Value Line Investment Analyzer data. See Rejoinder Schedule D-4.11
15 [4] Historical Market Risk Premium from (Rp) MoriningStar SBBI 2008 Yearbook Table A-2 Intermediate-Horizon ERP 1926-2007
16 [5] Computed using DCF constant growth method to determine current market return on Value Line 1700 stocks
17 and CAPM with beta of 1.0 to compute Current Market Risk Premium (Rp). See Rejoinder Schedule D-4.12.
18
19
20

2

Chaparral City Water Company, Inc.
Capital Structure
And Weighted Average Cost of Capital

[A]	[B]	[C]	[D]
Description	Weight (%)	Cost	Weighted Cost
Staff Recommended Structure			
Debt	24.4%	4.8%	1.2%
Common Equity	75.6%	11.9%	9.0%
Weighted Average Cost of Capital			**10.2%**

[D] : [B] x [C]

Supporting Schedules: TJB-3 and TJB-4.

Chaparral City Water Company, Inc.
Inflation Adjustment (Accretion Return) and
Resulting Fair Value Rate of Return

Description		
Weighted Average Cost of Capital	10.2%	[1]
Minus: Modified Inflation Adjustment/Accretion Return	-0.4%	[2]
Fair Value Rate of Return	9.8%	

1: Schedule TJB-1

2: Calculation of Modified Inflation Adjustment/Accretion Return:

20-year Treasury Yield [3]	3.9%	
20-year Treasury Real Yield [3]	3.1%	
Return Required by Investors due to Inflation (Accretion Return)	0.8%	
Times a 50% Factor	0.5	[4]
Modified Inflation Adjustment/Accretion Return	0.4%	

3: http://www.ustreas.gov as of 11/21/2008.

4: Direct Testimony of Mr. Gordon L. Fox.

Chaparral City Water Company, Inc.
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]		[C]		[D]		[E]
DCF Method			D_1/P_0 [1]	+	g [2]	=	k
Constant Growth DCF Estimate			3.5%	+	5.6%	=	9.1%
Multi-Stage DCF Estimate						=	10.2%
Average of DCF Estimates							**9.7%**
CAPM Method	Rf	+	β [5]	x	(Rp)	=	k
Historical Market Risk Premium[3]	2.6%	+	0.98	x	7.5% [6]	=	10.0%
Current Market Risk Premium[4]	3.7%	+	0.98	x	26.6% [7]	=	29.8%
Average of CAPM Estimates							**19.9%**
					Average		**14.8%**
					Financial risk adjustment		-2.9%
					Total		**11.9%**

1 MSN Money and Value Line

2 Schedule TJB-8

3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at www.ustreas.gov 11/21/2008

4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at www.ustreas.gov 11/21/2008

6 Value Line

6 Historical Market Risk Premium (Rp) from Ibbotson Associates SBBI 2008 Yearbook

7 Value Line Investment Survey November 21, 2008

Chaparral City Water Company, Inc.
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
Company	Debt	Common Equity	Total
American States Water	50.9%	49.1%	100.0%
California Water	43.8%	56.2%	100.0%
Aqua America	55.0%	45.0%	100.0%
Connecticut Water	50.5%	49.5%	100.0%
Middlesex Water	51.5%	48.5%	100.0%
SJW Corp	47.6%	52.4%	100.0%
Average Sample Water Utilities	**49.9%**	**50.1%**	**100.0%**
Chaparral City Water Company, Inc.	**24.4%**	**75.6%**	**100.0%**

Source:
Sample Water Companies from Value Line

Chaparral City Water Company, Inc.
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Company	Dividends Per Share 1997 to 2007 DPS[1]	Dividends Per Share Projected DPS[1]	Earnings Per Share 1997 to 2007 EPS[1]	Earnings Per Share Projected EPS[1]
American States Water	1.5%	4.6%	4.5%	4.8%
California Water	0.9%	0.8%	-2.0%	9.4%
Aqua America	7.2%	7.2%	7.6%	11.1%
Connecticut Water	1.2%	No Projection	0.5%	No Projection
Middlesex Water	1.9%	No Projection	2.6%	No Projection
SJW Corp	4.8%	No Projection	2.7%	No Projection
Average Sample Water Utilities	**2.9%**	**4.2%**	**3.6%** [2]	**8.4%**

1 Value Line

2 Note that the figure -2.0% has been excluded from the calculation. This has been done as negative growth is inconsistent with the DCF model.

Chaparral City Water Company, Inc.
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth **1998 to 2007** br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth **1998 to 2007** br + vs	Sustainable Growth Projected br + vs
American States Water	2.8%	5.7%	1.3%	4.2%	7.1%
California Water	1.8%	5.5%	4.7%	6.6%	10.2%
Aqua America	4.5%	5.3%	5.0%	9.5%	10.3%
Connecticut Water	2.6%	No Projection	0.9%	3.5%	No Projection
Middlesex Water	1.3%	No Projection	2.2%	3.5%	No Projection
SJW Corp	4.4%	No Projection	0.1%	4.5%	No Projection
Average Sample Water Utilities	**2.9%**	**5.5%**	**2.4%**	**5.3%**	**9.2%**

[B]: Value Line
[C]: Value Line
[D]: Value Line and MSN Money
[E]: [B]+[D]
[F]: [C]+[D]

Chaparral City Water Company, Inc.
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 11/21/2008	Book Value	Mkt To Book	*Value Line* Beta β	Raw Beta β *raw*
American States Water	AWR	**31.32**	17.82	1.8	**0.95**	0.90
California Water	CWT	**40.57**	19.22	2.1	**1.00**	0.97
Aqua America	WTR	**20.57**	7.82	2.6	**1.10**	1.12
Connecticut Water	CTWS	**20.60**	12.53	1.6	**0.80**	0.67
Middlesex Water	MSEX	**14.32**	10.46	1.4	**0.90**	0.82
SJW Corp	SJW	**23.93**	13.60	1.8	**1.15**	1.19
Average				**1.9**	**0.98**	**0.95**

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Chaparral City Water Company, Inc.
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
Description	g
DPS Growth - Historical[1]	2.9%
DPS Growth - Projected[1]	4.2%
EPS Growth - Historical[1]	3.6%
EPS Growth - Projected[1]	8.4%
Sustainable Growth - Historical[2]	5.3%
Sustainable Growth - Projected[2]	9.2%
Average	**5.6%**

1 Schedule TJB-5

2 Schedule TJB-6

Chaparral City Water Company, Inc.
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[H]	[I]
Company	Current Mkt. Price (P_o)[1] 11/21/2008	Projected Dividends[2] (Stage 1 growth) (D_t) d_1	d_2	d_3	d_4	Stage 2 growth[3] (g_n)	Equity Cost Estimate (K)[4]
American States Water	31.3	1.04	1.10	1.16	1.23	6.7%	10.0%
California Water	40.6	1.20	1.27	1.34	1.42	6.7%	9.6%
Aqua America	20.6	0.53	0.56	0.59	0.62	6.7%	9.2%
Connecticut Water	20.6	0.92	0.97	1.03	1.08	6.7%	11.1%
Middlesex Water	14.3	0.73	0.77	0.81	0.86	6.7%	11.7%
SJW Corp	23.9	0.66	0.70	0.74	0.78	6.7%	9.4%
						Average	**10.2%**

$$P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n}\left[\frac{1}{(1+K)}\right]^n$$

Where : P_0 = current stock price
D_t = dividends expected during stage 1
K = cost of equity
n = years of non – constant growth
D_n = dividend expected in year n
g_n = constant rate of growth expected after year n

1 [B] see Schedule TJB-7
2 Derived from Value Line Information
3 Average annual growth in GDP 1929 - 2005 in current dollars.
4 Internal Rate of Return of Projected Dividends

3 http://www.bea.doc.gov/

Chaparral City Water Company, Inc.
Capitalization

	Interest Rate	Annual Interest	Amount outstanding as of 6/30/2008	Percentage of Capital Structure
Long-Term Debt				
Bonds due 2011	5.2%	$ 52,000	$ 1,000,000	
Bonds due 2022	5.4%	$ 248,940	4,610,000	
Bonds due 2022	5.3%	$ 51,675	975,000	
Long-Term Debt	5.4%	352,615	$ 6,585,000	18.6%
Short-Term Debt	2.9%	59,040	2,050,000	
Short-Term Debt	2.9%	59,040	$ 2,050,000	5.8%
Total Debt	4.8%	$ 411,655	$ 8,635,000.00	24.4%
Common Equity				
Common Shares Outstanding			4,603,000	
Paid in Capital			14,950,000	
Retained Earnings			7,137,000	
Total Common Equity			$ 26,690,000	75.6%
Total Capitalization			$ 35,325,000	100.0%

Chaparral City Water Company, Inc.
Calculation of Unlevered Beta
Sample Water Utilities

$$\beta_{UL} = \frac{\beta_L}{1 + BD \div EC\ (1 - t)}$$

Where :

β_{UL} = unlevered beta
β_L = levered beta
BD = book debt
EC = equity capital
t = tax rate

Line No.	[A]	[B] (Unadjusted Beta) Value Line Levered Raw Beta β_L	[C] Tax Rate t	[D] Book Debt BD	[E] Equity Cap EC	[F] Unlevered Raw Beta $\beta_{UL} = \frac{\beta_L}{1+\frac{BD}{EC}(1-t)}$
1	American States Water	0.90	**40.5%**	0.51	0.49	0.55
2	California Water	0.97	**39.7%**	0.44	0.56	0.66
3	Aqua America	1.12	**39.6%**	0.55	0.45	0.64
4	Connecticut Water	0.67	**23.5%**	0.50	0.50	0.38
5	Middlesex Water	0.82	**33.4%**	0.51	0.49	0.48
6	SJW Corp	1.19	**40.8%**	0.48	0.52	0.78
7						
8	Sample Water Utilities	0.95	36.25%	0.50	0.50	0.58
9						
10						
11						
12						
13						
14	**Source: Value Line**					
15	**Supporting Schedules: Schedule TJB-1, Schedule TJB-3**					

Chaparral City Water Company, Inc.
Calculation of Relevered Beta
Sample Water Utilities

$$\beta_{RL} = \beta_{UL}\ (1 + (1 - t)BD \div EC)$$

Where :

β_{RL} = relevered beta
β_{UL} = unlevered beta
t = tax rate
BD = book debt
EC = equity capital

[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Unlevered Raw Beta β_{UL}	Book Debt BD	Equity Capital EC	Tax Rate t	Relevered Raw Beta $b_{RL}=\beta_{UL}(1+(1-t)BD/EC))$ β_{RL}	Adjusted Relevered Beta .35 + .67(Raw Beta) β_{RL}
Chaparral City Water Company, Inc.	0.58	0.24	0.76	38.60%	0.69	0.81

Source: Schedule C3 of the Company's application
Supporting Schedules: Schedule TJB-9 and TJB-10

Chaparral City Water Company, Inc.
Financial Risk Adjustment
Sample Water Companies

[A]	[B]		[C]		[D]		[E]
CAPM Method	**Rf**	**+**	**β**	**x**	**(Rp)**	**=**	**k**
Historical Market Risk Premium	2.6%	+	0.98	x	7.5%	=	10.0%
Current Market Risk Premium	3.7%	+	0.98	x	26.6%	=	29.8%
Average of CAPM Estimates							**19.9%**
Relevered Beta	**Rf**		**β**		**(Rp)**		**k**
Historical Market Risk Premium	2.6%	+	0.81	x	7.5%	=	8.7%
Current Market Risk Premium	3.7%	+	0.81	x	26.6%	=	25.4%
Average of CAPM Estimates							**17.1%**
Capital Structure Adjustment (8 - 3)							-2.9%

Supporting Schedules: Schedule TJB-2, Schedule TJB-11

Docket No. W-02113A-07-0551

Updated Staff Cost of Capital
Staff Revised
Based on Market Value Cap. Structure

Schedule TJB-14
Witness: Bourassa

Chaparral City Water Company, Inc.
Calculation of Unlevered Beta
Sample Water Utilities

$$\beta_{UL} = \frac{\beta_L}{1 + BD \div EC\ (1 - t)}$$

Where :

β_{UL} = unlevered beta
β_L = levered beta
BD = MV debt (assumed to be book)
EC = MVequity capital
t = tax rate

Line No.	[A]	[B] (Unadjusted Beta) Value Line Levered Raw Beta β_L	[C] Tax Rate t	[D] Debt BD	[E] Equity EC	[F] Unlevered Raw Beta $\beta_{UL} = \frac{\beta_L}{1+\frac{BD}{EC}(1-t)}$
1	American States Water	0.90	**40.5%**	0.37	0.63	0.66
2	California Water	0.97	**39.7%**	0.27	0.73	0.79
3	Aqua America	1.12	**39.6%**	0.32	0.68	0.87
4	Connecticut Water	0.67	**23.5%**	0.38	0.62	0.46
5	Middlesex Water	0.82	**33.4%**	0.44	0.56	0.54
6	SJW Corp	1.19	**40.8%**	0.34	0.66	0.91
7						
8	Sample Water Utilities	0.95	36.25%	0.35	0.65	0.70
9						
10						
11						
12						
13						
14	**Source: Value Line**					
15	**Supporting Schedules: Schedule TJB-1, Schedule TJB-3**					

Docket No. W-02113A-07-0551

Updated Staff Cost of Capital
Staff Revised
Based on Market Value Cap. Structure

Schedule TJB-15
Witness: Bourassa

Chaparral City Water Company, Inc.
Calculation of Relevered Beta
Sample Water Utilities

$$\beta_{RL} = \beta_{UL}\,(1 + (1 - t)BD \div EC)$$

Where:

β_{RL} = releveredbeta
β_{UL} = unleveredbeta
t = tax rate
BD = MV debt (assumed to be book)
EC = MV equity capital

[A]	[B]	[C]	[D]	[E]	[F]	[G]
	Unlevered Raw Beta β_{UL}	Book Debt BD	Equity Capital EC	Tax Rate t	Relevered Raw Beta $b_{RL}=\beta_{UL}(1+(1-t)BD/EC))$ β_{RL}	Adjusted Relevered Beta .35 + .67(Raw Beta) β_{RL}
Chaparral City Water Company, Inc.	0.70	0.30	0.70	38.60%	0.88	0.94

Source: Schedule C3 of the Company's application
Supporting Schedules: Schedule TJB-9 and TJB-10

Computation of MV Equity		Amount	%
Fair Value Rate Base	$	27,767,249	100.0%
less: Debt		8,265,000	29.8%
Market Value Equity	$	19,502,249	70.2%

Chaparral City Water Company, Inc.
Financial Risk Adjustment
Sample Water Companies

[A]	[B]		[C]		[D]		[E]
CAPM Method	**Rf**	+	β	x	**(Rp)**	=	**k**
Historical Market Risk Premium	2.6%	+	0.98	x	7.5%	=	10.0%
Current Market Risk Premium	3.7%	+	0.98	x	26.6%	=	29.8%
Average of CAPM Estimates							**19.9%**
Relevered Beta	**Rf**		β		**(Rp)**		**k**
Historical Market Risk Premium	2.6%	+	0.94	x	7.5%	=	9.7%
Current Market Risk Premium	3.7%	+	0.94	x	26.6%	=	28.7%
Average of CAPM Estimates							**19.2%**
Capital Structure Adjustment (8 - 3)							-0.8%

Supporting Schedules: Schedule TJB-2, Schedule TJB-11

3

NEW
REGULATORY
FINANCE

Roger A. Morin, PhD

2006
PUBLIC UTILITIES REPORTS, INC.
Vienna, Virginia

Appendix 4-A
Arithmetic versus Geometric Means in Estimating the Cost of Capital

The use of the arithmetic mean appears counter-intuitive at first glance, because we commonly use the geometric mean return to measure the average annual achieved return over some time period. For example, the long-term performance of a portfolio is frequently assessed using the geometric mean return.

But performance appraisal is one thing, and cost of capital estimation is another matter entirely. In estimating the cost of capital, the goal is to obtain the rate of return that investors expect, that is, a target rate of return. On average, investors expect to achieve their target return. This target expected return is in effect an arithmetic average. The achieved or retrospective return is the geometric average. In statistical parlance, the arithmetic average is the unbiased measure of the expected value of repeated observations of a random variable, not the geometric mean. This appendix formally illustrates that only arithmetic averages can be used as estimates of cost of capital, and that the geometric mean is not an appropriate measure of cost of capital.

The geometric mean answers the question of what constant return you would have had to achieve in each year to have your investment growth match the return achieved by the stock market. The arithmetic mean answers the question of what growth rate is the best estimate of the future amount of money that will be produced by continually reinvesting in the stock market. It is the rate of return which, compounded over multiple periods, gives the mean of the probability distribution of ending wealth.

While the geometric mean is the best estimate of performance over a long period of time, this does not contradict the statement that the arithmetic mean compounded over the number of years that an investment is held provides the best estimate of the ending wealth value of the investment. The reason is that an investment with uncertain returns will have a higher ending wealth value than an investment which simply earns (with certainty) its compound or geometric rate of return every year. In other words, more money, or terminal wealth, is gained by the occurrence of higher than expected returns than is lost by lower than expected returns.

In capital markets, where returns are a probability distribution, the answer that takes account of uncertainty, the arithmetic mean, is the correct one for estimating discount rates and the cost of capital.

While the geometric mean is appropriate when measuring performance over a long time period, it is incorrect when estimating a risk premium to compute the cost of capital.

TABLE 4A-1
GEOMETRIC VS. ARITHMETIC RETURNS

	Stock A	Stock B
1996	50.0%	11.61%
1997	−54.7%	11.61%
1998	98.5%	11.61%
1999	42.2%	11.61%
2000	−32.3%	11.61%
2001	−39.2%	11.61%
2002	153.2%	11.61%
2003	−10.0%	11.61%
2004	38.9%	11.61%
2005	20.0%	11.61%
Standard Deviation	64.9%	0.0%
Arithmetic Mean	26.7%	11.6%
Geometric Mean	11.6%	11.6%

Theory

The geometric mean measures the magnitude of the returns, as the investor starts with one portfolio and ends with another. It does not measure the variability of the journey, as does the arithmetic mean. The geometric mean is backward looking. There is no difference in the geometric mean of two stocks or portfolios, one of which is highly volatile and the other of which is absolutely stable. The arithmetic mean, on the other hand, is forward-looking in that it does impound the volatility of the stocks.

To illustrate, Table 4A-1 shows the historical returns of two stocks, the first one is highly volatile with a standard deviation of returns of 65% while the second one has a zero standard deviation. It makes no sense intuitively that the geometric mean is the correct measure of return, one that implies that both stocks are equally risky since they have the same geometric mean. No rational investor would consider the first stock equally as risky as the second stock. Every financial model to calculate the cost of capital recognizes that investors are risk-averse and avoid risk unless they are adequately compensated for undertaking it. It is more consistent to use the mean that fully impounds risk (arithmetic mean) than the one from which risk has been removed (geometric mean). In short, the arithmetic mean recognizes the uncertainty in the stock market while the geometric mean removes the uncertainty by smoothing over annual differences.

Empirical Evidence

If both the geometric and arithmetic mean returns over the 1926–2004 data are regressed against the standard deviation of returns for the firms in the

deciles, the arithmetic mean outperforms the geometric mean in this statistical regression. Moreover, the constant of arithmetic mean regression matches the average Treasury bond rate and therefore makes economic sense while the constant for the geometric mean matches nothing in particular. This is simply because the geometric mean is stripped of volatility information and, as a result, does a poor job of forecasting returns based on volatility.

The following illustration is frequently invoked in defense of the geometric mean. Suppose that a stock's performance over a two-year period is representative of the probability distribution, doubling in one year ($r_1 = 100\%$) and halving in the next ($r_2 = -50\%$). The stock's price ends up exactly where it started, and the geometric average annual return over the two-year period, r_g, is zero:

$$
\begin{aligned}
1 + r_g &= [(1 + r_1)(1 + r_2)]^{1/2} \\
&= [(1 + 1)(1 - .50)]^{1/2} = 1 \\
r_g &= 0
\end{aligned}
$$

confirming that a zero year-by-year return would have replicated the total return earned on the stock. The expected annual future rate of return on the stock is not zero, however. It is the arithmetic average of 100% and −50%, (100 − 50)/2 = 25%. There are two equally likely outcomes per dollar invested: either a gain of \$1 when r = 100% or a loss of \$0.50 when r = −50%. The expected profit is (\$1 − \$.50)/2 = \$.25 for a 25% expected rate of return. The profit in the good year more than offsets the loss in the bad year, despite the fact that the geometric return is zero. The arithmetic average return thus provides the best guide to expected future returns.

What Academics Have to Say

Bodie, Kane, and Marcus (2005) cite:

> Which is the superior measure of investment performance, the arithmetic average or the geometric average? The geometric average has considerable appeal because it represents the constant rate of return we would have needed to earn in each year to match actual performance over some past investment period. It is an excellent measure of *past* performance. However, if our focus is on future performance, then the arithmetic average is the statistic of interest because it is an unbiased estimate of the portfolio's expected future return (assuming, of course, that the expected return does not change over time). In contrast, because the geometric return over a sample period is always less than the arithmetic mean,

> it constitutes a downward-biased estimator of the stock's expected return in any future year.
>
> Again, the arithmetic average is the better guide to future performance.

Another way of stating the Bodie, Kane, Marcus argument in favor of the arithmetic mean is that it is the best estimate of the future value of the return distribution because it represents the expected value of the distribution. It is most useful for determining the central tendency of a distribution at a particular time, that is, for cross-sectional analysis. The geometric mean, on the other hand, is best suited for measuring an investment's compound rate of return over time, that is, for time-series analysis. This is the same argument made by Ibbotson Associates (2005) where it is shown, using probability theory, that future terminal wealth is given by compounding the arithmetic mean, and not the geometric mean. In other words, if we accept the past as prologue, the best estimate of a future year's return based on a random distribution of the prior years' returns is the arithmetic average. Statistically, it is our best guess for the holding-period return in a given year.

Brigham and Ehrhardt (2005) in their widely used corporate finance text point out that the arithmetic average is more consistent with CAPM theory, as one of its key underpinning assumptions is that investors are supposed to focus, in their portfolio decisions, upon returns in the next period and the standard deviation of this return. To the extent that this next period is one year, the preference for the arithmetic mean, which derives from a set of single one year period returns, follows. It is also noteworthy that one of the crucial assumptions inherent in the CAPM is that investors are single-period expected utility of terminal wealth maximizers who choose among alternative portfolios on the basis of each portfolio's expected return and standard deviation.

Brealey, Myers, and Allen (2006) in their leading graduate textbook in corporate finance opt strongly for the arithmetic mean. The authors illustrate the distinction between arithmetic and geometric averages and conclude that arithmetic averages are appropriate when estimating the cost of capital:

> The proper uses of arithmetic and compound rates of return from past investments are often misunderstood. Therefore, we call a brief time-out for a clarifying example.
>
> Suppose that the price of Big Oil's common stock is \$100. There is an equal chance that at the end of the year the stock will be worth \$90, \$110, or \$130. Therefore, the return could be -10 percent, $+10$ percent or $+30$ percent (we assume that Big Oil does not pay a dividend). The expected return is $1/3(-10+10+30) = +10$ percent.

If we run the process in reverse and discount the expected cash flow by the expected rate of return, we obtain the value of Big Oil's stock:

$$PV = \frac{110}{1.10} = \$100$$

The expected return of 10 percent is therefore the correct rate at which to discount the expected cash flow from Big Oil's stock. It is also the opportunity cost of capital for investments which have the same degree of risk as Big Oil.

Now suppose that we observe the returns on Big Oil stock over a large number of years. If the odds are unchanged, the return will be -10 percent in a third of the years, $+10$ percent in a further third, and $+30$ percent in the remaining years. The arithmetic average of these yearly returns is

$$\frac{-10 + 10 + 30}{3} = +10\%$$

Thus the arithmetic average of the returns correctly measures the opportunity cost of capital for investments of similar risk to Big Oil stock.

The average compound annual return on Big Oil stock would be

$$(.9 \times 1.1 \times 1.3)^{1/3} - 1 = .088, \text{ or } 8.8\%$$

less than the opportunity cost of capital. Investors would not be willing to invest in a project that offered an 8.8 percent expected return if they could get an expected return of 10 percent in the capital markets. The net present value of such a project would be

$$NPV = -100 + \frac{108.8}{1.1} = -1.1$$

Moral: If the cost of capital is estimated from historical returns or risk premiums, use arithmetic averages, not compound annual rates of return (geometric averages).

(Richard A. Brealey, Stewart C. Myers, and Paul Allen, *Principles of Corporate Finance*, 8th Edition, Irwin McGraw-Hill, 2006, page 156–7.)

The widely cited Ibbotson Associates publication also contains a detailed and rigorous discussion of the impropriety of using geometric averages in estimating the cost of capital.[12]

[12] Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2005 Yearbook, Valuation Edition*, page 75.

> The arithmetic average equity risk premium can be demonstrated to be most appropriate when discounting future cash flows. For use as the expected equity risk premium in either the CAPM or the building block approach, the arithmetic mean or the simple difference of the arithmetic means of stock market returns and riskless rates is the relevant number. This is because both the CAPM and the building block approach are additive models, in which the cost of capital is the sum of its parts. The geometric average is more appropriate for reporting past performance, since it represents the compound average return.
>
> The argument for using the arithmetic average is quite straightforward. In looking at projected cash flows, the equity risk premium that should be employed is the equity risk premium that is expected to actually be incurred over the future time periods.
>
> The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean) of its past values.

In their widely publicized research on the market risk premium, Dimson, Marsh and Staunton (2002) state

> The arithmetic mean of a sequence of different returns is always larger than the geometric mean. To see this, consider equally likely returns of +25 and −20 percent. Their arithmetic mean is 2½ percent, since (25 − 20)/2 = 2½. Their geometric mean is zero, since (1 + 25/100) × (1 − 20/100) − 1 = 0. But which mean is the right one for discounting risky expected future cash flows? For forward-looking decisions, the arithmetic mean is the appropriate measure.
>
> To verify that the arithmetic mean is the correct choice, we can use the 2½ percent required return to value the investment we just described. A $1 stake would offer equal probabilities of receiving back $1.25 or $0.80. To value this, we discount the cash flows at the arithmetic mean rate of 2½ percent. The present values are respectively $1.25/1.015 = $1.22 and $0.80/1.025 = $0.78, each with equal probability, so the value is $1.22 × ½ + $0.80 × ½ = $1.00. If there were a sequence of equally likely returns of +25 and −20 percent, the geometric mean return will eventually converge on zero. The 2½ percent forward-looking arithmetic mean is required to compensate for the year-to-year volatility of returns.

Lastly, on the practical side, Bruner, Eades, Harris, and Higgins (1998) found that 71% of the texts and tradebooks in their extensive survey of practice supported use of an arithmetic mean for estimation of the cost of equity.

Mean Reversion Argument

Some academics have argued that if stock returns were expected to revert to a trend, this would suggest the use of a geometric mean since the geometric mean is, by definition, an estimate of a smoothed long-run trend increment. These same academics have argued that the historical estimate of the market risk premium (''MRP'') is upward-biased by the buoyant performance of the stock market prior to 2002, and because of the extraordinary and unusually high realized MRPs in those years, investors expect a return to lower MRPs in the future, bringing the average MPR to a more ''normal'' level.

The presence or absence of mean reversion is an empirical issue. The empirical findings are weak and highly contradictory; the empirical evidence is inconclusive and unconvincing, certainly not enough to support the ''mean reversion'' hypothesis. The weight of the empirical evidence on this issue is that the more sophisticated tests of mean reversion in the MRP demonstrate that the realized MRP over the last 75 years or so was almost perfectly free of mean reversion, and had no statistically identifiable time trend. It is also noteworthy that most of these studies were performed prior to the stock market's debacle in 2000–2002, years of extraordinary and unusually low realized MRPs. The stock market's dismal performance of 2000–2002 has certainly taken the wind out of the mean reversion school's sails.

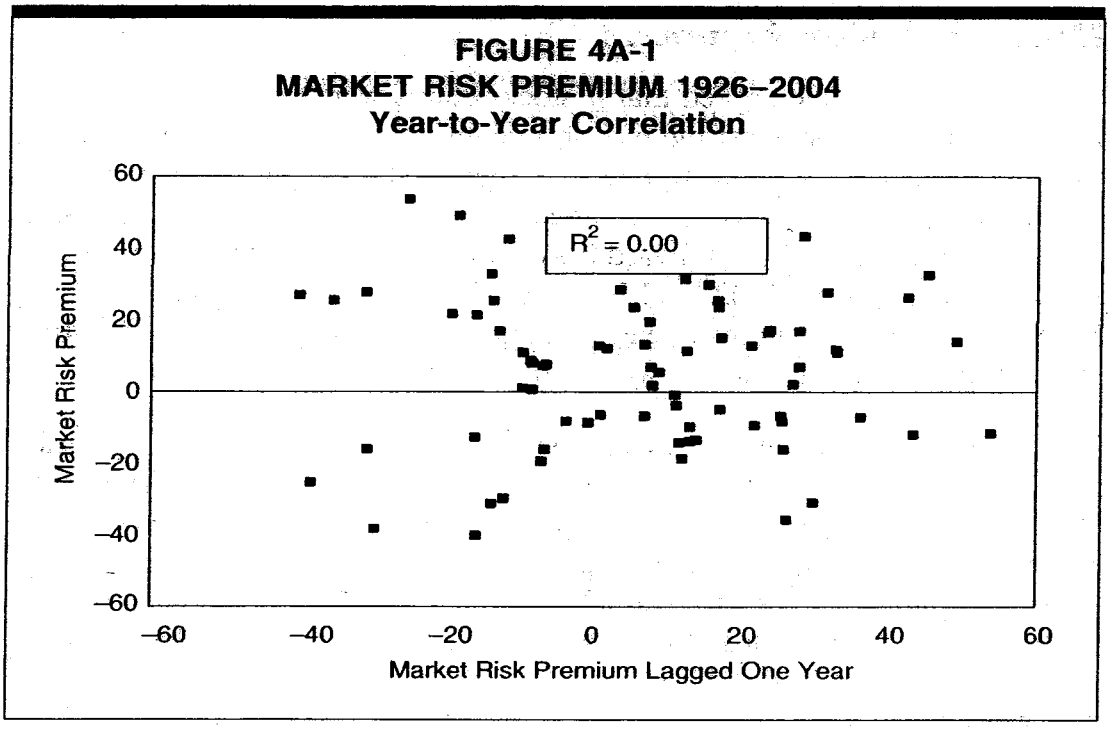
An examination of historical MRPs reveals that the MRP is random with no observable pattern. To the extent that the estimated historical equity risk premium follows what is known in statistics as a random walk, one should expect the equity risk premium to remain at its historical mean. Therefore, the best estimate of the future risk premium is the historical mean.

Ibbotson Associates (2005) find no evidence that the market price of risk or the amount of risk in common stocks has changed over time:

> Our own empirical evidence suggests that the yearly difference between the stock market total return and the U.S. Treasury bond income return in any particular year is random . . . there is no discernable pattern in the realized equity risk premium. (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2005 Yearbook, Valuation Edition,* pages 74–75)

In statistical parlance, there is no significant serial correlation in successive annual market risk premiums, that is, no trend. Ibbotson Associates go on to state that it is reasonable to assume that these quantities will remain stable in the future (*Id.*):

> The best estimate of the expected value of a variable that has behaved randomly in the past is the average (or arithmetic mean)



of its past values. (Ibbotson Associates, *Stocks, Bonds, Bills, and Inflation, 2004 Yearbook, Valuation Edition*, page 75)

Nowhere is it suggested by Ibbotson Associates that the market risk premium has declined over time.

Because there is little evidence that the MRP has changed over time, it is reasonable to assume that these quantities will remain stable in the future. Figure 4A-1 shows the relationship, or the lack of relationship, between year-to-year MRPs reported in the Ibbotson Associates Valuation Yearbook, 2005 edition, for the 1926–2004 period. The relationship is virtually absent, as indicated by the low R^2 of zero between successive MRPs. In other words, there is no history in successive MRPs as indicated by the zero serial correlation coefficient.

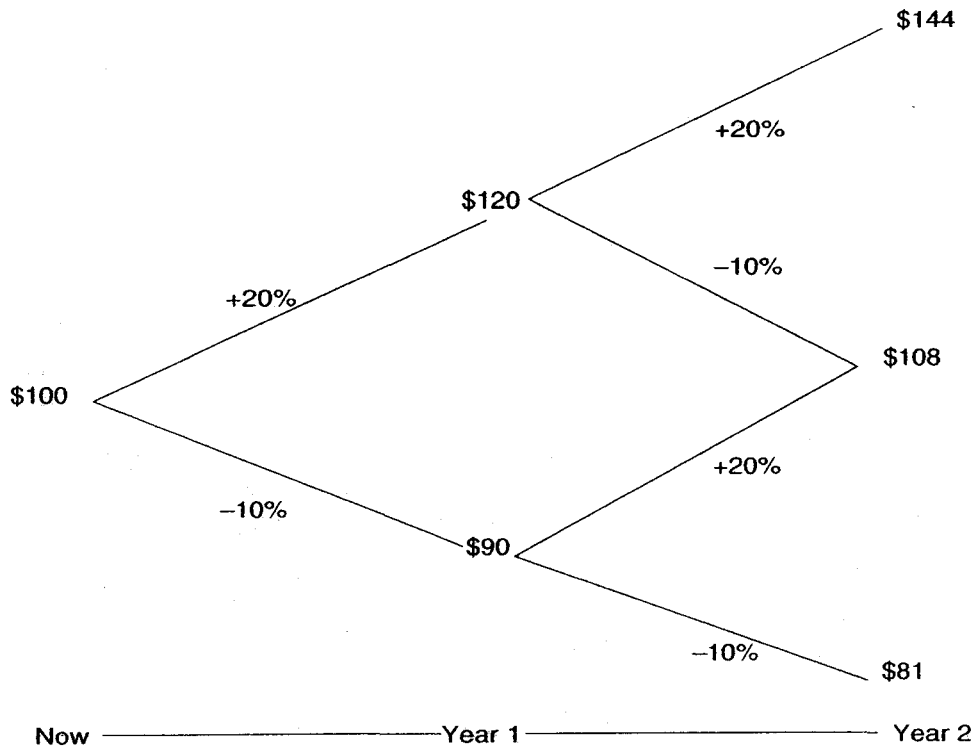
In short, the determination of the cost of capital with the CAPM requires an unbiased estimate of the expected annual return. The expected arithmetic return provides the appropriate measure for this purpose.

Formal Demonstration

This section shows why arithmetic rather than geometric means should be used for forecasting, discounting, and estimating the cost of capital.[13] By

[13] This section is adapted from a similar treatments and demonstration in Brealey, Myers, and Allen (2006) and Ibbotson Associates (2005).

FIGURE 4A-2
POSSIBLE STOCK PRICES



definition, the cost of equity capital is the annual discount rate that equates the discounted value of expected future cash flows (from dividends and the sale of the stock at the end of the investor's investment horizon) to the current market price of a share in the firm. The discount rate that equates the discounted value of future expected dividends and the end of period expected stock price to the current stock price is a prospective arithmetic, rather than a prospective geometric, mean rate of return. Since future dividends and stock prices cannot be predicted with certainty, the "expected" annual rate of return that investors require is an average "target" percentage rate around which the actual, year-by-year returns will vary. This target rate is, in effect, an arithmetic average.

A numerical illustration will clarify this important point. Consider a non-dividend paying stock trading for $100 which has, in every year, an equal chance of appreciating by 20% or declining by 10%. Thus, after one year, there is an equal chance that the stock's price will be $120 and an equal chance the price will be $90. Figure 4A-2 presents all possible eventualities after two periods have elapsed (the rates of return are presented at the end of the lines in the diagram).

The possible stock prices are shown in the following table.

TABLE 4A-2
STOCK PRICES AFTER TWO PERIODS

Price	Chance
$144	1 chance in 4
$108	2 chances in 4
$ 81	1 chance in 4

The expected future stock price after two periods is then:

$$1/4\ (\$144) + 2/4\ (\$108) + 1/4\ (\$81) = \$110.25$$

The cost of equity capital is calculated as the discount rate that equates the present value of the future expected cash flows to the current stock price. In the present simple example, the only cash flow is the gain from selling the stock after two periods have elapsed. Thus, using the expected stock price of $110.25 calculated above, the expected rate of return is that r, which solves the following equation:

$$\text{Current Stock Price} = \frac{\text{Expected Stock Price}}{(1 + r)^2}$$

The factor $(1 + r)^2$ discounts the expected stock price to the present. Substituting the numerical values, we have:

$$\$100 = \frac{\$110.25}{(1+r)^2}$$

$$r = 5\%$$

Thus, the cost of equity capital is 5%. This 5% cost of equity capital is equal to the prospective arithmetic mean rate of return, which is the probability-weighted average single period rate of return on equity. Since in every period there is an equal chance that the stock's return will be 20% or −10%, the probability-weighted average is:

$$1/2\ (20\%) + 1/2\ (-10\%) = 5\%$$

However, the 5% cost of equity capital is not equal to the prospective geometric mean rate of return, which is a probability-weighted average of the possible compounded rates of return over the two periods. Now consider the prospective geometric mean rate of return. Table 4A-3 shows the possible compounded rates of return over two periods, and the probability of each.

Thus, the prospective geometric mean rate of return is:

$$1/4\ (20\%) + 2/4\ (3.92\%) + 1/4\ (-10\%) = 4.46\%$$

TABLE 4A-3
STOCK PRICES AND RETURNS AFTER TWO PERIODS

Price	Chance	Compounded Return
$144	1 chance in 4	20.00%
$108	2 chances in 4	3.92%
$ 81	1 chance in 4	– 10.00%

This return is not equal to the 5% cost of equity capital.

The example can easily be extended to include the case of a dividend-paying company and will reach the same conclusion: the implied discount rate calculated in the DCF model is an expected arithmetic rather than an expected geometric mean rate of return.

The foregoing analysis shows that it is erroneous to use a prospective multi-year geometric mean rate of return as a "target" rate of return for each year of the period. If, for example, investors currently require an expected future rate of return on an investment of 13% each year, then 13% is the appropriate annual rate of return on equity for ratemaking purposes. Consequently, in using a risk premium approach for the purposes of rate of return regulation, the single-year annual required rate of return should be estimated using arithmetic mean risk premiums.

It should be pointed out that the use of the arithmetic mean does not imply an investment holding period of one year. Rather, it is premised on the uncertainty with respect to each year's return during the holding period, however many years that may be. When computing the arithmetic average of historic annual returns in order to calculate the average return (expected value of the return), every achieved return outcome is one possible future outcome for each year the security will be held. Each historic return has an equal probability of occurring during each year of the holding period. The resulting expected value of the risk premium is the arithmetic average of all of the past premiums considered, regardless of the length of the expected holding period.

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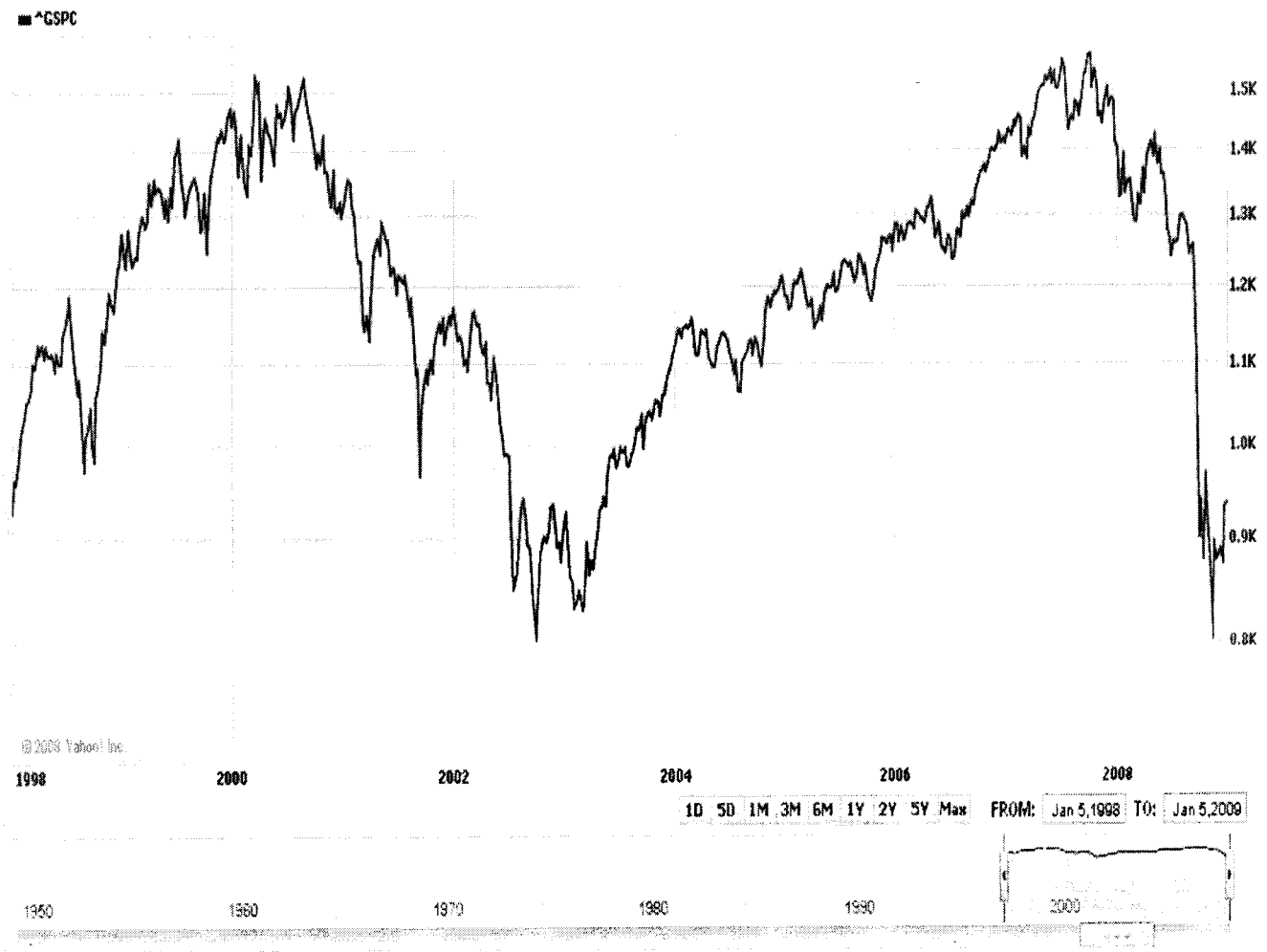

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A-22
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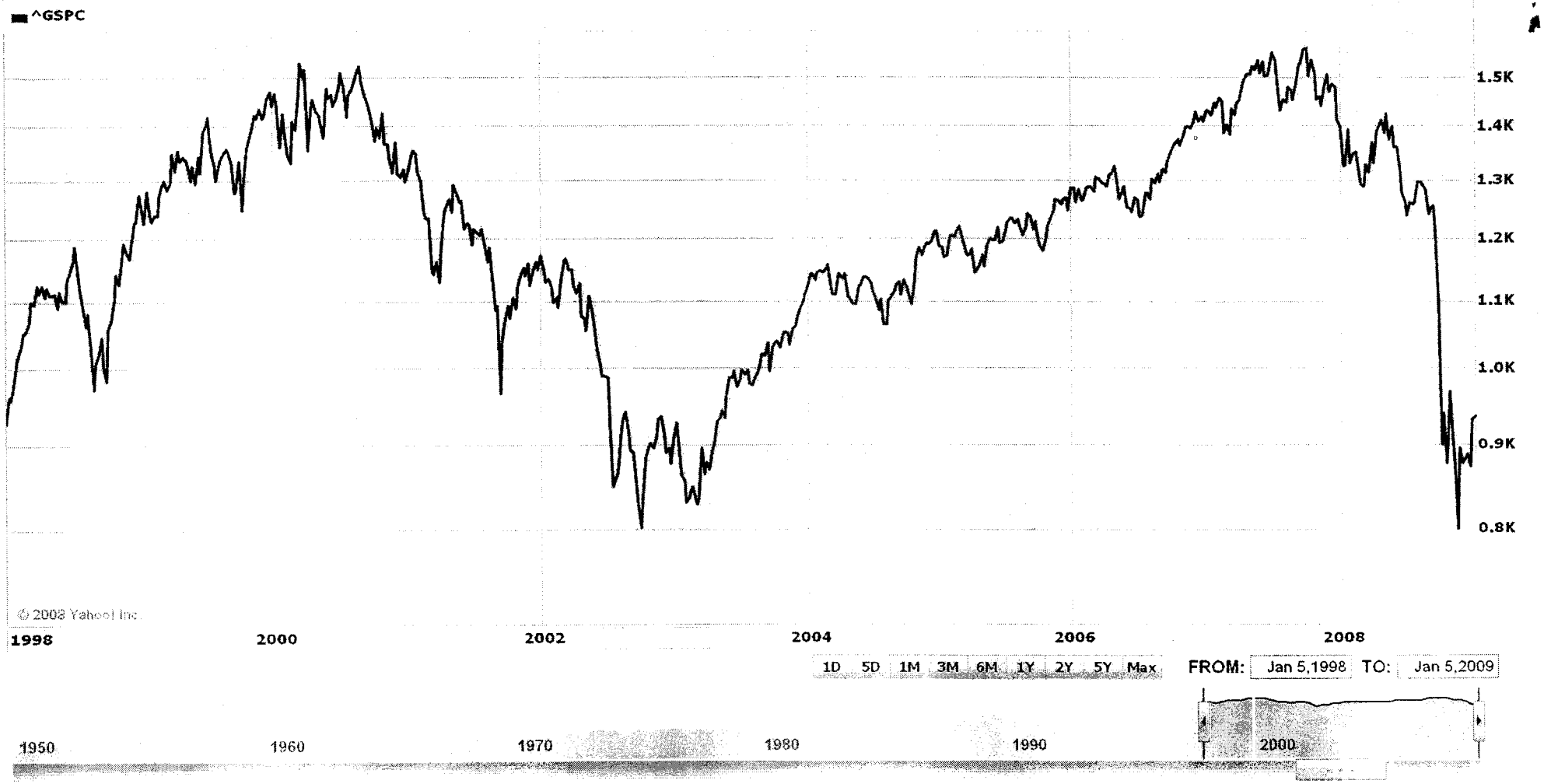
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1998
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American Water Completes Debt Offering

VOORHEES, N.J., Nov 26, 2008 (BUSINESS WIRE) --

American Water Works Company, Inc. (NYSE:AWK), the largest investor-owned U.S. water and wastewater utility company, today announced its financing subsidiary, American Water Capital Corp., successfully completed its public offering of $75.0 million aggregate principal amount of 10% Senior Monthly Notes due 2038.

American Water will use the net proceeds of the offering to repay short-term debt.

The notes are expected to be listed on the New York Stock Exchange.

Edward D. Jones & Co., L.P. served as the underwriter for the offering. Copies of the prospectus relating to the offering may be obtained from the offices of Edward D. Jones & Co., L.P., at 12555 Manchester Road, St. Louis, MO 63131. An electronic copy of the prospectus is available on the website of the Securities and Exchange Commission at www.sec.gov.

This press release shall not constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of such jurisdiction.

Founded in 1886, American Water is the largest investor-owned U.S. water and wastewater utility company. With headquarters in Voorhees, N.J., the company employs more than 7,000 dedicated professionals who provide drinking water, wastewater and other related services to approximately 15 million people in 32 states and Ontario, Canada.

SOURCE: American Water Works Company, Inc.

American Water Works Company, Inc.
Edward Vallejo
Vice President, Investor Relations
856-566-4005
edward.vallejo@amwater.com
or
Maureen Duffy
Director, Communications
856-309-4546
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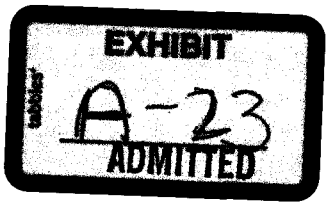

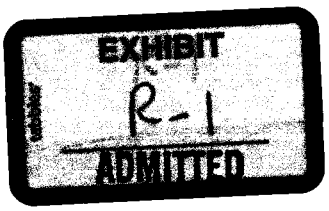

CHAPARRAL CITY WATER COMPANY, INC.
2006 RATE CASE
DOCKET NO. W-02113A-07-0551

RESPONSE TO RUCO'S FIRST SET OF DATA REQUESTS

February 1, 2008

Response provided by:	Robert Hanford
Title:	District Manager
Company Name:	Chaparral City Water Company
Address:	12021 N. Panorama Drive Fountain Hills, Arizona 85268
Company Response Number:	RUCO 1.10

Q. **Additional CAP Allocation** – Please provide the Company's growth projections by year of when the Company expects to need delivery of any of the 1,931 acre-feet/year of additional CAP allocation that Mr. Hanford references in his testimony on page 5, lines 7-9?

a) What year does the Company expect to use all of the additional 1,931 acre-ft/year referenced in 1.10 above including the Company's current CAP allocation referenced in 1.9 above?

b) Please explain and document the testimony of Mr. Hanford on page 5 that states, "CCWC has an opportunity to purchase an additional Central Arizona Project (CAP) allocation of 1,931 ac-ft/year."

c) Please provide documentation from CAWCD verifying both the lump-sum purchase price of $1,280,000 and the 5-year payment plan whereby the Company will pay $282,000 annually.

RESPONSE:

a) It depends on a variety of factors, including future growth and the water use rate with CCWC's service area, as well as the impact of any curtailments that may be imposed on future CAP water deliveries by CAWCD.

b) The ability to acquire an additional CAP allocation as part of the terms of the *Arizona Water Settlement Act* was a one-time opportunity that expired on December 31, 2007.

c) The Company made a lump sum payment to the CAWCD in November 2007 per the journal entry listed below.

	Cust Ref: 00000000000 ACH ORIGINATION - CHAPARRAL CITY W - FILE 1952696429 COID 3952696429	Bank Ref: IA000010125684	
11/30/2007	475 / CHECK PAID Cust Ref: 00000008614	Debit Amount: Bank Ref: IA0068723605530	7,960.00
11/30/2007	475 / CHECK PAID Cust Ref: 00000008641	Debit Amount: Bank Ref: IA0068804905562	25.37
11/30/2007	475 / CHECK PAID Cust Ref: 00000008643	Debit Amount: Bank Ref: IA0007239948342	14.81
	CHECK PAID Total	Debit Amount	8,020.18
11/30/2007	566 / RETURN ITEM Cust Ref: 00000000000 RETURN ITEM CHARGE - PAPER AZ 071130	Debit Amount: Bank Ref: IA0069229281167	65.59
11/30/2007	546 / INVEST ACCOUNT DEBIT Cust Ref: 00000000000 STAGECOACH SWEEP DEBIT	Debit Amount: Bank Ref: IA1130000000081	1,001,073.58
11/30/2007	495 / OUTGOING MONEY TRANSFER Cust Ref: 00000000000 WT FED*00022 Bank Of America/FTR/BNF=CENTRAL ARIZONA PROJECT SRF# IN07 I0291041207 TRN=071030054065 RFB= 000004526	Debit Amount: Bank Ref: IA0069855042000	[illegible]
	Debit Total	Debit Amount	2,306,977.50
	Account Net Amount		-3,172.00

Currency: USD
Bank: 121000248
Account: 4584706535(CA)

WELLS FARGO BANK, N.A.
Golden State Water Company

Page: 11

CHAPARRAL CITY WATER COMPANY, INC.
2006 RATE CASE
DOCKET NO. W-02113A-07-0551

RESPONSE TO RUCO'S FIRST SET OF DATA REQUESTS

February 1, 2008

Response provided by:	Robert Hanford
Title:	District Manager
Company Name:	Chaparral City Water Company
Address:	12021 N. Panorama Drive Fountain Hills, Arizona 85268
Company Response Number:	RUCO 1.9

Q. **Current Central Arizona Project ('CAP") Allocation** – Please provide the documentation and/or contract that substantiates the Company's current CAP allocation in acre-ft/year.

a) How many acre-feet did the Company take delivery of in year 2004, 2005, test-year 2006, and 2007?

RESPONSE: 2004: 6,455 ac-ft.

2005: 6,253 ac-ft.

2006: 7,334 ac-ft.

2007: 7,080 ac-ft.

Office of Assured and Adequate Water Supply
3550 N. Central Ave
Phoenix, Arizona 85012
Phone (602) 771-8512
Fax (602) 771-8689
Email:mjpickett@azwater.gov

Arizona Department of Water Resources

EXHIBIT
RR-2
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Fax

To:	Michele Woods	**From:**	Mary Pickett
Fax:	602-364-4846	**Pages:**	16
Phone:	602-364-4840	**Date:**	12/4/08
Re:	Chaparral City Water Company	**CC:**	

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• **Comments:**

Hi Michele,

Here is the annual report from 2007 on Chaparral City Water Company.

Any questions please call me at 602-771-8512.

Mary Pickett

Assured and Adequate Water Supply

ANNUAL WATER WITHDRAWAL AND USE REPORT
PROVIDER SUMMARY 2007

AWS 1
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F1 1
F2 1
G2 1
W1 1

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CHAPARRAL CITY WATER COMPANY
12021 N PANORAMA
FOUNTAIN HILLS AZ 85268

PHOENIX AMA (602) 771-8585

If any of the information preprinted on this report is incorrect, please make the necessary changes.

PART I GROUNDWATER WITHDRAWN

From Box 14, Schedule A attached

95 X $ 2.75 = $ 261.25

ACRE - FEET X Withdrawal Fee =

PART II WATER DELIVERED TO OTHER RIGHTS

From Box 24 Schedule D attached

~~7,080~~ ACRE - FEET 8/28/07

PART III WATER RECEIVED FROM OTHER RIGHTS

Total from Schedule E attached

~~0~~ ACRE - FEET

7,080 8/28/07

PART IV LATE FEES

Complete if filing after March 31. NOTE: A portion of a month after March 31 is counted as a full month.

6 — 1) Enter number of months late (Maximum of 6)

$ 150.00 — 2) Calculate Late Report Fee ($25.00 X number of months late)

$ 156.75 — 3) Calculate Late Payment Fee (10 % X number of months late X withdrawal fee calculated in Part I)

(.10 x 6 x 261.25)

PART V TOTAL FEES DUE

Add amounts from Parts I and IV

$ 568.00

Mail or hand deliver this report, together with the appropriate schedules, worksheets and fees to the Arizona Department of Water Resources. If mailed, the report must be postmarked no later than March 31, 2008. If hand delivered, the report must be received by the Department's Records Management Unit or local AMA office no later than 5:00 PM on March 31, 2008.

REPORTS FILED AFTER MARCH 31, 2008 ARE SUBJECT TO LATE FEES (A.R.S. § 45-632) AND PAYMENT OF PREVIOUSLY WAIVED MONETARY PENALTIES ASSOCIATED WITH PRIOR GROUNDWATER CODE VIOLATIONS.

I hereby certify, under penalty of perjury, that the information contained in this report is, to the best of my knowledge and belief, true, correct and complete.

X [signature] — AUTHORIZED SIGNATURE
District Manager — TITLE
8/25/08 — DATE

Robert Hanford — PRINTED NAME
480-837-3411 — TELEPHONE NUMBER

NOTE: THIS REPORT MUST BE FILED EVEN IF NO WATER WAS DELIVERED PURSUANT TO THIS RIGHT.

CHAPARRAL CITY WATER COMPANY

FAX

RECEIVED
AUG 28 2008
PHOENIX AMA

Date 8/28/09

Number of pages including cover sheet:

To: Mr. Walt Austen

Phone: 602-771-8610
Fax: 602-771-8688
C:

From Robert Hanford

Chaparral City Water Company
12021 N. Panorama
Fountain Hills, AZ 85268

Phone: (480) 837-3411
Fax: (480) 837-5310

Remarks: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Please see attached the corrected page 1 of CCWC's 2007 annual report. Thanks for catching this.

Rob

ARIZONA DEPARTMENT OF WATER RESOURCES, 3550 NORTH CENTRAL AVENUE, PHOENIX, AZ 85012-2105

ANNUAL WATER WITHDRAWAL AND USE REPORT
PROVIDER SUMMARY 2007

OWNER OF GROUNDWATER RIGHT

HANFORD, ROBERT
CHAPARRAL CITY WATER COMPANY
12021 N PANORAMA
FOUNTAIN HILLS AZ 85268

RECEIVED
AUG 25 2008
PHOENIX AMA

TYPE OF RIGHT
LARGE MUNICIPAL PROVIDER

RIGHT / PERMIT NO.
56-002011.0000

REPORTING PARTY
56-002011.0000
HANFORD, ROBERT
CHAPARRAL CITY WATER COMPANY
12021 N PANORAMA
FOUNTAIN HILLS AZ 85268

PHOENIX AMA (602) 771-8585

If any of the information preprinted on this report is incorrect, please make the necessary changes.

PART I GROUNDWATER WITHDRAWN

From Box 14. Schedule A attached

95 X $ 2.75 = $ 261.25

ACRE - FEET X Withdrawal Fee =

PART II WATER DELIVERED TO OTHER RIGHTS

From Box 24 Schedule D attached

7,080 ACRE - FEET

PART III WATER RECEIVED FROM OTHER RIGHTS

Total from Schedule E attached

Ø ACRE - FEET

PART IV LATE FEES

Complete if filing after March 31. NOTE: A portion of a month after March 31 is counted as a full month.

6 — 1) Enter number of months late (Maximum of 6)

$ 150.00 — 2) Calculate Late Report Fee ($25.00 X number of months late)

$ 156.75 — 3) Calculate Late Payment Fee (10 % X number of months late X withdrawal fee calculated in Part I

(.10 x 6 x 261.25)

PART V TOTAL FEES DUE

Add amounts from Parts I and IV

$ 568.00

Mail or hand deliver this report, together with the appropriate schedules, worksheets and fees to the Arizona Department of Water Resources. If mailed, the report must be postmarked no later than March 31, 2008. If hand delivered, the report must be received by the Department's Records Management Unit or local AMA office no later than 5:00 PM on March 31, 2008.

REPORTS FILED AFTER MARCH 31, 2008 ARE SUBJECT TO LATE FEES (A.R.S. § 45-632) AND PAYMENT OF PREVIOUSLY WAIVED MONETARY PENALTIES ASSOCIATED WITH PRIOR GROUNDWATER CODE VIOLATIONS.

I hereby certify, under penalty of perjury, that the information contained in this report is, to the best of my knowledge and belief, true, correct and complete.

X [signature] District Manager 8/25/08
AUTHORIZED SIGNATURE TITLE DATE

Robert Hanford 480-837-3411
PRINTED NAME TELEPHONE NUMBER

ARIZONA DEPARTMENT OF WATER RESOURCES, 3550 NORTH CENTRAL AVENUE, PHOENIX, AZ 85012-2105

ANNUAL WATER WITHDRAWAL AND USE REPORT
PROVIDER SUMMARY 2007

OWNER OF GROUNDWATER RIGHT

HANFORD, ROBERT
CHAPARRAL CITY WATER COMPANY
12021 N PANORAMA
FOUNTAIN HILLS AZ 85268

TYPE OF RIGHT
LARGE MUNICIPAL PROVIDER

RIGHT / PERMIT NO.
56-002011.0000

REPORTING PARTY
56-002011.0000
HANFORD, ROBERT
CHAPARRAL CITY WATER COMPANY
12021 N PANORAMA
FOUNTAIN HILLS AZ 85268

PHOENIX AMA (602) 771-858

If any of the information preprinted on this report is incorrect, please make the necessary changes.

PART I GROUNDWATER WITHDRAWN

From Box 14. Schedule A attached

95 X $ 2.75 = $ 261.25

ACRE - FEET X Withdrawal Fee =

PART II WATER DELIVERED TO OTHER RIGHTS

From Box 24 Schedule D attached

7,080 ACRE - FEET

PART III WATER RECEIVED FROM OTHER RIGHTS

To

PART IV LATE FEES

Complete if filing after March 31. NOTE: A portion of a month after March 31 is counted as a full month.

6 — 1) Enter number of months late (Maximum of 6)

$ 150.00 — 2) Calculate Late Report Fee ($25.00 X number of months late)

$ 156.75 — 3) Calculate Late Payment Fee (10 % X number of months late X withdrawal fee calculated in Part I)

(.10 x 6 x 261.25)

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X AUTHORIZED SIGNATURE

District Manager
TITLE

8/25/08
DATE

Robert Hanford
PRINTED NAME

480-837-3411
TELEPHONE NUMBER

ARIZONA DEPARTMENT OF WATER RESOURCES

SCHEDULE A

EPORT OF PUMPING

NNUAL REPORT 2007

Owner: HANFORD, ROBERT

1 RIGHT/PERMIT/BMP Farm Unit NO.: 56-002011.0000

ote: Pumpage for each well must be shown on the attached well worksheets. Information for up to four wells may be shown on each worksheet.

DWR WELL REGISTRATION NO.					3 Depth to Static Water Level (Designated Providers Only)			4	RECOVERED WATER PUMPED				PUMPED WATER RECEIVED IN EXCHANGE				13
40 Q	160 Q	LOCATION SEC	TWN	RNG	Date # 1 / Date # 2	Msmt # 1 / Msmt # 2	Well Running? (Y/N)	Ground-water Pumped	5 CAP	6 SW	7 EFF/IN	8 EFF/OUT	9 GW	10 CAP	11 SW	12 EFF	Total Pumped
55-604786 #10					1-26-07	324.2	No										
NW	NE	15	3.0N	6.0E	9-28-07	317.5	No	82.5									
55-604787 #11					1-26-07	173.4	No										
SW	SE	23	3.0N	6.0E	9-28-07	212.3	No	12.5									

TOTAL GROUNDWATER WITHDRAWN (acre-feet) 14* 95

* ENTER TOTAL ACRE-FEET OF GROUNDWATER WITHDRAWN IN PART I OF THE SUMMARY PAGE.

WORKSHEET W-1 2007

GROUNDWATER RIGHT/PERMIT/ BMP Farm Unit NO. 56-002011.000

1 DWR WELL REGISTRATION NO.: 55-604786 #10

10 Q	40 Q	160 Q	Sec	Twn	Rng
SW	NW	NE	15	3.0N	6.0E

2 TYPE OF MEASURING DEVICE: TOTALIZER
MAKE / MODEL: Sparling Tiger Mag
SIZE: 10"
UNITS MEASURED: gallons
INSTALLATION OR OVERHAUL DATE: 1996

3 POWER CO. NAME: SALT RIVER PROJECT
ACCOUNT NO.: 129-170-009
POWER METER NO.: 0391073
ENERGY CONSUMPTION: 99,440 UNITS: KWh

4 DOES ENERGY METER SERVE USES OTHER THAN THE WELL PUMP? Yes ☐ No ☒
ENTER "Y" OR "N" IN COLUMN 5 OF SCHEDULE

WATER TOTALIZING METER READINGS

5 INITIAL	6 ENDING	7 DIFFERENCE
125,331,000	152,215,000	26,884,000

IF METER WAS REPLACED DURING THE YEAR, INDICATE BEGINNING AND ENDING READING FOR EACH METER IN THE BOXES ABOVE.

8 ACRE FEET	82.5	9 BREAKDOWN ESTIMATE	Ø

Enter total Acre-feet Shown in 10 in Column 13 of Schedule A

10 TOTAL IN ACRE-FEET	82.5

---

1 DWR WELL REGISTRATION NO.: 55-604787 #11

10 Q	40 Q	160 Q	Sec	Twn	Rng
NW	SW	SE	23	3.0N	6.0E

2 TYPE OF MEASURING DEVICE: TOTALIZER
MAKE / MODEL: Sparling Tiger Mag
SIZE: 10"
UNITS MEASURED: GAL
INSTALLATION OR OVERHAUL DATE: 1996

3 POWER CO. NAME: SALT RIVER PROJECT
ACCOUNT NO.: 370-174-009
POWER METER NO.: 155025
ENERGY CONSUMPTION: 15,040 UNITS: KWh

4 DOES ENERGY METER SERVE USES OTHER THAN THE WELL PUMP? Yes ☐ No ☒
ENTER "Y" OR "N" IN COLUMN 5 OF SCHEDULE

WATER TOTALIZING METER READINGS

5 INITIAL	6 ENDING	7 DIFFERENCE
1963000	6,036,000	4,073,000

IF METER WAS REPLACED DURING THE YEAR, INDICATE BEGINNING AND ENDING READING FOR EACH METER IN THE BOXES ABOVE.

8 ACRE FEET	12.5	9 BREAKDOWN ESTIMATE	Ø

Enter total Acre-feet Shown in 10 in Column 13 of Schedule A

10 TOTAL IN ACRE-FEET	12.5

---

1 DWR WELL REGISTRATION NO.:

10 Q	40 Q	160 Q	Sec	Twn	Rng

2 TYPE OF MEASURING DEVICE:
MAKE / MODEL:
SIZE:
UNITS MEASURED:
INSTALLATION OR OVERHAUL DATE:

3 POWER CO. NAME:
ACCOUNT NO.:
POWER METER NO.:
ENERGY CONSUMPTION:
UNITS:

4 DOES ENERGY METER SERVE USES OTHER THAN THE WELL PUMP? Yes ☐ No ☐
ENTER "Y" OR "N" IN COLUMN 5 OF SCHEDULE

WATER TOTALIZING METER READINGS

5 INITIAL	6 ENDING	7 DIFFERENCE

IF METER WAS REPLACED DURING THE YEAR, INDICATE BEGINNING AND ENDING READING FOR EACH METER IN THE BOXES ABOVE.

8 ACRE FEET		9 BREAKDOWN ESTIMATE	

Enter total Acre-feet Shown in 10 in Column 13 of Schedule A

10 TOTAL IN ACRE-FEET	

---

1 DWR WELL REGISTRATION NO.:

10 Q	40 Q	160 Q	Sec	Twn	Rng

2 TYPE OF MEASURING DEVICE:
MAKE / MODEL:
SIZE:
UNITS MEASURED:
INSTALLATION OR OVERHAUL DATE:

3 POWER CO. NAME:
ACCOUNT NO.:
POWER METER NO.:
ENERGY CONSUMPTION:
UNITS:

4 DOES ENERGY METER SERVE USES OTHER THAN THE WELL PUMP? Yes ☐ No ☐
ENTER "Y" OR "N" IN COLUMN 5 OF SCHEDULE

WATER TOTALIZING METER READINGS

5 INITIAL	6 ENDING	7 DIFFERENCE

IF METER WAS REPLACED DURING THE YEAR, INDICATE BEGINNING AND ENDING READING FOR EACH METER IN THE BOXES ABOVE.

8 ACRE FEET		9 BREAKDOWN ESTIMATE	

Enter total Acre-feet Shown in 10 in Column 13 of Schedule A

10 TOTAL IN ACRE-FEET	

ARIZONA DEPARTMENT OF WATER RESOUR

SCHEDULE E

WATER RECEIVED FROM OTHER SOURCES

ANNUAL REPORT 2007

Owner: HANFORD, ROBERT

RIGHT/PERMIT/BMP Farm Unit NO.: 56-002011.0000

PART I - WATER RECEIVED FROM PRIMARY IRRIGATION DISTRICTS

PRIMARY DISTRICT Provider no.:

Your district user/ account number:

Name of Irrigation District:

Number of acres eligible to receive surface water:

TYPE OF WATER[1]		ACRE-FEET RECEIVED
GROUNDWATER		
SURFACE WATER	Decreed/Appropriative	
	Normal Flow	
	Spillwater	
	CAP	
IN-LIEU GROUNDWATER	Permit Holder	

1 – Do not include volumes of water associated with a permitted or enrolled exchange agreement in Part I. Water associated with an exchange agreement should be listed in Part III.

Total Part I: Ø

PART II - WATER RECEIVED OR DIVERTED FROM OTHER SOURCES

TYPE OF WATER	RIGHT NO.SUPPLYING WATER	DWR WELL NUMBER	HOW MEASURED OR ESTIMATED	ACRE-FEET RECEIVED
GROUNDWATER				
CAP	S-07-30-50067		Meter	7,080
EFFLUENT				
DECREED/APPROP. TAILWATER				

Total Part II: 7,080

PART III - WATER RECEIVED PURSUANT TO A PERMITTED OR ENROLLED EXCHANGE AGREEMENT

TYPE OF WATER	EXCHANGE NO. SUPPLYING WATER	PAYBACK FOR			HOW MEASURED OR ESTIMATED	ACRE-FEET RECEIVED
		QUANTITY	TYPE	YR GIVEN		
GROUNDWATER	67-					
	67-					
CAP	67-					
	67-					
EFFLUENT	67-					
	67-					
SRP	67-					
	67-					
OTHER SW	67-					
	67-					

Total Part III: Ø

Total acre-feet of received and diverted water(add amounts from PARTs I, II, and III.): 7,080

ARIZONA DEPARTMENT OF WATER RESOURCES

SCHEDULE F-1 PART 1

POPULATION

ANNUAL REPORT 2007

PROVIDER NAME

1 HANFORD, ROBERT

RIGHT/PERMIT NO.

56-002011.0000

Pursuant to the Third Management Plan, municipal water providers are required to supply the following information. This information is used to determine actual and target GPCD numbers for Large Municipal Providers and for planning information for Small Municipal Providers.

DEFINITION OF A HOUSING UNIT

A housing unit means a group of rooms or a single room occupied as separate living quarters. Examples of a housing unit include a single-family home, a townhouse, a condominium, an apartment, a permanently setup mobile home or a unit in a multi-family complex. A housing unit may be occupied by a family, a family and unrelated persons living together, two or more unrelated persons living together, or by one person. The number of housing units is ***not*** the number of service connections. Mobile homes in an overnight or limited-stay mobile home park or a unit in a campground, motel, hotel, or other temporary lodging facility are not considered housing units.

SINGLE-FAMILY HOUSING

A single-family housing unit is a detached dwelling. Include mobile homes ***not*** located in a mobile home park.

Single-Family Housing	Housing Units
Single-family housing units *(not service connections)* as of July 1, 2006 .	2 8,068
Indicate the net change (added and deleted) of single-family housing units *(not service connections)* in your service area between July 1, 2006 and July 1, 2007 .	3 88
Total single-family housing units *(not service connections)* as of July 1, 2007 .	4 8,156

MULTI-FAMILY HOUSING

A multi-family housing unit is a mobile home in a mobile home park or any permanent housing unit having one or more common walls with another housing unit located in a multi-family residential structure, including a unit in a duplex, triplex, four-plex, condominium development, townhouse development or apartment complex. Include mobile homes if they are located in a mobile home park. Do not include mobile homes that are located in an overnight or limited stay mobile home park.

Multi-Family Housing	Housing Units
Multi-family housing units *(not service connections)* as of July 1, 2006 .	5 4,161
Indicate the net change (added and deleted) of multi-family housing units *(not service connections)* in your service area between July 1, 2006 and July 1, 2007 .	6 46
Total multi-family housing units *(not service connections)* as of July 1, 2007 .	7 4,207

Please contact your local Active Management Area if you need assistance completing this form.

PHOENIX AMA (602) 771-8585 PINAL AMA (520) 836-4857 SANTA CRUZ AMA (520) 761-1814
PRESCOTT AMA (928) 778-7202 TUCSON AMA (520) 770-3800

ARIZONA DEPARTMENT OF WATER RESOURCES

SCHEDULE F-1 PART 2

MUNICIPAL PROVIDER WATER DELIVERIES

ANNUAL REPORT 2007

PROVIDER NAME

1 HANFORD, ROBERT

RIGHT/PERMIT NO.

56-002011.0000

Total Production _____

Pursuant to the Third Management Plan (TMP) and the Groundwater Code, large water providers are required to supply the following information. Do not include direct use effluent on this schedule (please use Part 3 of Schedule F-1).

MONTH	DELIVERIES IN ACRE-FEET									TOTAL
	RESIDENTIAL A		NON-RESIDENTIAL B							
	Single Family	Multi-Family	Industrial	Commercial	~~Govt.~~	Turf Related Facilities *	Other Turf **	Construction	Other ***	
Jan	206.36	103.18	0.01	31.04		0.34	44.89	4.93	7	397.74
Feb	189.77	94.88	0.09	32.14		0.44	37.17	2.68	7	364.16
Mar	186.35	93.18	0.11	26.67		0.37	33.13	2.56	43	385.37
Apr	230.82	115.41	0.14	32.74		0.44	46.79	5.91	32	464.25
May	226.91	113.46	0.14	36.35		0.02	59.78	4.0	5	445.65
Jun	284.11	142.05	0.13	43.31		1.28	92.47	5.19	5	575.53
Jul	303.98	151.99	0.14	41.00		0.02	115.61	5.06	5	622.79
Aug	273.40	136.70	0.14	41.41		2.45	123.50	3.67	5	586.27
Sep	329.27	164.64	0.25	48.84		0.92	140.40	3.88	5	693.19
Oct	251.50	125.75	0.01	34.72		1.06	89.32	1.74	5	509.10
Nov	267.48	143.74	0.16	41.31		0.90	157.87	24.75	5	661.20
Dec	224.08	112.04	0.16	34.38		0.23	64.73	1.11	5	441.73
Total Deliveries	2 2,994	3 1,497	4 1.47	5 414.90	6 —	7 8.48	8 1,005.64	9 65.5	10 129	11 6,145
Total Active Connections	12 8191	13 4,225	14 3	15 379	16 —	17 6	18 460	19 83	20 N.A.	21 13,347

* Turf Related Facilities includes turf-related facilities (10 or more acres of turf or other high water use landscaping) and landscaped public rights-of-way identified as Individual Users.

** Other Turf includes water delivered to other turf areas that are less than 10 acres.

*** Other includes unmetered deliveries. Unmetered deliveries must be calculated using a generally accepted method of estimating water use. Explain in a separate letter how any unmetered deliveries were calculated and to which category it would belong if it were metered. e.g. Industrial, Commercial, etc.

*** Water used in operations

Please contact your local Active Management Area if you need assistance completing this form.

PHOENIX AMA (602) 771-8585 PINAL AMA (520) 836-4857 SANTA CRUZ AMA (520) 761-1814
PRESCOTT AMA (928) 778-7202 TUCSON AMA (520) 770-3800

SCHEDULE F-1 PART 3

MUNICIPAL PROVIDER EFFLUENT USE

ANNUAL REPORT 2007

ARIZONA DEPARTMENT OF WATER RESOURCES

PROVIDER NAME

1 HANFORD, ROBERT

RIGHT/PERMIT NO.

56-002011.0000

Pursuant to the Third Management Plan, municipal water providers are required to supply the following information. Report the amount of effluent produced, received, delivered, reused, recharged or discharged in your service area in calendar year 2007. List effluent production for each plant in your service area separately.

Treatment Plant/Entity 2	Produced / Received in Acre-Feet A												
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL ACRE-FEET PRODUCED 3
Fountain Hills Sanitary District	215.01	189.02	201.81	187.50	157.47	163.42	169.25	184.72	182.20	180.03	185.73	195.63	2,213.79

Delivered to: 4	Delivered / Reused in Acre-Feet B												TOTAL ACRE-FEET DELIVERED 3
Turf Facilities	59.152	67.394	134.174	164.489	233.483	251.448	218.654	188.158	156.919	242.194	110.013	26.436	1,852.514
Government	14.145	4.286	14.042	19.682	29.695	29.173	19.061	12.211	12.576	35.788	15.841	6.177	212.678
Other													

Amount of effluent recharged as reported on the recharge annual report	5	647.44
Effluent Discharged	6	0

Please contact your local Active Management Area if you need assistance completing this form.

PHOENIX AMA (602) 771-8585 PINAL AMA (520) 836-4857 SANTA CRUZ AMA (520) 761-1814

ARIZONA DEPARTMENT OF WATER RESOURCES

SCHEDULE F-2

ELIVERIES TO TURF-RELATED FACILITIES
LING ON THEIR OWN BEHALF

NNUAL REPORT 2007

OWNER

HANFORD, ROBERT

1 **RIGHT/PERMIT NO.**

56-002011.0000

TURF-RELATED FACILITY NAME	3 RIGHT OR INDIVIDUAL USER NUMBER	A ACRE-FEET OF WATER DELIVERED *						CONSERVATION ALLOTMENT
		GW	CAP	COMMINGLED	OTHER ** SPECIFY	EFFLUENT	TOTAL DELIVERED	
ESERT CANYON GOLF CLUB	62-301045.0000			53	* ?	—	53 ?	484.1
OUNTAIN HILLS PARK	62-301046.0000					131.30	139.80	342.32
UNRIDGE CANYON G.C.	62-301199.0000			18		593.75	611.75	466.86
AGLE MTN GOLF CLUB	62-301200.0000			81		608.96	689.96	503.63
REROCK GC	62-301215.0000			36		650.13	686.13	531.84
	TOTAL ACRE-FEET DELIVERED	4 —	5 —	6 196.50	7 ?	8 1,984.14	9 2,180.64	

nclude only water delivered for watering turf and other water-intensive landscaping and for watering low water use plants.

Other -- Please specify water type. * Desert Canyon has a private well. Consumption is unknown as it is not a CCWC facility.

Please contact your local Active Management Area if you need assistance completing this form.

SCHEDULE G-2

TURF-RELATED FACILITIES

ANNUAL REPORT 2007

ARIZONA DEPARTMENT OF WATER RESOURCES

Facility Name: DESERT VISTA PARK

Facility No.: 20-220230.0000

Facility Owner :

Contact Name: FOUNTAIN HILLS PARK

Contact Address: ATTN: DONALD CLARK *

16705 E. AVENUE OF THE FOUNTAINS

FOUNTAIN HILLS,AZ 85269

Contact Phone: 480-816-5124

Rights Used at Facility:

56-002011.0000

If you received an annual use letter from an irrigation district or municipal provider, please submit a copy of their letter with your 2007 Annual Water Withdrawal and Use Report to validate deliveries received.

Pursuant to Chapter 6 of the Third Management Plan of your Active Management Area, all turf-related facilities are required to supply the following information. Please complete one form per turf-related facility. Instructions are listed on the reverse side of this form.

PART 1 - TURF RELATED WATER USE

Source		Entity or Water Right Number(s) Supplying Water	Amount (acre-feet)
Groundwater (including in-lieu groundwater)			
Effluent	• Municipal Reclaimed		
	• Other		
Surface Water	• Decreed/Appropriative		
	• Normal Flow		
	• Spillwater		
	• CAP		
Municipal (commingled/potable)			
Recovered water (specify type of water)			
Other (specify)			
		SUB-TOTAL OF TURF-RELATED WATER USE	
NON Turf-related water additional sheets may be used	Meter Readings:	Beginning: End: Subtract	< >
	Purpose:		
		TOTAL TURF-RELATED WATER USE	

PART 2 - LANDSCAPED AND WATER SURFACE AREAS CHANGES

Total turf acreage or percent overseeded _____

Has there been any landscape or water surface acreage changes at your facility? YES ☐ NO ☐

6-310 Monitoring and Reporting Requirements for Turf-Related Facilities:

An industrial user who uses water at a turf-related facility that commences watering to any new turfed acres, low water use landscaped area or water surface acres after January 1, 2007 shall submit to the director documentation of the new acres no later than 90 days after commencement of providing water to the new acres or receiving notice of these conservation requirements, whichever is later. The scale of the submitted documents, extent of turf acres, water surface acres, and low water use landscaped area must clearly be shown.

This form has been repeatedly sent in error to CCWC. This facility is not owned

SCHEDULE AWS

ASSURED WATER SUPPLY SUPPLEMENT FOR DESIGNATED PROVIDERS

ANNUAL REPORT 2007

ARIZONA DEPARTMENT OF WATER RESOURCES

Designated Provider

HANFORD, ROBERT

Right No.

56-002011.0000

Pursuant to A.R.S. § 45-632 and the Assured & Adequate Water Supply Rules, designated water providers are required to supply the following information. Instructions are listed under each section of this form.

Note: If any information pre-printed on this form is incorrect, please make the needed corrections. For any information not already pre-printed on this form, please follow the directions below. All parts must be completed.

PART 1 - COMMITTED DEMAND

Please provide the estimated future demand in acre-feet for undeveloped, recorded plats that are located in the area as of December 31, 2007. Report demand for residential versus non-residential lots separately.

Number of Residential Lots	Demand per Lot (af/yr)	Total Demand (af/yr)
1,011	0.359	363
Number of Non-Residential Parcels	**Total Demand (af/yr)**	
95	112	

Explain how the non-residential demand was calculated. Use a separate sheet if necessary.

The total number of non-residential parcels actually served at the end of 2007 was divided by the amount of water used by these accounts to obtain an equivalent factor of ac-ft/year per non-residential account.

PART 2 - PROJECTED ANNUAL DEMAND

Project the annual water demand in acre-feet for each year indicated. Calculate the increase in demand each year from the previous year. The projected demand in most cases will be greater than the total water use for the current calendar year. Current year demand should equal the total water deliveries in the service area for 2007 as reported on the Schedule F forms, plus system losses and unaccounted for water. Include all water sources used.

Year	Projected Population	GPCD	Total Production (af/yr)	Increase from Previous Year (af/yr)
2007	25,391	270	7,679	85
2008	25,550	270	7,727	48
2009	25,750	270	7,787	60
2010	27,388	270	8,283	496
2011	27,679	270	8,371	88
2012	27,898	270	8,437	66
2013	28,189	270	8,525	88
2014	28,515	270	8,623	98
2015	28,661	270	8,668	45
2016	28,843	270	8,723	55

PART 3 - WATER QUALITY

A. Is the provider currently in compliance with the Arizona Department of Environmental Quality's state water quality standards and reporting requirements? [X] Yes [ ] No

B. Have any new Superfund or WQARF sites been identified within the provider's service area or have existing contaminant plumes migrated to be within one mile of any service area wells? [ ] Yes [X] No

Please contact the Office of Assured and Adequate Water Supply if you need assistance completing this form.

(602) 771-8585

SCHEDULE AWS

ASSURED WATER SUPPLY SUPPLEMENT FOR DESIGNATED PROVIDERS

ANNUAL REPORT 2007

ARIZONA DEPARTMENT OF WATER RESOURCES

Designated Provider

HANFORD, ROBERT

Right No.

56-002011.0000

PART 4 - TOTAL WATER WITHDRAWN, DIVERTED OR RECEIVED - PHYSICAL AVAILABILITY REQUIREMENT

Please show all sources of water withdrawn, received or diverted in 2007. Refer to Schedule A for the total volume of water withdrawn in 2007. Subtract out deliveries to other rights in the rows indicated below. Water received should match Schedule E. Water delivered should match Schedule D. The total volume of water pumped as reported on Schedule A should match the total water withdrawn on line D.1 in the table below.

The total physically, legally and continuously available supply listed below is provided for your reference:

1.	Total water physically, legally and continuously available per designation order	9828	af

A. CAP Water:

1.	CAP received directly (do not include CAP storage credits recovered or CAP stored)	7,080	af
2.	CAP delivered directly to other rights (do not include individual user deliveries)	—	af
3.	Part 4.A.1 - Part 4.A.2 (total CAP for use within the service area in 2007)	7,080	af

B. Surface Water:

1.	Surface water received directly (do not include surface water storage credits recovered or surface water stored)	—	af
2.	Surface water delivered directly to other rights (do not include individual user deliveries)	—	af
3.	Part 4.B.1 - Part 4.B.2 (total surface water for use within the service area in 2007)	—	af

C. Effluent:

1.	Effluent received directly (do not include effluent storage credits recovered or effluent stored)	—	af
2.	Effluent delivered directly to other rights (do not include individual user deliveries)	—	af
3.	Part 4.C.1 - Part 4.C.2 (total effluent for use within the service area in 2007)	—	af

D. Water Withdrawn and Groundwater Received for Use in the Service Area in 2007:

1.	Total Water Withdrawn (include water storage credits recovered and exchange water)	95	af
2.	Groundwater Received from other rights	—	af
3.	Groundwater delivered to other rights (do not include individual user deliveries)	—	af
4.	Part 4.D.1 + Part 4.D.2 - Part 4.D.3 (total withdrawn water and groundwater received 2007)	95	af

Note: Pursuant to the Assured and Adequate Water Supply Rules the director shall consider recovered storage credits when determining physical availability of groundwater.

PART 5. - GROUNDWATER WITHDRAWALS - CONSISTENCY WITH GOAL REQUIREMENT

A. Total Groundwater for Use within the Service Area in 2007:

1.	Total from Part 4.D.4 above	95	af
2.	Water Withdrawn as Recovered Long-Term Storage Credits	—	af
3.	Water Withdrawn as Recovered Annual Storage Credits	—	af
4.	Part 5.A.1 - Part 5.A.2 - Part 5.A.3 (total groundwater for use in 2007)	95	af

B. Groundwater Exemptions:

1.	Total Groundwater from Part 5.A.4 above	95	af
2.	Poor Quality Groundwater Withdrawn *	—	af
3.	Water Logged Groundwater Withdrawn *	—	af
4.	Drought Exemption Groundwater Withdrawn **	—	af
5.	Part 5.B.1 above - sum of Parts 5.B.2 through 5.B.4 above	95	af
6.	Amount from line 5.B.5 above reported to the CAGRD as Excess Groundwater	64	af
7.	Part 5.B.5 above - Part 5.B.6 (groundwater subtracted from allowance account) ***	31	af

* Note: Poor quality groundwater and water logged groundwater must be listed on the designation order to qualify for subtraction here.

** Note: Drought exemption groundwater must be applied for in writing for each year in which the exemption is requested.

*** Note: For information on your groundwater account balance, contact the Office of Assured and Adequate Water Supply.

Please contact the Office of Assured and Adequate Water Supply if you need assistance completing this form.

CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT (CAGRD)
P.O. BOX 43020
PHOENIX, AZ 85080-3020
(623) 869-2243

RECEIVED
APR 11 2008
CAGRD

2007 ANNUAL REPORT - CAGRD

TO BE FILED BY MUNICIPAL WATER PROVIDERS WITH CAGRD MEMBER SERVICE AREAS

REPORTING PARTY (Water provider, Address)
Chaparral City Water Company
12021 N. Panorama Drive
Fountain Hills, AZ 85268
Attn: Robert Hanford

AMA: Phoenix
AWS DESIGNATION #: 26-401242

If any of the preprinted information provided on this report is incorrect, please make the necessary changes.

EXCESS GROUNDWATER DELIVERED TO MEMBER SERVICE AREA	1	TOTAL GROUNDWATER WITHDRAWN WITHIN THE MEMBER SERVICE AREA IN 2007* (Must equal the volume reported on part 5.B.5 of the Assured Water Supply Supplement of the ADWR 2007 Annual Report)	1	95 Acre-ft
	2	MINIMUM EXCESS GROUNDWATER FACTOR	2	0.67
	3	REQUIRED MINIMUM AMOUNT OF EXCESS GROUNDWATER (multiply line 1 by line 2, but not greater than 2000 AF)	3	64 Acre-ft
	4	ADDITIONAL AMOUNT REPORTED AS EXCESS GROUNDWATER	4	0 Acre-ft
	5	TOTAL EXCESS GROUNDWATER (sum of lines 3 and 4, not to exceed Line 1) (Must equal the volume reported on part 5.B.6 of the Assured Water Supply Supplement of the ADWR 2007 Annual Report, but not greater than 2000 AF)	5	64 Acre-ft
CONTRACT REPLENISHMENT ACCOUNT ACTIVITY	6	CONTRACT REPLENISHMENT ACCOUNT BALANCE AS OF JANUARY 1, 2007	6	0 Acre-ft
	7	CONTRACT REPLENISHMENT CREDITS ACCRUED IN 2007	7	0
	8	VOLUME OF CONTRACT REPLENISHMENT CREDITS TO BE APPLIED TO REDUCE THE 2007 REPLENISHMENT OBLIGATION	8	0
	9	CARRY FORWARD BALANCE IN THE CONTRACT REPLENSHMENT ACCOUNT (Sum of lines 6 and 7 minus line 8)	9	0
SERVICE AREA REPLENISHMENT OBLIGATION	10	2007 CAGRD SERVICE AREA REPLENISHMENT OBLIGATION (subtract line 8 from line 5)	10	64 Acre-ft

* If the basis for calculating the total groundwater reported on Line 1 is other than by meter, please attach a sheet describing the basis.

Mail or hand deliver the completed original of this Annual Report to the Central Arizona Project, 23636 North 7th Street, Phoenix, AZ 85024, and a copy to the Arizona Department of Water Resources, 3550 N. Central Avenue, Phoenix, AZ 85012-2105. If mailed, the report must be postmarked no later than March 31, 2008. If hand delivered, the report must be received by each entity listed above no later than 5:00 p.m. on March 31. 2008.

REPORTS FILED AFTER MARCH 31, 2008, ARE SUBJECT TO LATE FEES PURSUANT TO A.R.S. 48-3775.

Please enclose a copy of your 2007 ADWR Annual Withdrawal and Use Report (including the AWS Supplement) with this Report

I hereby certify, under penalty of perjury, that the information contained in this report is, to the best of my knowledge and belief, correct and complete.

AUTHORIZED SIGNATURE

District Manager
TITLE

April 9, 2008
DATE

Robert N. Hanford
PRINTED NAME

rhanford@gswater.com
E-MAIL ADDRESS

480-837-3411 ext 217
PHONE NUMBER

ARIZONA DEPARTMENT OF WATER RESOURCES
Office of Assured and Adequate Water Supply
3550 North Central Ave., 2nd Floor, Phoenix, Arizona 85012
Telephone (602) 771-8585
Fax (602) 771-8689

EXHIBIT
Pl. 3
ADMITTED

Janet Napolitano
Governor

Herbert R. Guenther
Director

LIST OF MUNICIPAL WATER PROVIDERS DESIGNATED AS HAVING AN ASSURED OR ADEQUATE WATER SUPPLY

May 12, 2008

The list on the reverse side of this page specifies the municipal water providers in the State of Arizona, which are currently designated by the Department of Water Resources as having an assured or adequate water supply. The terms "assured" and "adequate," although somewhat different in their legal implications, mean that sufficient water of suitable quality will be continuously available to meet the anticipated water needs for at least one hundred years.

Please note that assured and adequate water supply designations do not necessarily coincide with a city or town's corporate limits, nor with a private water company's franchised area. Also, since this listing is subject to change at any time, the Department of Water Resources should be contacted to obtain the most up-to-date information regarding the status of a water provider's assured or adequate water supply designation. In order for a new development to make use of a water provider's designation, there must exist a written commitment of service from the water provider. Pursuant to A.R.S. § 45-576, it is the responsibility of the platting entity to review this service agreement as evidence that the platted development will receive service from the designated provider.

Please address questions to the Arizona Department of Water Resources Office of Assured and Adequate Water Supply at (602) 771-8599.

SERVICE AREAS DESIGNATED AS HAVING AN ASSURED WATER SUPPLY

Within Active Management Areas

Phoenix AMA
City of Avondale
City of Chandler
City of El Mirage
Town of Gilbert
City of Glendale
City of Goodyear
City of Mesa
City of Peoria
City of Phoenix
City of Scottsdale
City of Surprise
City of Tempe
~~Chaparral City Water Company~~
Johnson Utilities, Inc.
Water Utilities Community Facility District, DBA "Apache Junction Water Company"

Pinal AMA
Town of Florence
City of Eloy
Santa Cruz Water Company
City of Casa Grande
Johnson Utilities Company

Prescott AMA
City of Prescott

Tucson AMA
Rancho Sahuarita Water Company
City of Tucson
Town of Oro Valley
Metropolitan Domestic Water Improvement District
Metropolitan Domestic Water Imp. District - West
Town of Marana
Spanish Trail Water Company
Vail Water Company
Willow Springs Utilities, LLC

Santa Cruz AMA
City of Nogales
Baca Float Water Company

Graham County
City of Safford

Coconino County
City of Flagstaff
City of Page

SERVICE AREAS DESIGNATED AS HAVING ADEQUATE WATER SUPPLIES

Outside of Active Management Areas

Mohave County
Cerbat Water Company
Golden Valley Water Improvement District
Joshua Valley Utility Company
City of Kingman
Lake Havasu City
Valley Pioneer Water Company
City of Bullhead City
(Arizona-American Water Works, Bermuda Water Company, North Mohave Valley Corporation)
Walnut Creek Water Company
Havasu Heights Domestic Water Improvement District

Yavapai County
Little Park Water Company
Big Park Water Company
American Ranch Domestic Water Improvement District
Verde Santa Fe Water Company
CDC Wickenburg Water, LLC
Camp Verde Water System, Inc.

Cochise County
City of Benson
City of Douglas
City of Willcox
Empirita Water Company
Bachmann Springs Utility Company

Maricopa County
Town of Wickenburg

Navajo County
City of Holbrook
City of Show Low
Town of Taylor
City of Winslow
Arizona Water Company, Lakeside and Pinetop
Town of Snowflake
Fools Hollow Water Company
Park Valley Water Company
Pineview Water Company
Voyager at White Mountain Lakes Water Co.

La Paz County
Town of Parker
Town of Quartzsite

Gila County
City of Globe

Yuma County
City of Yuma

Apache County
Town of Springerville
City of St. Johns

3.33%

EXHIBIT R-5 ADMITTED

Chaparral City Water Company
Trended Reconstruction Cost Plant
Test Year Ended December 31, 2006

Exhibit
Schedule B-4
Witness: Bourassa

Class	Class Description	NARUC	NARUC Description	Vin. Yr.	Month	Month	Original Cost	Source	HW155	Base	Index	Factor	RCN Cost
307	Land, Cap Easemts	303	Land and Land Rights	2000	07	12	271,857	NONE		0	0	1	271,857
		303 Total	Land and Land Rights				271,857						271,857
321	Pumping Structures and Improvements	304	Structure and Improvements	1982	01	12	3,628	HW155	304	434	226	1.9204	6,967
321	Pumping Structures and Improvements	304	Structure and Improvements	1996	01	12	48,948	HW155	304	434	307	1.4137	69,198
321	Pumping Structures and Improvements	304	Structure and Improvements	1999	07	12	2,479	HW155	304	434	324	1.3395	3,321
321	Pumping Structures and Improvements	304	Structure and Improvements	2004	01	06	2,258	HW155	304	434	276	1.5725	3,550
321	Pumping Structures and Improvements	304	Structure and Improvements	2005	01	06	132,731	HW155	304	434	414	1.0483	139,142
331	WT Structures and Improvments	304	Structures and Improvements	2002	07	12	768	HW155	304	434	365	1.189	913
331	WT Structures and Improvments	304	Structures and Improvements	2003	07	12	22,954	HW155	304	434	364	1.1923	27,368
331	WT Structures and Improvments	304	Structures and Improvements	2004	07	12	1,781	HW155	304	434	393	1.1043	1,967
331	WT Structures and Improvments	304	Structures and Improvements	2005	01	06	28,481	HW155	304	434	414	1.0483	29,857
331	WT Structures and Improvments	304	Structures and Improvements	2005	07	12	408,550	HW155	304	434	418	1.0383	424,197
331	WT Structures and Improvments	304	Structures and Improvements	2006	07	12	54,878	HW155	304	434	434	1	54,878
341	TD Structures and Improvements	304	Structures and Improvements	1975	01	12	8,493	HW155	304	434	136	3.1912	27,103
341	TD Structures and Improvements	304	Structures and Improvements	2004	01	06	1,130	HW155	304	434	276	1.5725	1,777
371	General Structure and Improvements	304	Structures and Improvements	1985	01	12	541	HW155	304	434	241	1.8008	974
371	General Structure and Improvements	304	Structures and Improvements	1986	01	12	337,768	HW155	304	434	246	1.7642	595,890
371	General Structure and Improvements	304	Structures and Improvements	1995	01	12	9,501	HW155	304	434	299	1.4515	13,790
371	General Structure and Improvements	304	Structures and Improvements	1996	01	12	115,630	HW155	304	434	307	1.4137	163,466
371	General Structure and Improvements	304	Structures and Improvements	1997	01	12	2,740	HW155	304	434	314	1.3822	3,787
371	General Structure and Improvements	304	Structures and Improvements	1998	01	06	19,231	HW155	304	434	316	1.3734	26,412
371	General Structure and Improvements	304	Structures and Improvements	2000	01	06	2,683	HW155	304	434	329	1.3191	3,539
371	General Structure and Improvements	304	Structures and Improvements	2003	07	12	73,503	HW155	304	434	364	1.1923	87,638
371	General Structure and Improvements	304	Structures and Improvements	2004	01	06	39,188	HW155	304	434	276	1.5725	61,622
371	General Structure and Improvements	304	Structures and Improvements	2004	07	12	143,638	HW155	304	434	393	1.1043	158,620
371	General Structure and Improvements	304	Structures and Improvements	2005	01	06	41,789	HW155	304	434	414	1.0483	43,807
371	General Structure and Improvements	304	Structures and Improvements	2006	01	06	10,671	HW155	304	434	424	1.0236	10,923
371	General Structure and Improvements	304	Structures and Improvements	2006	07	12	4,687	HW155	304	434	434	1	4,687
		304 Total	Structures and Improvements				1,518,648						1,965,394
315	SS Wells	307	Wells and Springs	1971	01	12	49,329	HW155	305	383	88	4.3523	214,695
315	SS Wells	307	Wells and Springs	1972	01	12	54,139	HW155	305	383	94	4.0745	220,589
315	SS Wells	307	Wells and Springs	1973	01	12	2,735	HW155	305	383	100	3.83	10,475
315	SS Wells	307	Wells and Springs	1974	01	12	80,987	HW155	305	383	120	3.1917	258,486
315	SS Wells	307	Wells and Springs	1982	01	12	20,245	HW155	305	383	218	1.7731	35,896
315	SS Wells	307	Wells and Springs	1986	01	12	8,999	HW155	305	383	238	1.6092	14,481
315	SS Wells	307	Wells and Springs	1996	01	12	108,047	HW155	305	383	287	1.3345	144,188
315	SS Wells	307	Wells and Springs	1998	01	06	1,655	HW155	305	383	298	1.2852	2,127
315	SS Wells	307	Wells and Springs	1999	01	06	2,500	HW155	305	383	305	1.2557	3,139
315	SS Wells	307	Wells and Springs	2000	01	06	3,429	HW155	305	383	312	1.2276	4,210
		307 Total	Wells and Springs				332,065						908,287
324	Pumping Equipment	311	Electric Pumping Equipment	1972	01	12	9,897	HW155	311	619	96	6.4479	63,815
324	Pumping Equipment	311	Electric Pumping Equipment	1973	01	12	48,255	HW155	311	619	100	6.19	298,698
324	Pumping Equipment	311	Electric Pumping Equipment	1974	01	12	74,696	HW155	311	619	122	5.0738	378,993
324	Pumping Equipment	311	Electric Pumping Equipment	1975	01	12	18,888	HW155	311	619	155	3.9935	67,362
324	Pumping Equipment	311	Electric Pumping Equipment	1978	01	12	15,276	HW155	311	619	192	3.224	49,250
324	Pumping Equipment	311	Electric Pumping Equipment	1979	01	12	48,180	HW155	311	619	205	3.0195	145,480
324	Pumping Equipment	311	Electric Pumping Equipment	1980	01	12	3,955	HW155	311	619	222	2.7883	11,028
324	Pumping Equipment	311	Electric Pumping Equipment	1981	01	12	30,920	HW155	311	619	245	2.5265	78,119
324	Pumping Equipment	311	Electric Pumping Equipment	1982	01	12	2,717	HW155	311	619	260	2.3808	6,469
324	Pumping Equipment	311	Electric Pumping Equipment	1985	01	12	34,865	HW155	311	619	282	2.195	76,529

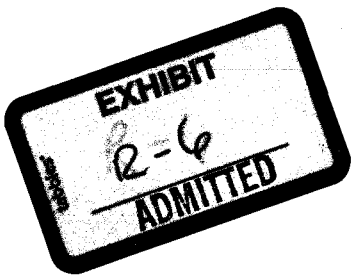
Depre Exp.
1,642.66
1,802.83

Concerns w/ plant

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustments to Revenues and Expenses
Adjustment Number 1

Exhibit
Schedule C-2
Page 2
Witness: Bourassa

Line No.						
1	Depreciation Expense					
2						
3	Account			Proposed	Depreciation	
4	No.	Description	Original Cost	Rate	Expense	
5	301	Organization Cost	-	0.00%	-	
6	302	Franchise Cost	-	0.00%	-	
7	303	Land and Land Rights	305,920	0.00%	-	
8	304	Structures and Improvements	1,518,648	3.33%	50,571	
9	305	Collecting and Impounding Res.	6,548	2.50%	164	
10	306	Lake River and Other Intakes	-	2.50%	-	
11	307	Wells and Springs	332,065	3.33%	11,058	
12	308	Infiltration Galleries and Tunnels	-	6.67%	-	
13	309	Supply Mains	-	2.00%	-	
14	310	Power Generation Equipment	-	5.00%	-	
15	311	Electric Pumping Equipment	1,506,908	12.50%	188,364	
16	320	Water Treatment Equipment	7,763,500	3.33%	258,525	
17	330	Distribution Reservoirs & Standpipe	8,170,420	2.22%	181,383	
18	331	Transmission and Distribution Mains	17,450,634	2.00%	349,013	
19	333	Services	7,389,930	3.33%	246,085	
20	334	Meters	2,725,673	8.33%	227,049	
21	335	Hydrants	1,171,633	2.00%	23,433	
22	336	Backflow Prevention Devices	-	6.67%	-	
23	339	Other Plant and Miscellaneous Equipment	1,610,687	6.67%	107,433	
24	340	Office Furniture and Fixtures	270,359	6.67%	18,033	
25	341	Transportation Equipment	535,315	20.00%	107,063	
26	342	Stores Equipment	-	4.00%	-	
27	343	Tools and Work Equipment	149,365	5.00%	7,468	
28	344	Laboratory Equipment	-	10.00%	-	
29	345	Power Operated Equipment	-	5.00%	-	
30	346	Communications Equipment	39,105	10.00%	3,911	
31	347	Miscellaneous Equipment	106,542	10.00%	10,654	
32	348	Other Tangible Plant	-	10.00%	-	
33		TOTALS	$ 51,053,253		$ 1,790,204	
34	**General Office Plant Allocated**					
35	301	Organization	528	0.00%	-	
36	302	Other Intangible Plant	0	0.00%	-	
37	304	Structures and Improvements	186,270	3.33%	6,203	
38	339	Other Plant and Equipment	27,201	3.33%	906	
39	340	Office Furniture and Equipment	458,027	6.67%	30,537	
40	341	Transportation Equipment	17,742	20.00%	-	Fully Depreciated
41	343	Tools and Work Equipment	13,021	5.00%	651	
42	344	Laboratory Equipment	130	10.00%	13	
43	346	Communication Equipment	5,315	10.00%	-	Fully Depreciated
44	345	Power Operated Equipment	8,001	5.00%	-	Fully Depreciated
45	Total GO Plant		$ 716,236		$ 38,309	
46	Less: Amortization of Contributions - Balance End of TY		$ 6,288,097	3.5065%	$ (220,495)	
47						
48	Total Depreciation Expense				$ 1,608,019	
49						
50	Test Year Depreciation Expense				$ 1,632,458	
51						
52	Increase (decrease) in Depreciation Expense				(24,439)	
53						
54	Adjustment to Revenues and/or Expenses				$ (24,439)	



CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-07-0551

DIRECT TESTIMONY
ON RATE CASE EXPENSE IN CONNECTION WITH
THE APPEAL AND REMAND OF DECISION NO. 68176

OF

WILLIAM A. RIGSBY

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

SEPTEMBER 30, 2008

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2 INTRODUCTION 1

3 BACKGROUND ON THE REMAND PROCEEDING 2

4 SUMMARY OF CHAPARRAL'S SUPPLEMENTAL TESTIMONY 5

5 RECOMMENDATION ON CHAPARRAL'S REQUEST 6

INTRODUCTION

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

A. My name is William A. Rigsby. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO") located at 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. Have you filed any other direct testimony in this case on behalf of RUCO?

A. Yes, on September 30, 2008, I filed, under separate cover, direct testimony which addressed the cost of capital issues associated with Chaparral City Water Company, Inc.'s ("Chaparral" or "Company") application requesting a permanent rate increase ("Application"). The Company filed its Application with the Arizona Corporation Commission ("ACC" or "Commission") on September 27, 2007.

Q. Please describe your qualifications in the field of utilities regulation and your educational background.

A. A complete description of my educational background and my experience in the field of utilities regulation is presented in my direct testimony on the cost of capital issues noted above.

...

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to respond to Chaparral's request for recovery of legal expenses in connection with the appeal and remand of Decision No. 68176, dated September 30, 2005 ("Remand Proceeding").

Q. What is RUCO recommending in regard to Chaparral's request for recovery of legal expenses in connection with the Remand Proceeding?

A. RUCO is recommending that the Commission deny the company's request for recovery of legal expenses in connection with the Remand Proceeding.

Q. How is your direct testimony organized?

A. My direct testimony contains four parts: the introduction that I have just presented; a background on the Remand Proceeding; a summary of Chaparral's supplemental testimony that makes its argument for recovery of legal expenses associated with the Remand Proceeding; and RUCO's recommendation on Chaparral's request.

BACKGROUND ON THE REMAND PROCEEDING

Q. Please provide the background on the Remand Proceeding that Chaparral is requesting recovery of legal expenses for.

A. On August 24, 2004 Chaparral filed an application for a permanent rate increase with the ACC. Over the course of the proceeding the Company

argued that an original cost rate of return was the appropriate rate of return to be applied to the Company's fair value rate base ("FVRB"). Both RUCO and ACC Staff opposed the company's argument and advocated that the Commission continue to use the established method used in prior rate cases, and apply a fair value rate of return to the Company's FVRB in order to avoid the awarding of excessive operating income to Chaparral.

On September 30, 2005, the Commission approved Decision No. 68176 which rejected Chaparral's argument and applied a fair value rate of return to the Company's FVRB. The Decision provided Chaparral with a revenue increase of $1,107,596 or an increase of 17.86 percent over test year adjusted operating revenues.

Following the Commission's decision on Chaparral's rate request, the Company filed an application for rehearing which the Commission took no action on. Chaparral subsequently filed an appeal[1] with the Arizona Court of Appeals, Division One ("Court of Appeals"). Chaparral's appeal claimed that Chaparral was denied a fair rate of return on its invested capital as a result of the Commission's established method of calculating a level of operating income based on the Company's FVRB.

On February 13, 2007, the Court of Appeals issued a Memorandum Decision which affirmed in part, vacated, and remanded Decision No. 68176 to the Commission for further determination.

[1] Chaparral City Water Co. v Arizona Corp. Comm'n, 1 CA-CC 05-0002, Mem. Decision at 2 (Ariz. Ct. App. 207).

Although the Court of Appeals found that the Commission did not comply with Article 15, § 14 of the Arizona Constitution when the Commission set Chaparral's rates based on original cost as opposed to the fair value of the Company's property, it affirmed the Commission's methodologies used to determine Chaparral's cost of equity.

On June 7, 2007, the ACC's Hearing Division issued a Remand Hearing Procedural Order which stated that, once a level of operating income, based on Chaparral's FVRB, has been calculated by an appropriate methodology, new just and reasonable rates will be designed to allow Chaparral to recover the amount of revenue that the Company is entitled to. The Remand Hearing Procedural Order also stated that if the results of the process demonstrate that the rates established in Decision No. 68176 are either too high or too low, the Commission should consider the necessity of providing a mechanism for either a surcharge or a refund. The Remand Hearing Procedural Order further stated that if the parties' proposed methodologies for determining a return on investment based on FVRB results in a measurably different revenue requirement, it may be necessary to reassess rate design.

The Remand Proceeding hearing began as scheduled on Monday, January 28, 2008 at 10:00 a.m. and was concluded on Tuesday, January 29. 2008. The Company, ACC Staff and RUCO filed testimony in the proceeding and offered expert witnesses for cross-examination during the hearing.

At a special open meeting held on July 17, 2008, the Commission approved Decision No. 70441 by a vote of four to one. The Decision adopted a modified version of the methodology recommended by RUCO witness Ben Johnson, Ph.D., and reduced the Company's cost of equity capital by an inflation factor of 200 basis points. The resulting 6.40 percent weighted average cost of capital was then applied to Chaparral's fair value rate base to arrive at an appropriate level of operating income for the Company (the revised annual operating figure provided the company with an additional $12,143 more than what was originally authorized in Decision No. 68176). The ROO recommended that the recovery, if any, of Chaparral's legal expenses incurred during the appeal and remand proceedings be considered in the Company's pending rate case proceeding.

SUMMARY OF CHAPARRAL'S SUPPLEMENTAL TESTIMONY

Q. Have you read the Company's supplemental testimony which requests the recovery of rate case expense associated with the Remand Proceeding?

A. Yes. I have read the supplemental testimony of Company witness Thomas J. Bourassa, which was filed on September 8, 2008.

Q. Briefly summarize Mr. Bourassa's supplementary testimony.

A. Briefly, Mr. Bourassa's supplementary testimony argues that the Company should be entitled to collect approximately half of the legal expenses that

the Company incurred as a result of Chaparral's appeal of Decision No. 68176.

Q. What specific amount of legal expense is Chaparral seeking and how does it propose to collect it?

A. Chaparral seeks to recover $258,511 out of a total amount of $520,000 in legal expenses attributed to both the Company's Appeal of Decision No. 68176 and the Remand Proceeding. The Company is proposing that the $258,511 be recovered through a commodity surcharge based on gallons sold (in 000's) during the most recent twelve month period. Mr. Bourassa has calculated a commodity rate of $0.124 per 1,000 gallons which he believes would allow Chaparral to recover the legal expense over approximately twelve months depending on the level of water sales. The company would cease to collect the surcharge once the $258,511 is recovered.

RECOMMENDATION ON CHAPARRAL'S REQUEST

Q. What is RUCO recommending on Chaparral's request to recover legal expenses attributed to both the Appeal of Decision No. 68176 and the Remand Proceeding?

A. RUCO recommends that the Commission reject Chaparral's request for recovery of legal expenses attributed to both the Appeal of Decision No. 68176 and the Remand Proceeding.

Q. Why does RUCO believe that the Commission should reject Chaparral's request for recovery of the Company's legal expenses?

A. RUCO believes that Chaparral made a conscious business decision to appeal Decision No. 68176. In making this business decision, the Company should have weighed all of the possible risks associated in obtaining a satisfactory decision from both the Court of Appeals and the ACC. The Company should have also taken into consideration what a possible outcome could mean in terms of obtaining its desired level of operating income. The chain of events that caused Chaparral to incur the legal expenses that it now seeks to recover from captive ratepayers can be directly attributed to the Company's business decision to appeal Decision No. 68176.

Q. Does RUCO believe that Chaparral's decision to appeal Decision No. 68176 benefited the Company's ratepayers?

A. No. Chaparral's Decision to appeal Decision No. 68176 was made strictly to increase the Company's operating income for the benefit of Chaparral's shareholders. Therefore, it is not reasonable for the Company to ask ratepayers to pay the expenses associated with the appeal and Remand Proceeding. In addition, the $258,511 rate case expense that the Company seeks to recover is excessive and not reasonable for the appeal and Remand Proceeding. The rate case proceeding produced a complete record and a body of evidence that allowed the Commission to set rates

that would generate an appropriate level of revenue to cover the Company's operating expenses and provide Chaparral with the opportunity to realize its authorized rate of return. Had the Company not pursued an appeal of Decision No. 68176, it would have realized $520,000 in funds that would not have been spent on costly litigation that only provided Chaparral with $12,143 more than what was originally authorized in Decision No. 68176. For this reason RUCO believes that the Commission should deny the Company's request for recovery of the legal expenses associated with both the appeal of Decision No. 68176 and the Remand proceeding.

Q. Is there any amount of recovery that RUCO could agree to should the Commission desire to grant some amount of legal expense to the Company?

A. The maximum amount that RUCO could possibly recommend is $117.79 which represents 0.0097 percent of the $12,143 in additional revenue granted to Chaparral in Decision No. 70441. This is the same percentage of rate case expense to operating revenue that was awarded to Chaparral in Decision No. 68176.

...

Q. Does your silence on any of the issues or positions addressed in the testimony of Mr. Bourassa or any of the Company's other witnesses constitute acceptance?

A. No, it does not.

Q. Does this conclude your direct testimony on Chaparral's request for recovery of rate case expense in connection with the repeal and remand of Decision No. 68176?

A. Yes, it does.

CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-07-0551

SURREBUTTAL TESTIMONY ON RATE CASE EXPENSE IN CONNECTION WITH THE APPEAL AND REMAND OF DECISION NO. 68176 AND COST OF CAPITAL

OF

WILLIAM A. RIGSBY, CRRA

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

NOVEMBER 20, 2008

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INTRODUCTION

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

A. My name is William A. Rigsby. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO") located at 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. Please state the purpose of your surrebuttal testimony.

A. The purpose of my surrebuttal testimony is to respond to Chaparral City Water Company Inc.'s ("Chaparral" or "Company") rebuttal testimony on RUCO's recommended rate of return on invested capital (which includes RUCO's recommended capital structure, cost of short-term debt, cost of long-term debt and cost of common equity) for the Company's water operations in Maricopa County. I will also respond to Chaparral's rebuttal testimony on the Company's request for recovery of legal expenses associated with the appeal and remand of Decision No. 68176, dated September 30, 2005 ("Remand Proceeding") and to the rebuttal testimony on RUCO's position on Chaparral's request for interim rates.

Q. Have you filed any prior testimony in this case on behalf of RUCO?

A. Yes, I filed direct testimony on the cost of capital issues in this case with the Arizona Corporation Commission ("ACC" or "Commission") on September 30, 2008. My direct testimony addressed the cost of capital issues that were raised in Chaparral's application requesting a permanent

rate increase ("Application") based on a test year ended December 31, 2006 ("Test Year"). I also filed, under separate cover, direct testimony which presented RUCO's position on the Company's request for recovery of legal expenses in connection with the appeal and remand of Decision No. 68176, dated September 30, 2005 ("Remand Proceeding").

Q. How is your surrebuttal testimony organized?

A. My surrebuttal testimony contains seven parts: the introduction that I have just presented; a summary of Chaparral's rebuttal testimony; a section on Remand Proceeding legal expenses; a section on interim rates; a section on capital structure; a section on the cost of debt (both short-term and long-term); and, a section on the cost of equity capital.

SUMMARY OF CHAPARRAL'S REBUTTAL TESTIMONY

Q. Have you reviewed Chaparral's rebuttal testimony?

A. Yes. I have reviewed the rebuttal testimonies of Company witnesses Robert N. Hanford, Robert J. Sprowls and Thomas J. Bourassa which were filed on October 31, 2008.

Q. Please summarize Mr. Hanford's rebuttal testimony as it relates to those portions of the case that you testified on.

A. Portions of pages eleven and twelve of Mr. Hanford's rebuttal testimony address the half million dollars of legal expenses associated with the

Remand Proceeding. Mr. Hanford takes issue with RUCO's recommendation that the Commission deny a Company-proposed surcharge which would recover $258,511 of the aforementioned half million dollars in legal expenses incurred by Chaparral during the Remand Proceeding.

Q. Please summarize Mr. Sprowl's rebuttal testimony.

A. Mr. Sprowl's rebuttal testimony concentrates on Chaparral's financial condition and takes issue with the positions that RUCO took in the Company's recent request for interim rates.

Q. Please summarize Mr. Bourassa's rebuttal testimony.

A. Mr. Bourassa's rebuttal testimony compares and contrasts the differences between our respective cost of capital analyses, which used both the discounted cash flow ("DCF") method and the capital asset pricing model ("CAPM") for estimating the cost of common equity in this case. Mr. Bourassa takes issue with the inflation adjustment I have made to my unadjusted cost of common equity estimate, the choice of companies that I use in my water company sample, my use of natural gas local distribution companies ("LDC") in my analysis, and the use of geometric means in the CAPM model.

REMAND PROCEEDING LEGAL EXPENSES

Q. What is the Company's rebuttal position on the recovery of legal expenses associated with the Remand Proceeding?

A. Company witness Hanford takes the position that Chaparral is entitled to $258,511 in Remand Proceeding legal expenses which the Company requested in supplemental testimony that was filed with the Commission on September 8, 2008.

Q. What is Mr. Hanford's rebuttal position on RUCO's recommendation that the Commission deny the Company's request for recovery of $258,511 in Remand Proceeding legal expenses?

A. Mr. Hanford agrees with RUCO's position that the Company made a business decision to appeal Decision No. 68176 but then goes on to say "so what?". Mr. Hanford opines that had the Commission followed the Arizona Constitution, none of the Remand Proceeding costs would have resulted.

Q. Please respond to Mr. Hanford's argument?

A. I will not make any comment on the legal issues raised in Mr. Hanford's argument (i.e. the constitutionality of the Commission's actions in the prior rate case), but I will stand by RUCO's position, that was presented in my direct testimony, that Chaparral's Decision to appeal Decision No. 68176

was made strictly to increase the Company's operating income for the benefit of the Company's shareholders.

Q. So the Company's rebuttal testimony has not persuaded RUCO to change or modify its position on this issue?

A. No. As I stated in my direct testimony, RUCO does not believe that it is reasonable for the Company to ask ratepayers to pay the expenses associated with the appeal and Remand Proceeding. Furthermore, RUCO reiterates its position that the Company-requested $258,511 in Remand Proceeding legal expense is excessive and unreasonable.

INTERIM RATES

Q. Please provide a brief background on RUCO's involvement in the Company's request for interim rates.

A. On September 8, 2008, the Company filed a request for $1,349,246 in interim rates which, according to the Company's filing, represents an increase of 18.12 percent over adjusted Test Year operating revenues. On September 23, 2008, RUCO filed a response recommending that the Company-requested interim rates be denied by the Commission. RUCO's arguments opposing Chaparral's request were consistent with the arguments that RUCO had previously made in a recent Arizona Public Service Company ("APS") request for interim rates. On October 20, 2008, a procedural conference was held at the Commission's Phoenix offices to

consider the Company's interim rate request and to discuss the procedure for resolving the matter. No procedural order on the matter has been issued to date.

Q. What is the Company's rebuttal position on RUCO's arguments opposing the approval of interim rates?

A. Company witness Sprowls takes issue with the positions taken by RUCO in its response to the Company's request for interim rates. Mr. Sprowls presents the Company's positions on the required revenue and rate base adjustments being made by RUCO in the Company's pending rate case (which will be addresses by RUCO witness Timothy J. Coley) and argues that RUCO's position on the Company's request for interim rates is "contrary to basic economics" and "is out of touch with financial reality." This is largely based on RUCO's observation that Chaparral's parent company, American States Water Company ("American States"), is in a position to infuse needed equity into Chaparral should the need arise. He also states that RUCO's interim rate arguments are illustrative of what he believes is a trend in Arizona to delay rate relief for utilities for as long as possible not withstanding their financial health.

...

Q. Please address Mr. Sprowls criticism of RUCO's position on the Company's request for interim rates?

A. RUCO disagrees with Mr. Sprowls' assertion that RUCO "is out of touch with financial reality." RUCO is not advocating that Chaparral's operations should be subsidized by its parent company on a full time basis. The fact that RUCO is recommending a $1,144,478 increase in gross revenues in this stage of the Company's rate case proceeding is evidence of this. RUCO does believe that cash infusions, from either direct investors or parent companies, to help any form of business entity to survive on a temporary basis is an economic reality that cannot be overlooked. The point that RUCO was trying to make is that American States is in a position to provide capital, if needed, to Chaparral until permanent rate relief is granted by the Commission.

Q. Have RUCO's arguments prevailed in other cases where Arizona utilities have requested interim rates?

A. Yes. Examples of this are the Commission's decision to deny interim rates to APS in Decision No. 68685, dated May 5, 2006, and the recent Recommended Order and Opinion of the ACC's Chief Administrative Law Judge which recommends denial of interim rates requested by APS in its pending rate case that is now before the Commission.[1]

[1] Docket No. E-01345A-08-0172

Q. Please comment on Mr. Sprowls' belief that there is a trend in Arizona to delay rate relief for utilities for as long as possible not withstanding their financial health.

A. RUCO disagrees with Mr. Sprowls' remarks. With few exceptions, every rate case proceeding in which RUCO has participated in resulted in timely rate relief by the Commission. The main reason that Chaparral's current rate proceeding has not been concluded is because of delays that are directly attributed to the Company's business decision to appeal Decision No. 68176.

CAPITAL STRUCTURE

Q. Briefly summarize the positions of the parties regarding capital structure.

A. As presented in Mr. Bourassa's rebuttal testimony, Chaparral is now proposing a capital structure that is comprised of 3.97 percent short-term debt, 19.45 percent long-term debt and 76.58 percent common equity. ACC Staff is recommending a capital structure comprised of 24.4 percent debt and 75.6 percent common equity. RUCO is recommending a revised capital structure comprised of 4.08 percent short-term debt, 19.17 percent long-term debt and 76.75 percent common equity.

...

Q. Why have you revised the capital structure that you recommended in your direct testimony?

A. I have revised my recommended capital structure for two reasons.

First, in my direct testimony I stated that I had adopted the Company's projected level of long-term debt which reflects the retirement of Chaparral's long-term Series 1997A (4.00% to 4.85%) serial bonds which became due during the period from 1998 to 2007. However, my capital structure calculation, exhibited on page 1 of Schedule WAR-1 in my direct testimony, failed to reflect the lower level of long term debt presented on page 3 of Schedule WAR-1 of my direct testimony. My revised capital structure now reflects the correct level of projected long-term debt.

Second, as explained in the surrebuttal testimony of RUCO witness Timothy J. Coley, RUCO has revised its recommendation regarding the Company's $1.28 million Central Arizona Project ("CAP") allocation. RUCO originally recommended that the Commission should deny rate base treatment for the entire amount of Chaparral's additional CAP allocation. RUCO has now adopted a modified version of ACC Staff witness Marvin E. Millsap's recommendation regarding the additional CAP allocation and is recommending that 50 percent of the $1.28 million be allowed in rate base and be treated as a non-depreciable asset in the Company's plant in service account. Accordingly, I have revised the level of common equity in my recommended capital structure to reflect a

reduction of $640,000 as opposed to the $1,280,000 common equity adjustment exhibited in my direct testimony.

COST OF DEBT

Q. Has there been any recent activity in regard to interest rates?

A. Yes. Since I filed my direct testimony on September 30, 2008, the Federal Reserve has cut the federal funds rate by another 100 basis points to its present level of 1.00 percent.

Q. Have you made any changes to your cost of short-term debt?

A. Yes. I have revised my recommended cost of short-term debt downward from 3.13 percent to 2.71 percent to reflect the most recent one year LIBOR[2] rate published in the November 12, 2008 issue of The Wall Street Journal. The lower LIBOR rate is reflective of the downward direction that interest rates have been moving in since I filed my direct testimony on September 30, 2008.

Q. What cost of short-term debt are the other parties to the case recommending at this point in time?

A. As I noted above, ACC Staff has eliminated short-term debt from its recommended capital structure. Chaparral is recommending a lower cost

[2] London Interbank Offered Rate

of short-term debt of 3.98 percent which is the one year LIBOR rate that was current prior to the filing date of Mr. Bourassa's rebuttal testimony.

Q. What costs of long-term debt are the parties to the case recommending?

A. The parties to the case are presently recommending the following:

Chaparral	5.33%
ACC Staff	5.00%
RUCO	5.34%

COST OF EQUITY CAPITAL

Q. Have you had an opportunity to update your recommended cost of common equity since you filed your direct testimony in this case?

A. Yes. On October 26, 2008, Value Line published its quarterly update on the water utility industry (the next quarterly update on the natural gas utility industry will not be published until December 12, 2008). Based on the information contained in the aforementioned Value Line update and a lower yield on the 5-year U.S. Treasury instrument that I use as a proxy for the risk free rate of return in my CAPM analysis, I have estimated an unadjusted cost of common equity of 8.60 percent which is 23 basis points lower than the 8.83 percent figure that I estimated in my direct testimony. Taking my revised capital structure, revised cost of short-term debt and the same 200 basis point adjustment for inflation that I recommended in

my direct testimony to my updated 8.60 percent cost of common equity would result in a FVRB weighed cost of capital of 6.19 percent. This is 19 basis points lower than the recommended 6.38 percent FVRB weighted cost of capital that I recommended in my direct testimony.

Q. Are you revising your recommended cost of common equity to 6.19 percent?

A. No. Given the currently low level of the federal funds rate noted earlier, and expectations of lower inflation as a result of the current economic slowdown, I have decided not to make any change to the inflation adjusted cost of common equity of 6.83 percent that I recommended in my direct testimony.

Q. What non-inflation-adjusted costs of common equity are the parties to the case presently recommending?

A. The parties to the case are presently recommending the following non-inflation-adjusted costs of common equity:

Chaparral	11.50%
ACC Staff	10.00%
RUCO	8.83%

Q. What inflation-adjusted costs of common equity are the parties to the case presently recommending?

A. Mr. Bourassa has not made any inflation adjustment to his revised 11.50 percent cost of common equity. ACC Staff and RUCO are presently recommending the following inflation-adjusted costs of common equity:

ACC Staff	8.80%
RUCO	6.83%

Q. What are the parties' recommended weighted costs of capital to be applied to Chaparral's FVRB?

A. The parties to the case are recommending that the following weighted costs of capital be applied to Chaparral's FVRB:

Chaparral	10.00%
ACC Staff	7.60%
RUCO	6.38%

As can be seen above, there is presently a 362 basis point difference between the Company-proposed 10.00 percent weighted cost of capital and RUCO's revised recommended FVRB weighted cost of capital of 6.38 percent. RUCO and ACC Staff's recommended FVRB weighted costs of capital fall within 122 basis points of each other. ACC Staff's

recommended 7.60 percent FVRB weighted cost of capital is 240 basis points lower than what the Company is recommending.

Despite my revisions to my recommended capital structure and cost of short-term debt, there is no change to the 6.38 percent weighted cost of capital to be applied to FVRB that I recommended in my direct testimony. The calculation is as follows:

DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	4.08%	2.71%	0.11%
LONG-TERM DEBT	6,865,000	(280,000)	6,585,000	19.17%	5.34%	1.02%
COMMON EQUITY	27,002,476	(640,000)	26,362,476	76.75%	6.83%	5.24%
TOTAL CAPITALIZATION	$ 35,267,476	$ (920,000)	$ 34,347,476	100.00%		
FVRB WEIGHTED COST OF CAPITAL						6.38%

Q. Please comment on Mr. Bourassa's revised cost of common equity figure of 11.50 percent.

A. Mr. Bourassa's proposed 11.50 percent cost of common equity relies on updated market data using the same methods that he used to calculate the results exhibited in his direct testimony, consequently, the comments that I made on his original analysis in my direct testimony still apply to his revised analysis.

...

Q. Do you agree with Mr. Bourassa's position that an inflation adjustment should be based on forward-looking estimates of inflation?

A. Yes and that is why I am relying on the method that was recommended by Ben Johnson, Ph.D., who testified on behalf of RUCO during the Remand Proceeding, and was adopted by the Commission in Decision No. 70441. As explained on page 38 of Dr. Johnson's direct testimony in the Remand Proceeding, the difference between the yields on Treasury Inflation-Protected Securities ("TIPS") and the yields on comparable U.S. Treasury bonds with similar liquidity and maturity characteristics can be used to estimate investors' future inflation expectations. That being the case, I believe that the method that I have used in this case, which is the same method used by Dr. Johnson in the Remand Proceeding, is appropriate.

Q. Please comment on Mr. Bourassa's position that your unadjusted common equity estimate should only be reduced by 50 percent of the inflation factor that you used in arriving at a FVRB rate of return.

A. Mr. Bourassa's logic is that the inflation adjustment should be cut in half because of the 50/50 weighting between OCRB and RCND rate base to arrive at a FVRB. On this point I believe that Mr. Bourassa's logic is misguided. He is attempting to apply an accounting-like matching convention that isn't really germane to this issue.

Q. Please explain why such a convention isn't germane to this issue.

A. Relying on Dr. Johnson's Remand Proceeding methodology, the main purpose for making an inflation adjustment to my estimated cost of equity is to avoid overcompensating investors for general inflation and not to offset year-to-year increases or decreases in a utility's specific rate base value as Mr. Bourassa is advocating.

Q. What do you mean by general inflation?

A. As explained in Dr. Johnson's surrebuttal testimony in the Remand Proceeding, it is inflation that is recognized by equity investors generally, because such inflation is already compensated for within the cost of equity capital. The proxy for this is the difference between the yields on TIPS and the yields on comparable U.S. Treasury bonds that I relied on to estimate investors' future inflation expectations. This is reflected in my inflation adjustment to the cost of common equity. For the reasons explained above, I believe that my 200 basis point inflation adjustment is appropriate.

...

Q. Do you believe, as Mr. Bourassa does, that Southwest Water Company ("SWWC") should have been excluded from your sample based on its percentage of revenues from water utility services as pointed out by Company witness Bourassa?

A. No. That would create a sample that is too small for the type of analysis that I conduct. Furthermore, I disagree with Mr. Bourassa's assertion that my estimates are biased downward because I have included SWWC. While it is true that regulated water utilities provided 43.0 percent of 2007 revenues for SWWC, according to Value Line's October 26, 2006 water utility industry update, the majority of SWWC's remaining revenues and earnings from its services group are derived from activities that are closely related to the provision of regulated water and wastewater services (i.e. equipment maintenance and repair, sewer pipeline cleaning, billing and collection services, and state-certified water and wastewater laboratory analysis on a contract basis) as opposed to highly speculative activities that are totally unrelated to the water and wastewater industry. It should be pointed out that Chaparral's parent company American States, which Mr. Bourassa and I included in our water company samples, is not a pure water provider either. American States not only provides electric service in California's Big Bear area, but also provides contract water and wastewater services to various military installations including Andrews AFB in Maryland. American States' 2007 Annual Report states that Chaparral's parent provides the complete operation and maintenance of

water and wastewater systems at a number of U.S. Army posts in Virginia including Fort Story, Fort Eustis, Fort Monroe and Fort Lee.

Q. Does RUCO agree with Mr. Bourassa's position that Chaparral's cost of common equity should be higher than the yet-to-be-determined authorized cost of common equity for Southwest Gas Corporation?

A. No. RUCO believes that each case should be decided on its own merits. The cost of capital estimated for Chaparral in this case was calculated in an economic environment that is different from the one that existed when Southwest Gas Corporation's cost of equity was estimated.

Q. Please comment on Mr. Bourassa's argument that the results of the natural gas sample of your cost of equity analysis are depressing your cost of equity estimate for Chaparral.

A. For the most part, natural gas LDC's have very similar operating characteristics with water companies such as Chaparral and are therefore a good proxy for water and wastewater utility cost of capital studies. Their inclusion also provides a larger sample to obtain an estimate from. In the recent Arizona-American Water Company ("Arizona-American") Sun City Water District Case, Arizona-American's cost of capital consultant also used a sample of LDC's to arrive at her final cost of equity estimate. In fact, in its initial closing brief in that case, Arizona-American criticized RUCO for relying on its water utility sample DCF results, and failing to give

more weight to the results of RUCO's LDC sample results[3]. Arizona-American stated the following:

> "Mr. Rigsby's base calculation is also flawed. His DCF recommendation equally weighted his DCF evaluations for his water utility samples and his gas utility samples.[60]
>
> Unfortunately, his water utility sample only contained four companies.[61] Mr. Rigsby conceded that a larger sample is better.[62] However, he went ahead and weighted this sample equally with his gas utility sample, which contained 10 companies.[63]
>
> Mr. Rigsby should have excluded the results of his DCF analysis for water utilities. Four companies are just not enough. Unusual events at just one company can unduly affect the entire sample, a risk that is smoothed when a larger sample is used. If we just exclude the DCF results for the water-utility sample, Mr. Rigsby's ROE estimate would increase even more."

Q. Please explain why Mr. Bourassa's criticism regarding the use of a geometric mean in your CAPM analysis is unfounded.

A. It is important to recognize that the information on both means, published by Morningstar, is widely available to the investment community. For this reason alone I believe that the use of both means in a CAPM analysis is appropriate.

The best argument in favor of the geometric mean is that it provides a truer picture of the effects of compounding on the value of an investment when return variability exists. This is particularly relevant in the case of the return on the stock market, which has had its share of ups and downs over the 1926 to 2007 observation period used in my CAPM analysis.

[3] Initial Brief of Arizona-American Water Company, Docket No. W-01303A-07-0209

Q. Can you provide an example to illustrate the differences between the two averages?

A. Yes. The following example may help. Suppose you invest $100 and realize a 20.0 percent return over the course of a year. So at the end of year 1, your original $100 investment is now worth $120. Now let's say that over the course of a second year you are not as fortunate and the value of your investment falls by 20.0 percent. As a result of this, the $120 value of your original $100 investment falls to $96. An arithmetic mean of the return on your investment over the two-year period is zero percent calculated as follows:

(year 1 return + year 2 return) ÷ number of periods =

(20.0% + -20.0%) ÷ 2 =

(0.0%) ÷ 2 = <u>0.0%</u>

The arithmetic mean calculated above would lead you to believe that you didn't gain or lose anything over the two-year investment period and that your original $100 investment is still worth $100. But in reality, your original $100 investment is only worth $96. A geometric mean on the other hand calculates a compound return of negative 2.02 percent as follows:

$$(\text{year 2 value} \div \text{original value})^{1/\text{number of periods}} - 1 =$$

$$(\$96 \div \$100)^{1/2} - 1 =$$

$$(0.96)^{1/2} - 1 =$$

$$(0.9798) - 1 =$$

$$-0.0202 = \underline{\underline{-2.02\%}}$$

The geometric mean calculation illustrated above provides a truer picture of what happened to your original $100 over the two-year investment period.

As can be seen in the preceding example, in a situation where return variability exists, a geometric mean will always be lower than an arithmetic mean, which probably explains why utility consultants typically put up a strenuous argument against the use of a geometric mean.

Q. Can you cite any other evidence that supports your use of both a geometric and an arithmetic mean?

A. Yes. In the third edition of their book, Valuation: Measuring and Managing the Value of Companies, authors Tom Copeland, Tim Koller and Jack Murrin ("CKM") make the point that, while the arithmetic mean has been regarded as being more forward-looking in determining market risk premiums, a true market risk premium may lie somewhere between the arithmetic and geometric averages published in Morningstar's SBBI yearbook.

Q. Please explain.

A. In order to believe that the results produced by the arithmetic mean are appropriate, you have to believe that each return possibility included in the calculation is an independent draw. However, research conducted by CKM demonstrates that year-to-year returns are not independent and are actually auto-correlated (i.e. a relationship that exists between two or more returns, such that when one return changes, the other, or others, also change), meaning that the arithmetic mean has less credence. CKM also explains two other factors that would make the Morningstar arithmetic mean too high. The first factor deals with the holding period. The arithmetic mean depends on the length of the holding period and there is no "law" that says that holding periods of one year are the "correct" measure. When longer periods (e.g. 2 years, 3 years etc.) are observed, the arithmetic mean drops about 100 basis points. The second factor deals with a situation known as survivor bias. According to CKM, this is a well-documented problem with the Morningstar historical return series in that it only measures the returns of successful firms. That is, those firms that are listed on stock exchanges. The Morningstar historical return series does not measure the failures, of which there are many. Therefore, the return expectations in the future are likely to be lower than the Morningstar historical averages. After conducting their analysis, CKM conclude that 4.0 percent to 5.5 percent is a reasonable forward-looking market risk premium. Adding the 2.95 percent 5-year Treasury yield (used

in my CAPM analysis) these two estimates indicate a cost of equity of 6.95 percent to 8.45 percent. Given the fact that utilities generally exhibit less risk than industrials, a good argument could be made that a return in the low end of this range is reasonable.

Q. How does your non-inflation adjusted cost of common equity compare with the 6.95 percent to 8.45 percent range noted above?

A. My non-inflation adjusted cost of common equity of 8.83 percent is 38 basis points higher than the 8.45 percent high end of the range.

Q. Has the Commission adopted cost of equity recommendations that relied on geometric means in prior cases?

A. Yes. The Commission has considered the use of geometric means to be appropriate and has consistently adopted the cost of capital estimates of expert witnesses who have relied on geometric means to develop their recommended costs of common equity.

Q. Can you name any other sources that support CKM's conclusion that 4.0 percent to 5.5 percent is a reasonable market risk premium on a forward-looking basis?

A. Yes. During the 39th annual Financial Forum of the Society of Utility and Regulatory Financial Analysts, which was held at Georgetown University in Washington D.C. on April 19 and 20, 2007, I had the opportunity to hear

the views of Aswarth Damodaran, Ph. D. and Felicia C. Marston, Ph. D., professors of finance from New York University and the University of Virginia, respectively. Both have conducted empirical research on this subject. Dr. Damodaran and Dr. Marston supported CKM's 4.0 to 5.5 percent estimates during a panel discussion that provided both professors with the opportunity to explain their research on the equity risk premium and to answer questions from other financial analysts in attendance. Each of the panelists[4] stated that they believed that a reasonable market risk premium fell between 4.0 percent and 5.0 percent when asked to provide estimates based on their research.

Q. What market risk premiums has Mr. Bourassa used in his CAPM analyses?

A. Mr. Bourassa used a market risk premium of 7.50 percent in his historical market risk premium CAPM analysis and a market risk premium of 14.40 percent in his current market risk premium CAPM analysis.

...

[4] Other analysts taking part in the panel discussion included Stephen G. Hill, CRRA, Principal, Hill Associates and moderator Farris M. Maddox, Principal Financial Analyst, Virginia State Corporation Commission.

Q. Please compare Mr. Bourassa's market risk premiums of 7.50 percent and 14.40 percent compare to the market risk premiums that you used in your CAPM analyses?

A. My market risk premium calculated with a geometric mean is 4.90 percent and my market risk premium calculated with an arithmetic mean is 6.50 percent. Based on the empirical research that I cited above, I believe that it is fair to say that Mr. Bourassa's market risk premium estimates are overly optimistic to say the least.

Q. If market risk premiums of 4.0 percent to 5.0 percent were used in your CAPM model what would the results be?

A. Using market risk premiums (r_m - r_f) of 4.0 percent to 5.0 percent in my CAPM model produces the following expected returns (k):

<u>Water Company Sample using 4.0 percent</u>

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

$$k = 2.95\% + [\, 1.05\, (4.0\%)\,]$$

$$k = 7.15\%$$

<u>Water Company Sample using 5.0 percent</u>

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

$$k = 2.95\% + [\, 1.05\, (5.0\%)\,]$$

$$k = 8.20\%$$

As can be seen above, my CAPM model, using a water company sample average beta (ß) of 1.05 and my recommended 5-year U.S. Treasury constant maturity rate for the risk free rate of return (r_f), produces an expected return (k) of 7.15 percent to 8.20 percent. My LDC sample, using an average beta of 0.82, produces expected returns of 6.23 percent to 5.84 percent. All of which makes my non-inflation adjusted 8.83 percent cost of common equity a reasonable estimate for Chaparral.

Q. Has any of the rebuttal testimony presented by Mr. Bourassa or any of the other witnesses for Chaparral convinced you to make adjustments to your recommended cost of common equity?

A. No.

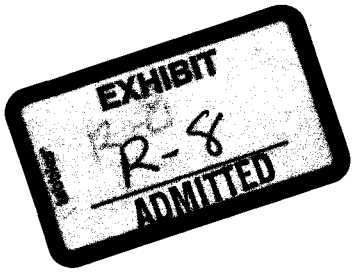
Q. Does your silence on any of the issues or positions addressed in the rebuttal testimony of the Company's witnesses constitute acceptance?

A. No, it does not.

Q. Does this conclude your surrebuttal testimony on CCWC?

A. Yes, it does.

CHAPARRAL CITY WATER COMPANY, INC.



DOCKET NO. W-02113A-07-0551

DIRECT TESTIMONY
ON REQUIRED REVENUE AND RATE DESIGN

OF

TIMOTHY J. COLEY

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

SEPTEMBER 30, 2008

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APPENDIX 1 – QUALIFICATIONS OF TIMOTHY J. COLEY

RUCO EXHIBIT 1

RUCO EXHIBIT 2

SCHEDULES TJC-1 THROUGH TJC-45

INTRODUCTION

Q. Please state your name and business address.

A. My name is Timothy J. Coley. My business address is 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. In what capacity and by who are you employed?

A. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO").

Q. Please state your educational background and qualifications in utility regulation.

A. Appendix 1, which is attached to this testimony, describes my educational background and includes a list of the rate case and regulatory matters in which I have participated.

Q. Have you previously testified in rate proceedings before the Arizona Corporation Commission?

A. Yes. I have previously presented testimony regarding revenue requirements in rate case proceedings before the Arizona Corporation Commission (hereafter referred to as "ACC" or "Commission).

Q. Please state the purpose of your testimony.

A. The purpose of my testimony is to present findings and recommendations resulting from my analysis and review of the Chaparral City Water Company, Inc.

(hereafter referred to as "Chaparral", or "Company") Rate Application for a permanent rate increase. Chaparral is engaged in providing water service to an area in eastern Maricopa County, Arizona, including the Town of Fountain Hills. During the test-year ended December 31, 2006, Chaparral served approximately 13,500 customers.

Q. What aspects of the Company's rate request will you address in your testimony?

A. I will sponsor RUCO's recommended original cost rate base ("OCRB") items, reconstruction cost new less depreciation ("RCND" or "RCN") rate base items, operating income and expenses, and rate design. RUCO witness William A. Rigsby is sponsoring RUCO's recommended cost of capital and capital structure issues. Mr. Rigsby will also sponsor testimony on Chaparral's request to recover legal expenses associated with the Company's appeal of Decision No. 68176.

Q. Please describe your participation and work effort on this project.

A. I performed the following procedures to determine whether sufficient, relevant, and reliable evidence exists to support the financial data and claims in the Company's application: reviewed and analyzed the Company's application and supporting work papers, reviewed all other intervenors' data requests, prepared written data requests and evaluated the Company's responses, contacted Company witness, Mr. Thomas Bourassa, for other information, reviewed annual reports and prior Commission decisions regarding Chaparral.

Q. Please identify the exhibits and schedules that you are sponsoring.

A. My testimony is composed of rate base and operating income schedules for Chaparral. The schedules are labeled TJC-1 through TJC-45.

Q. Does your silence on any issues or matters pertaining to the Company's application constitute RUCO's acceptance of the Company's position?

A. No.

THE TEST YEAR

Q. What historical test-year did the Company utilize in its rate application?

A. The Company chose a test year ending December 31, 2006 ("Test Year").

Q. Does RUCO agree with the Company's chosen historical Test Year?

A. Yes.

REVENUE REQUIREMENTS

Q. Please summarize the results of your analyses for Chaparral City Water and your recommended revenue requirement.

A. Chaparral's revenue should be increased by no more than $1,062,786. This recommendation is summarized on Schedule TJC-1. My recommended original cost rate base ("OCRB") is $21,328,051. My recommended RCND rate base is $33,674,604. The average OCRB and RCND rate base equals the fair value rate base ("FVRB") in the amount of $27,501,327 for Chaparral. This information is

shown on Schedule TJC-2. The detail supporting the OCRB is presented on Schedules TJC-3 while the detail supporting the RCND rate base is shown on Schedule TJC-13. The Company has requested that its FVRB be used for setting its rates in this application. My adjusted test year operating income of $1,101,299 is detailed and presented on Schedule TJC-31. My recommended adjusted operating income of $1,753,854 is shown on Schedule TJC-30.

SUMMARY

Q. Please summarize the recommendations and adjustments you cite in your testimony.

A. The following recommended adjustments summarize my testimony:

Original Cost Rate Base ("OCRB") Adjustments:

Adj. #1 – Intentionally Left Blank

Adj. #2 – Intentionally Left Blank

Adj. #3 – Remove Wells 8 & 9 – This adjustment removes well numbers 8 & 9 from Gross Utility Plant in Service ("GUPIS") and reduces plant by $103,468. A corresponding adjustment of $103,468 to accumulated depreciation is necessary to eliminate the related accumulated depreciation. These two wells are no longer in service.

Adj. #4 – Intentionally Left Blank

Adj. #5 – Remove Shea Treatment Plant #1 - This adjustment removes Shea Treatment Plant #1 from GUPIS and reduces plant by $2,010,923. A corresponding adjustment to accumulated depreciation is necessary in the amount of $2,010,923 to eliminate the related accumulated depreciation. This plant has not been in service since 2003.

Adj. #6 – Capitalize Expensed Plant Items – This adjustment increases GUPIS by $43,217. The Company expensed some plant items that are more appropriately capitalized because they have an estimated useful life of 12 – 15 years. A corresponding adjustment to decrease the appropriate expense will be discussed later in the operating income section.

Adj. #7 – Intentionally Left Blank

Adj. #8 – Intentionally Left Blank

Adj. #9 - Accumulated Depreciation – This adjustment decreases accumulated depreciation by $76. It reflects RUCO's recommended accumulated depreciation balance since the Company's last rate case. The adjustment is the result of my analysis, which used the Commission - approved level of plant in the Company's prior rate case as a starting point, and then reconstructed all subsequent plant

additions, retirements, adjustments, and transfers using the ACC approved depreciation rates.

Adj. #10 – General Office Plant and Accumulated Depreciation – This adjustment reduces General Office plant by $95,944 and accumulated depreciation by $51,498. The adjustment corrects the Company's 4-Factor General Office allocation factor from 3.21 percent to 2.8 percent.

Adj. #11 – Remove Post-Test-Year General Office Plant – This adjustment removes post-test-year plant and reduces General Office plant by $15,434.

Adj. #12 – Intentionally Left Blank

Adj. #13 – Intentionally Left Blank

Adj. #14 – Contributions in Aid of Construction ("CIAC") – This adjustment increases CIAC and OCRB by $1,523. The Company used an amortization rate that was different than authorized in Commission Decision No. 68176.

Adj. #15 – Additional Central Arizona Project ("CAP") Allocation – This adjustment removes the additional CAP allocation as not used and useful. It reduces OCRB by $1,280,000.

Adj. #16 – Working Capital – This adjustment reduces working capital in the amount of $111,606 by including a cash working capital calculation that the Company failed to provide in its rate application.

Reconstruction Cost New less Depreciation ("RCND" or "RCN") Rate Base Adjustments:

Adj. #1 – Reconstruction Cost New ("RCN") Factor Rounding – The adjustment decreases RCN direct plant by $118 and corrects the Company's truncating of the RCN factor when trending the plant up to reconstruction cost new values.

Adj. #2 – Correct Plant Account 304 RCN Index Factors on Three Line Items – This adjustment reduces both GUPIS and accumulated depreciation by $17,807 and $4,411 respectively. It corrects the RCN Index Factors for three direct plant line items in account 304.

Adj. #3 – Remove Wells 8 & 9 – This adjustment removes well numbers 8 & 9 from RCN GUPIS. It reduces both plant and accumulated depreciation by $435,284. These two wells are no longer in service.

Adj. #4 – Remove RCN Double Count of Plant Transfers Authorized in Commission Decision No. 68176 – This adjustment removes a double count from the RCN UPIS that was previously authorized in Commission Decision No. 68176.

Adj. #5 – Remove Shea Treatment Plant #1 - This adjustment removes Shea Treatment Plant #1 from RCN GUPIS and reduces plant and accumulated depreciation by $3,262,891. This plant has not been in service since 2003.

Adj. #6 – Capitalize Expensed Plant Items – This adjustment increases GUPIS by $43,217. The Company expensed some plant items that are more appropriately capitalized because they have an estimated useful life of 12 – 15 years. A corresponding adjustment to decrease the appropriate expense will be discussed later in the operating income section.

Adj. #7 – RCN Direct GUPIS Reconciliation Rounding Adjustment – This adjustment is necessary to reconcile to RUCO's level of RCN GUPIS. It increases GUPIS by $35.

Adj. #8 – RCN Direct Plant Accumulated Depreciation Adjustment – This adjustment decreases RCN direct plant accumulated depreciation by $370,826 to reconcile with RUCO's level of RCN accumulated depreciation.

Adj. #9 – Intentionally Left Blank

Adj. #10 – General Office RCN Plant and Accumulated Depreciation – This adjustment decreases both plant and accumulated depreciation by $126,720 and

$67,617 respectively. It corrects the Company's 4-Factor General Office allocation factor from 3.21 percent to 2.8 percent.

Adj. #11 – Remove Post-Test-Year General Office Plant – This adjustment removes post-test-year plant, reduces General Office plant by $15,434, and increases accumulated depreciation by $1,404.

Adj. #12 – Intentionally Left Blank

Adj. #13 – Advances in Aid of Construction ("AIAC") – This adjustment reduces AIAC and RCN GUPIS by $58,999 because any adjustment to GUPIS will cause a change to the AIAC RCN Factor. This will be discussed later in my testimony.

Adj. #14 – Contributions in Aid of Construction ("CIAC") – This adjustment increases CIAC and RCN GUPIS by $2,363. The Company used an amortization rate that was different than authorized in Commission Decision No. 68176.

Adj. #15 – Additional Central Arizona Project ("CAP") Allocation – This adjustment removes the additional CAP allocation as not being used and useful and reduces RCN rate base by $1,280,000.

Adj. #16 – Working Capital – This adjustment reduces working capital in the amount of $111,606 by including a cash working capital calculation that the Company failed to provide in its rate application.

Operating Income Adjustments:

Adj. #1 – Depreciation & Amortization Expense – This adjustment determines the level of depreciation and amortization expense that should be allowed on a going forward basis. Chaparral requires an adjustment that reduced the level of depreciation and amortization expense by $91,690.

Adj. #2 – Property Tax Expense – This adjustment reduces property tax expense by adjusting two factors: 1) the three years of revenue used in the Arizona Department of Revenue ("ADOR") tax valuation formula and 2) the net book value of the vehicles. The adjustment reduced property tax expense by $39,883.

Adj. #3 – Miscellaneous Expense – This adjustment decreases expenses by $123,366 to reflect an average three-year normalized amount for the account.

Adj. #4 – Rate Case Expense – This adjustment reduces the Company's level of rate case expense requested by $51,538. The adjustment removes unamortized rate case expense related to the Company's previous rate case. RUCO witness, Mr. Rigsby, will address the issue of additional rate case expense requested by the Company associated with the prior rate case appeal.

Adj. #5 – Purchased Water – This adjustment reduces purchased water expense by $30,001. The adjustment is driven by RUCO's disallowance of the additional CAP allocation and the actual gallons in the revenue annualization calculation.

Adj. #6 – Outside Services Expense – This adjustment decreases outside services expense by $71,000 because of a non-recurring expense on a going forward basis.

Adj. #7 – Water Revenues – This adjustment increases water revenues by $61,949 due to actual gallons being used rather than estimates in the Company's revenue annualization.

Adj. #8 – Remove Expensed Plant Items and Capitalize – This adjustment decreases Repairs & Maintenance Expenses by $43,217. The Company expensed some plant items that are more appropriately capitalized in plant Account 339 – Other Plant and Equipment - because they have an estimated useful life of 12 – 15 years.

Adj. #9 – Intentionally Left Blank

Adj. #10 – Purchased Power Expense – This adjustment increases purchased power expense by $12,149 to pump additional gallons of water derived from the revenue annualization calculation.

Adj. #11 – Amortization of Additional CAP Allocation – This adjustment decreases amortization expense by $64,000 as a result of RUCO's disallowance of an additional Company proposed CAP allocation, which fails to meet the used and useful standard.

Adj. #12 – Income Tax Expense – This adjustment increases income tax expense by $260,215 to reflect RUCO's taxable income.

Rate Design:

Q. Please describe the Company's present and proposed rate design for Chaparral City Water.

A. The Company is proposing the same rate design approved by the Commission in the prior rate case (Decision No. 68176) with one exception. For the irrigation and construction classes, the Company has proposed that the commodity charge be the same as other similar classes (i.e. standpipe and fire sprinkler). Other than that one exception, the rate design appears to be the same.

Q. What was the Company's rationale to set the irrigation and construction classes' commodity charge to the same level with the standpipe and fire sprinkler customer class?

A. Company witness, Mr. Thomas Bourassa, pointed out that the irrigation and construction customer class had the lowest commodity charge regardless of how much was consumed. He stated that the irrigation and construction classes'

commodity rate charge was "lower than the first tier of the 3/4 inch metered residential customers."

Q. Does RUCO agree with Mr. Bourassa's description of his rate design and decision to raise the commodity charge of the irrigation and construction class customers to similar customer classes' commodity charge.

A. Yes. We will propose the same rate design using RUCO's recommended amount of increase in rates later in this testimony.

ORIGINAL COST RATE BASE ("OCRB"):

OCRB Adjustment #1 – Intentionally Left Blank

OCRB Adjustment #2 – Intentionally Left Blank

OCRB Adjustment #3 – Remove Wells 8 & 9 – Not in Service

Q. Please explain RUCO's OCRB adjustment to remove Wells 8 & 9.

A. RUCO removed Wells 8 & 9 based on the Company's response to Staff data request MEM 7.3, which stated that Wells 8 & 9 are both capped and are out of service. The Company agreed to remove the wells from plant-in-service, stating that the "impact on rate base will be zero."

Q. Does RUCO agree with the Company that the impact on rate base will be zero if Wells 8 & 9 were to be removed from OCRB?

A. RUCO fully agrees with the Company that the impact on OCRB would be zero if those two wells were to be removed from rate base. If the two wells were removed from rate base corresponding adjustments would also be made to accumulated depreciation, which has a zero effect on rate base.

Q. Why is the adjustment to remove Wells 8 & 9 necessary if the impact to rate base is zero?

A. There are several important reasons to remove the two wells from rate base. First, these wells have not been in service for several years. Second, the Company might continue to record depreciation expense on the wells if they were not removed from rate base. Finally, it is simply not good accounting to allow the wells to remain on the Company's books and records.

Q. What adjustment does RUCO recommend to remove the inactive wells from rate base so that the Company does not collect depreciation expense from ratepayers?

A. RUCO recommends decreasing wells and accumulated depreciation by $103,468 resulting in a decrease to GUPIS as shown on TJC-7. This adjustment would also be reflected on the depreciation expense Schedule TJC-32.

OCRB Adjustment #4 – Intentionally Left Blank

OCRB Adjustment #5 – Remove Shea Water Treatment Plant 1

Q. Please explain RUCO's reason to remove the Shea Water Treatment Plant 1 from plant in service.

A. In response to Staff data request MSJ 17-3, the Company stated "Shea WTP #1 was taken out of service in 2003." For all the same reasons I stated in RUCO OCRB Adjustment #3, this plant should also be removed from rate base as not being used and useful during the last five years.

Q. What recommendation is RUCO making for the Shea Treatment Plant 1?

A. RUCO recommends decreasing the Water Treatment Equipment account and accumulated depreciation by $2,010,923 resulting in a decrease to GUPIS as shown on Schedule TJC-8. This adjustment is also reflected in the depreciation expense Schedule TJC-32.

OCRB Adjustment #6 – Capitalize Expensed Plant Items

Q. Would you please explain RUCO's adjustment to capitalize plant items that were originally expensed?

A. Yes. When I reviewed the Company's response to Staff data requests MEM 15.5 and MEM 16.2, the plant items, air release vault boxes, have an estimated useful life of 12 – 15 years as stated by the Company. The Company expensed these items. RUCO believes these items are more appropriately capitalized rather than expensed.

Q. What adjustment is necessary to more appropriately capitalize these plant items?

A. The adjustment to capitalize the expensed plant items is two-fold. First, it is necessary to reduce Repairs & Maintenance expense by $43,217, which is shown on Schedule TJC-31 – Adjustment #8. Next, an additional $43,217 should be added to plant account 339 – Other Plant and Equipment, which is reflected on Schedule TJC-32. This results in a decrease to expenses and an increase to plant in service as shown on Schedule TJC-9.

OCRB Adjustment #7 – Intentionally Left Blank

OCRB Adjustment #8 – Intentionally Left Blank

OCRB Adjustment #9 – Direct Plant Accumulated Depreciation

Q. Please explain RUCO's adjustment to Direct Plant accumulated depreciation.

A. I recomputed the direct plant and accumulated depreciation from the Commission authorized level of the Company's last rate case on Schedule TJC-6, pages 1-3. All plant additions and retirements since the test-year in that case were added to and deducted from the Commission authorized level of plant and accumulated depreciation. My recompilation of plant determined that RUCO and the Company are in agreement on the test-year end plant balances. However, my Schedule TJC-6, page 3 shows that the Company calculated $76 more of accumulated depreciation than RUCO's Schedule TJC-6.

Q. Have you been able to determine the cause in the two different test-year end accumulated depreciation balances for RUCO and the Company?

A. I can reconcile the two different balances of RUCO and the Company to within $54. The Company agreed in response to RUCO data request 1.19 that it did not book Staff Adjustment #5 from the last rate case decision. The Company stated in the same data response that it would correct that in its rebuttal filing.

Q. Would RUCO accept the Company's rebuttal adjustment as suitable?

A. Yes.

OCRB Adjustment #10 – Correct General Office 4-Factor Plant & Accumulated Depreciation Allocator

Q. Please explain RUCO's adjustment to correct the general office 4-Factor Allocator.

A. The Company had used 3.21 percent as an allocation factor to allocate the general office to Chaparral. As the case proceeded, some confusion arose as to the proper allocation factor to use between all parties involved. Company witness, Mr. Bourassa, told me via telephone conversation that at the present time 2.8 percent was the correct allocation for general office plant.

Q. What recommendation is RUCO making?

A. General office plant in service should be decreased by $95,944 and accumulated depreciation should be decreased by $51,498 based on the 2.8 percent

allocation factor mentioned above as shown on Schedule TJC-10, pages 1 and 2.

OCRB Adjustment #11 – Remove Post-Test-Year General Office Plant

Q. Please explain RUCO's adjustment that removes post-test-year general office plant.

A. The Company included two items of post-test-year plant in the general office in Accounts 303 and 340. I removed those two post-test-year general office plant items.

Q. What recommendation is RUCO making?

A. RUCO recommends reducing general office plant in service by $15,434 as shown on Schedule TJC-11.

OCRB Adjustment #12 – Intentionally Left Blank

OCRB Adjustment #13 – Intentionally Left Blank

OCRB Adjustment #14 – Contributions in Aid of Construction ("CIAC")

Q. Would you please explain RUCO's adjustment to CIAC?

A. Yes. Commission Decision No. 68176 authorized a CIAC amortization rate of 3.3588 percent. The Company utilized a composite rate of all the Company's

accounts. I do not believe that is the correct method to determine an amortization rate.

Q. Why do you believe that a total Company composite rate is improper?

A. CIAC consists primarily of mains, services, and meters with 2-3 percent depreciation rates - not higher depreciable plant like transportation equipment at a 20 percent rate and communication equipment at a 10 percent rate. I believe the Commission establishes the CIAC amortization rate in rate case decisions, and that rate will remain constant going forward until the next rate case decision. If the Commission disagrees with that understanding, a more proper way to derive a composite amortization rate for CIAC would be to use only the accounts in which CIAC resides rather than a composite rate for all plant accounts.

Q. Did you do an analysis using just the accounts that CIAC exists in?

A. Yes.

Q. What composite rate did you derive when using only accounts in which CIAC exists?

A. I derived at a 2.96 percent composite CIAC amortization rate.

Q. If the Commission decides it does set CIAC amortization rates in rate decisions, what adjustment is RUCO recommending?

A. RUCO recommends increasing CIAC by $1,523 as shown on Schedule TJC-12.

OCRB Adjustment #15 – Remove the Deferred Asset - Additional CAP Allocation

Q. Please explain RUCO's adjustment to remove the Company proposed deferred regulatory asset from rate base that is related to the additional CAP allocation.

A. RUCO removed the Company proposed deferred regulatory asset related to the additional purchase of CAP water as not currently used and useful.

Q. How did RUCO come to the conclusion that the additional purchase of CAP water that the Company booked as a regulatory asset is not used and useful?

A. The Company's Schedule H-2, page 3.1, shows that 2,084,339 (in thousands) gallons of water was sold in the test-year. Company witness, Mr. Bourassa, made a pro forma adjustment to test-year revenues to account for a significant reduction in water use by three of four golf courses that the Company serves. That adjustment reduced gallons sold on a going forward basis by 257,090 (in thousands). The table below shows the gallons sold and the Company's pro forma adjustment based in acre feet:

	Acre Feet
Gallons Sold in 2006 = 2,084,339	6,397
Company Adjustment (Gallons in 1,000's = 257,090)	(789)

Total Acre Feet of Water Sold Adjusted	5,608

RUCO agrees with the Company's gallons and acre-feet sold calculation but does not agree with the pro forma adjustment. The Company's pro forma

adjustment is based on post-test-year 2007 when Chaparral experienced significant reduction in water being purchased by the golf courses. The Company's adjustment was based on five months (August – December) of estimated water use by the golf courses rather than actual use because the Company did not have the actual data when it filed its rate application. RUCO obtained the actual water sold via data request. The actual gallons and acre-feet sold proved to be more than the Company's estimates as shown in the table below:

	Acre Feet
Gallons Sold in 2006 = 2,084,339 (Gallons in 1,000's)	6,397
Company Adj. to Actuals (Gallons in 1,000's = 192,426)	(591)

Total Acre Feet of Water Sold Adjusted to Actuals	5,806

The Company's original CAP allocation is for 6,978 acre-feet. The additional purchase of CAP allocation is not needed to serve the current level of test-year customers.

Q. Isn't the Company allowed a 10 percent variance from what is sold and pumped but in this case delivered?

A. Yes. If 10 percent is added to the amount sold, the Company still has excess CAP capacity of 591 acre-feet, which is 193 million gallons of water. The Company also owns two operating wells from which it can pump water too. The

additional CAP allocation of 1,931 acre-feet is not currently needed to serve its customers.

Q. What recommendation is RUCO making for the additional CAP allocation?

A. RUCO recommends that the Company's OCRB be reduced by $1,280,000 by removing the deferred regulatory asset as not used and useful to serve Chaparral's water customers as shown on Schedule TJC-28.

OCRB Adjustment #16 – Working Capital

Q. Please explain the concept of working capital?

A. A company's working capital requirement represents the amount of cash the company must have on hand to cover any differences in the time period between when revenues are received and expenses must be paid. The most accurate way to measure the working capital requirement is via a lead/lag study. The lead/lag study measures the actual lead and lag days attributable to the individual revenues and expenses.

Q. Did the Company request working capital?

A. Yes and no.

Q. Please explain yourself?

A. The Company stated we are "not requesting a working capital allowance in this case ... In order to simplify this filing and to reduce issues that might be in

dispute."[1] On the other hand, the Company requests recovery for materials & supplies and prepayments which are two of the three components of working capital but did not provide a lead/lag study to determine the third component, cash working capital, of working capital.

Q. Is a lead/lag study analysis overly burdensome for a Company to perform in determining cash working capital requirements?

A. No. I have known when the Commission has ordered Class A utilities to file a lead/lag study in its next rate application if it had failed to do so in its current case. In most cases, a lead/lag study will cause a negative effect on the company's working capital allowance. That is my opinion on why Class A companies avoid performing a lead/lag analysis. Arizona American Water Company has failed to perform numerous lead/lag studies but has done so in its most recent rate application filed with the Commission.

Q. Did RUCO perform a lead/lag study to determine the third component, cash working capital, for a working capital allowance?

A. Yes.

[1] Docket No. W-02113A-07-0551, Direct Testimony – Thomas J. Bourassa, pages 6-7, lines 26-3.

Q. Briefly explain how you developed the lead/lag study to determine cash working capital.

A. I requested customer bills to determine the revenue lead/lag days. Samples of invoices were obtained for all the expense accounts related to the lead/lag study. RUCO's recommended expense levels were used to determine the dollar days.

Q. What recommendation is RUCO making for a working capital allowance?

A. RUCO makes either one of two recommendations to the working capital allowance adjustment. First, RUCO recommends an adjustment to account for cash working capital, attributable to RUCO's performance of a lead/lag study that reduces rate base by $111,606 as shown on Schedule TJC-29, pages 1 thru 15. Should the Commission reject RUCO's first recommendation, RUCO's second recommendation would be to disallow the Company the opportunity to recover materials & supplies and prepayments for which it seeks recovery, since those two items are components of a working capital allowance adjustment.

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RECONSTRUCTION COST NEW LESS DEPRECIATION RATE BASE ("RCND" or "RCN"):

RCND Adjustment #1 – RCN Factor Rounding

Q. Would you please explain RUCO's RCN Factor rounding adjustment?

A. Yes. The Company's Schedule B-4, pages 1-7, truncates the RCN Factor. To correct this problem, I inserted a mathematical formula into the RCN Factor cells to carry out the proper multiplication.

Q. What recommendation is RUCO making to eliminate the Company's truncating?

A. RUCO recommends reducing the RCN plant in service by $118 and increasing accumulated depreciation by $1 as shown on Schedule TJC-16.

RCND Adjustment #2 – Correct Account 304 Index Factors

Q. Please explain RUCO's adjustment to correct Account 304 Index Factors.

A. The Company used a Handy Whitman Index Factor of 276 rather than the correct factor of 376 on three plant line items with the vintage year of 2004.

Q. What recommendation is RUCO making to correct the RCN Index Factor for those three plant items?

A. RUCO recommends reducing plant in service by $17,807 and reducing accumulated depreciation by $4,411 as shown on Schedule TJC-17.

RCND Adjustment #3 – Remove Wells 8 & 9 – Not in Service

Q. Please explain RUCO's adjustment to remove wells 8 and 9 from plant in service.

A. RUCO's explanation is provided in OCRB adjustment #3. Many of the RCN rate base adjustments were explained in the OCRB adjustment section of my testimony. When that is the case, the only difference between the OCRB and RCN rate base adjustments is that the RCN adjustment is trended up to "new" cost.

Q. What recommendation is RUCO making to trend the removal of wells 8 and 9 to new cost?

A. RUCO recommends reducing RCN plant in service by $435,284 and reducing accumulated depreciation by the same amount of $435,284 as shown on Schedule TJC-18.

RCND Adjustment #4 – Remove Double Count of RCN Plant Transfers from ACC Decision 68176

Q. Please explain RUCO's adjustment to remove the double count of plant transfers from RCN rate base that was approved in Decision No. 68176.

A. This adjustment was not necessary in the OCRB adjustment section of my testimony. On the Company's Schedule B-4, page 7, Chaparral shows a grand total for OCRB of $51,053,252. That total includes a double count of Staff adjustment JRM-2 from the last rate case - Decision No. 68176 – for OCRB in the amount of $32,536 that was approved by the Commission.

Q. Can RUCO illustrate why it believes that the $32,536 Staff adjustment in the last rate case is a double count?

A. Yes. I will illustrate in the table below why it is a double count for RCN rate base and explain why an adjustment for OCRB was not necessary.

Company Schedule B-4, page 7, Grand Total	$51,053,252
Company Schedule B-2, page 1, GUPIS	51,020,714

	$ 32,538[2]

RUCO and the Company are in agreement with test-year end OCRB being the amount of $51,020,714. The Company used that amount in its Schedule B-2. My recomputation of GUPIS shown on Schedule TJC-6, page 3 of 3, also resulted in the same amount. When the Company trends the plant up to a RCN amount, Chaparral uses $51,053,252 plant in service rather than the correct amount of $51,020,714 as shown on the Company's Schedule B-2.

Q. What recommendation is RUCO making to remove the double count for the trended RCN plant?

A. RUCO recommends reducing RCN plant in service by $36,773, which accounts for the RCN trending, and increase accumulated depreciation by $13,320 as shown on Schedule TJC-19.

[2] The two-dollar difference between $32,536 and $32,538 is due to rounding.

Q. Isn't it unconventional to remove plant and have accumulated depreciation increase?

A. Yes.

Q. Can you explain what phenomenon is occurring to cause that in this adjustment?

A. Yes. I have included Exhibit RUCO 1 that shows the account in which the adjustment was made to assist me in my explanation. The irregularity is predominately a product of how the Company set up its RCN schedules. In essence, the RCN accumulated depreciation factor is derived by dividing the RCN plant account total by the OCRB plant account total, which equals the RCN accumulated depreciation factor that determines the RCN accumulated depreciation by account. The numerator, RCN plant balance, increases at a faster rate than the denominator, the OCRB plant balance. Thus, the RCN accumulated depreciation factor increases. The original cost accumulated depreciation account balance is multiplied by that factor in deriving at the RCN accumulated depreciation account balance. As can be seen in the exhibit, after making the adjustment, the ratio of RCN plant to original cost plant increased causing the RCN accumulated depreciation to also increase.

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RCND Adjustment #5 – Remove Shea Water Treatment Plant 1

Q. Please explain RUCO's adjustment to remove Shea Water Treatment Plant 1 from plant in service.

A. RUCO's explanation is provided in OCRB adjustment #5. This is another adjustment common to both OCRB and RCN rate base adjustments. The only difference between the OCRB and RCN rate base adjustments is that the RCN adjustment is trended up to "new" cost.

Q. What recommendation is RUCO making to remove the Shea Water Treatment Plant from plant in service?

A. RUCO recommends reducing plant in service by $3,262,891 and reducing accumulated depreciation by the same amount as shown on Schedule TJC-20.

RCND Adjustment #6 – Capitalize Expensed Plant Items

Q. Would you please explain RUCO's adjustment to capitalize plant items that were originally expensed?

A. RUCO's explanation is provided in OCRB adjustment #6. This is another adjustment common to both OCRB and RCN rate base adjustments. Since this is a test-year adjustment, there is no trending to RCN value.

Q. What recommendation is RUCO making in order to capitalize plant that was previously expensed by the Company?

A. RUCO recommends reducing Repairs & Maintenance expense by $43,217 and increasing plant account 339 – Other Plant and Equipment – an additional $43,217, which is reflected on Schedule TJC-32. This results in a decrease to expenses and an increase to plant in service as shown on Schedule TJC-21.

RCND Adjustment #7 – Direct Plant Rounding Reconciliation

Q. Would you please explain RUCO's adjustment of reconciling the direct plant?

A. This adjustment reconciles RUCO's recommended level of RCN direct plant from the Company's RCN direct plant balance. It starts with the Company's requested RCN direct plant balance of $79,791,440 and subtracts RUCO's RCN direct plant adjustments 1 thru 6. That leaves a balance of RCN direct plant of $76,081,783. RUCO's recommended level of RCN direct plant is $76,081,819. A reconciliation adjustment is necessary to reconcile the two amounts.

Q. What recommendation is RUCO making to reconcile the two amounts of RCN direct plant?

A. An adjustment is necessary to increase RCN direct plant by $35 to reconcile to RUCO's RCN direct plant recommended balance of $76,081,819. This is shown on RUCO's Schedule TJC-22.

RCND Adjustment #8 – RCN Trended Direct Plant Accumulated Depreciation

Q. Would you please explain RUCO's adjustment to the RCN trended direct plant accumulated depreciation?

A. Yes. I started with the Company's RCN trended direct plant accumulated depreciation balance of $25,365,293 and netted my direct plant adjustments numbers one thru five from that figure, which derived an accumulated depreciation amount of $21,676,028. My RCN direct plant work paper schedule recomputed the accumulated depreciation balance to be $21,305,201. The adjustment to decrease the accumulated depreciation balance by $370,826 is shown on Schedule TJC-23 and below:

Company Filed Direct Plant Accumulated Depreciation	$25,365,293
Less: RUCO Adjustment #'s 1 thru 5	3,689,265
RUCO RCND Adjustment #8	370,826
Reconciles to RUCO's Accumulated Depreciation Balance	$21,305,201

RCND Adjustment #9 – Intentionally Left Blank

RCND Adjustment #10 - Correct General Office 4-Factor Plant & Accumulated Depreciation Allocator

Q. Please explain RUCO's adjustment to correct the general office 4-Factor Allocator.

A. This adjustment was explained earlier in the OCRB adjustment #10.

Q. What recommendation is RUCO making to correct the general office 4-Factor Allocator?

A. RUCO recommends reducing the RCN general office plant by $126,720 and decreasing the accumulated depreciation by $67,617 to correct the allocation amount as shown on Schedule TJC-24, pages 1 and 2.

RCND Adjustment #11 - Remove Post-Test-Year General Office Plant

Q. Please explain RUCO's adjustment that removes post-test-year general office plant.

A. This adjustment was explained earlier in OCRB adjustment #11, but the Company included two items of post-test-year plant in the general office in Accounts 303 and 340. I removed those two post-test-year general office plant items. This adjustment is simply trended up for reconstruction cost new.

Q. What recommendation is RUCO making to remove the post-test-year general office plant?

A. RUCO recommends reducing general office plant in service by $15,434 and increasing accumulated depreciation by $1,404. Schedule TJC-25 shows RUCO's calculation for this adjustment.

RCND Adjustment #12 – Intentionally Left Blank

RCND Adjustment #13 – Advances in Aid of Construction ("AIAC") Adjustment

Q. Please explain RUCO's adjustment to AIAC?

A. Any adjustment to plant in service will cause the AIAC factor to change because the AIAC factor is the ratio of the RCN plant in service to the original cost plant in service. All of RUCO's adjustments to either RCN or OCRB plant in service caused a minor modification to the AIAC factor. Thus, RUCO's AIAC factor is slightly larger than the Company's factor.

Q. What recommendation is RUCO making to AIAC to account for the slight change to the AIAC RCN factor?

A. RUCO recommends decreasing the RCN AIAC by $58,999 to account for the change to the AIAC factor. This adjustment is shown on RUCO's Schedule TJC-26.

RCND Adjustment #14 - Contributions in Aid of Construction ("CIAC")

Q. Please explain RUCO's adjustment to RCN CIAC.

A. This adjustment was explained in the OCRB section in adjustment #14. The reason is the same in this adjustment. The only difference between the two adjustments is this adjustment trends the OCRB adjustment amount up to a RCN value.

Q. What adjustment is RUCO recommending in this case?

A. RUCO recommends increasing the RCN CIAC in the amount of $2,363. This adjustment is shown on Schedule TJC-27.

RCND Adjustment #15 - Remove the Deferred Asset - Additional CAP Allocation

Q. Please explain RUCO's RCND adjustment #15 that removes the deferred asset related to the Company's additional purchase of a CAP water allocation.

A. This adjustment was explained in detail in the OCRB section of my testimony in OCRB adjustment #15 as not being used and useful. It is the same identical adjustment for RCND as was in OCRB adjustment.

Q. What adjustment is necessary to remove the deferred regulatory asset from RCN rate base as not being used and useful?

A. It is necessary to reduce $1,280,000 from the RCN rate base to remove the non used and useful deferred regulatory asset related to the additional purchase of CAP water allocation as shown on Schedule TJC-28.

RCND Adjustment #16 – Working Capital

Q. Would you please explain RUCO's RCND rate base adjustment #16 to working capital?

A. Again, this adjustment was explained in the OCRB section of my testimony and is the identical adjustment here in the RCN section of my testimony.

Q. What adjustment was necessary to account for a cash working capital calculation?

A. The cash working capital lead/lag study calculation reduced the working capital by $111,606 as shown on Schedule TJC-29, pages 1 thru 15.

OPERATING INCOME & EXPENSES:

Operating Adjustment #1 – Depreciation & Amortization Expense

Q. Please explain your adjustment to the depreciation expense.

A. My adjustment to depreciation and amortization expense reflects the Commission's approved depreciation rates applied to RUCO's recommended plant balances due to various RUCO OCRB adjustments and one operating expense adjustment shown on Schedule TJC-4, pages 1 and 2, and TJC-31. Those adjustments are reflected and shown on the depreciation and amortization Schedule TJC-32. I also used the CIAC amortization rate authorized in the last Commission Decision No. 68176.

Q. What adjustment did RUCO make to depreciation and amortization expense?

A. RUCO's adjustment reduced Company's test year depreciation and amortization expense by $91,690 for Chaparral Water as shown on Schedule TJC-32.

Operating Adjustment #2 – Property Tax Expense

Q. What recommendation does RUCO make to property tax expense?

A. RUCO recommends either of two recommendations. One, either decrease the Company's requested property tax expense by $39,883 or two, utilize the last known and measurable year[3] of property tax expense in the amount of $187,214 with an adjustment for RUCO's proposed level of revenue.

Q. Please explain RUCO's first recommendation and the methodology that RUCO used in determining the property tax expense in this case.

A. Previously, RUCO's property tax methodology utilized the Arizona Department of Revenue ("ADOR") methodology. Since 2001, there have been several debates in water and sewer utility rate cases before the Commission. RUCO has persistently maintained that using two historical gross years of revenue and the test-year gross revenue, as the formula states in ADOR's memo of January 3, 2001, is the correct methodology. However, the Commission has regularly rejected RUCO's arguments on this issue, and pursuant to this, RUCO is offering a compromise alternative methodology in this case.

Q. How does the Company's methodology vary from the ADOR formula?

A. The Company has disregarded the use of any historical years of gross revenue. Chaparral utilized two years of adjusted revenues plus one year of proposed revenues, which will undoubtedly cause an over-collection of property taxes into

[3] This 2008 property tax expense amount was obtained from ADOR because the Company objected to providing the information in two of RUCO's data requests.

the future. The property tax formula, as prescribed in ADOR's memo of January 3, 2001, determines the Full Cash Value ("FCV") of water utilities, for property tax purposes, by multiplying the average of the three previous years of reported gross revenues of the Company by a factor of two (2) and more accurately estimates projected property tax expense.

Using the Company's property tax calculation, it would over-collect the property tax expense for quite a few years before the actual assessment would catch up to the Company's 2006 proposed revenue. In the meantime, the Company will be over-recovering its property tax expense.

Q. Does RUCO have any empirical evidence in this case that supports its assertion that ADOR's prescribed property tax formula, which requires historical years of gross revenues, more accurately estimates future property tax expense.

A. Yes.

Q. Please provide RUCO's empirical evidence that supports its assertion.

A. In Commission Docket W-02113A-04-0616 in 2005, RUCO's revenue requirement witness, Mr. Rodney Moore, filed direct testimony and schedules in that case. Mr. Moore recommended in that case a level of property tax expense in the amount of $280,835, as supported here in RUCO Exhibit 2, page 1 of 3. The Company's current rate application Schedule E-2, also provided in RUCO

Exhibit 2, page 3, and ADOR property tax information plainly shows the Company's actual property tax expense for years 2004 thru 2008 as follows:

	2004	2005	2006	2007	2008
Property Tax Expense	$ 280,537	$ 279,529	$ 241,774	$ 207,162	$ 187,214

The Company has over-collected on its property tax expense by more than $300,000 since 2004. That is clear evidence that Mr. Moore's property tax calculation of $280,835 utilizing ADOR's prescribed methodology is more accurate when compared to actual property tax paid by the Company in those years.

Q. What amount of property tax expense was Chaparral allowed in that docket?

A. Decision No. 68176 made an allowance in the amount of $299,495 or approximately $19,000 more than Mr. Moore's ADOR calculation recommendation. The Company has never paid more property tax expense in any year listed above than what Mr. Moore recommended. This is clear evidence to which method is more accurate in estimating the property tax expense for a water/wastewater company.

Q. What is the alternative methodology that RUCO is offering in this case?

A. Rather than the three-years of historical revenues for inputs that RUCO has consistently recommended, RUCO's alternative methodology uses two years of

historical revenues and one year of RUCO proposed level of revenue. The supporting detail of RUCO's alternative property tax expense methodology is shown on Schedule TJC-33.

Q. Does RUCO recommend any more adjustments to the Company's property tax expense calculation?

A. Yes. When the Company determined the net book value ("NBV") of its vehicles to remove from full cash value, it took the total gross plant value of vehicles in the amount of $535,315. RUCO agrees with that portion of the calculation for net book value for vehicles. The Company then subtracts the 2006 depreciation expense rather than the accumulated depreciation balance for vehicles found on the next page, Company Schedule B-2, page 3d, of the Company's direct plant schedules as shown below:

Company's Method of NBV for Vehicles		RUCO's Method of NBV for Vehicles	
Total Gross Value	$ 535,315	Total Gross Value	$ 535,315
Less: Depreciation Expense	107,006	Less: Accum. Depre.	60,636
NBV of Vehicles	$ 428,309		$ 474,679

The proper amount of NBV of vehicles is $474,679 rather than the Company's calculation of $428,309.

Q. Isn't it a peculiar outcome that depreciation expense of $107,006, shown above, is more than the accumulated depreciation account of $60,636 also shown above?

A. Yes. The reason for that peculiarity is because the prior rate case Decision No. 68176 authorized a negative accumulated depreciation balance for a starting point for December 31, 2003. The combined retirements for years 2004 and 2005 were more than the combined depreciation expense for the same period making the accumulated depreciation more negative until year 2006. That is sometimes the result of accumulated depreciation when class depreciation is used. It eventually turns around to a normal account balance.

Q. What adjustment does RUCO recommend to account for the proper NBV for vehicles in the property tax formula?

A. RUCO does not recommend a separate adjustment to account for the proper NBV for vehicles in the property tax formula. However, it does reduce the expense by $831, which is part of RUCO's overall property tax expense adjustment.

Q. Please explain RUCO's second alternative property tax expense recommendation.

A. As an alternative recommendation, RUCO recommends utilizing the last known and measurable year of property tax expense, 2008, in the amount of $187,214 with an additional adjustment to account for RUCO's proposed level of revenue.

Q. What adjustment is necessary to account for RUCO's proposed level of revenue?

A. It is necessary to increase the last known and measurable year of property tax expense by $9,743 to account for RUCO's proposed level of revenue. This adjustment allows the Company its last known and measurable year of property tax expense of $187,214 plus the $9,743 to account for RUCO's proposed level of revenue for a total property tax expense allowance of $196,957. This requires an adjustment to decrease the Company's requested level of property tax expense in the amount of $98,856 as shown on Schedule TJC-33(a).

Operating Adjustment #3 – Normalization of Miscellaneous Expense

Q. Please explain RUCO's adjustment to normalize miscellaneous expense.

A. RUCO's adjustment reduces miscellaneous expense by $123,366 from $1,259,948 to $1,136,582 as shown on Schedule TJC-34. RUCO believes it is appropriate to take a three-year average of miscellaneous expense. An analysis that was performed determined that this expense has increased by 57 percent since 2003. A three-year average would smooth any circumstances that have caused this significant increase in miscellaneous expense. A similar adjustment was approved in Decision No. 68176.

Operating Adjustment #4 – Rate Case Expense

Q. Please explain RUCO's adjustment to rate case expense.

A. The adjustment removes the remaining unamortized rate case expense from the prior rate case decision. RUCO has long held the position that rates are set on a

particular level of allowed expenses. The unamortized rate case expense from the last case should have no bearing whatsoever on the new rates established in this proceeding.

Staff addressed this same issue regarding prior decision's unamortized rate case expense in the Sun City Water District Docket No. W-01303A-07-0209. Staff witness, Mr. Alexander Igwe, in his Executive Summary Testimony stated the following:

> However, Staff would note its objection to the Company's suggestion that it could seek recovery of unamortized rate case expense should it fill [sic] for a rate increase prior to 2012. The Company's contention is inconsistent with sound rate making principles.

Q. What adjustment does RUCO recommend to remove the amortized rate case expense from the prior rate case that is inconsistent with sound rate making principles?

A. RUCO recommends reducing the Company's requested level of rate case expense by $51,538, which is related to the prior rate case as shown in Schedule TJC-35. The unamortized portion of the Company's last rate case should have no impact on the new rates established in this proceeding.

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Q. Are you going to address the Company's request for additional rate case expense associated with the Company's appeal of Decision No. 68176?

A. No. RUCO witness William A. Rigsby will sponsor that testimony regarding Chaparral's request to recover legal expenses associated with the Company's appeal of Decision No. 68176.

Operating Adjustment #5 – Purchased Water

Q. Please explain RUCO's adjustment to purchased water expense?

A. This adjustment has two elements that make up RUCO's total adjustment. The Company purchases CAP water on an annual basis. RUCO's adjustment removes the capital cost charge related to the additional CAP allocation purchase that was disallowed for failing to meet the used and useful standard as discussed earlier in the OCRB and RCND section of my testimony. The second part of the adjustment is a result of the Company's estimated revenue annualization test-year adjustment.

The Company's test-year adjusted revenue annualization adjustment was based on post-test-year 2007-estimated loss of water sales from three golf courses.[4] Those customers switched to a lower-cost treated effluent source of water from the Fountain Hills Sanitary District ("FHSD"). Chaparral still serves these golf courses potable water but sales did decrease significantly by approximately 200 million gallons. When the Company filed its application in late 2007, the actual

[4] The golf courses were 4 and 6-inch Irrigation classification customers.

amount of lost water sales was unknown. August through December were estimates for those months. After RUCO obtained the actual water sales for those months, it was determined that the Company had under-estimated its water sales by 114 acre-feet. The adjustment was made to account for the actual water sales.

Q. What adjustment does RUCO recommend to account for the actual lost water sales?

A. RUCO recommends reducing purchased water expense by $30,001. This adjustment is primarily driven by the disallowance of the additional 1,931 acre-feet of CAP water capital cost because the second component of the adjustment increases the expense by $10,550 resulting from the Company's under estimation of actual water sales in its revenue annualization adjustment explained earlier.

Operating Adjustment #6 – Outside Services

Q. Please explain RUCO's adjustment to outside services expense.

A. RUCO's audit of outside service invoices determined that the Company eliminated an outside service person that provided water supply superintendent services for the Company on May 22 of the test year. The Company replaced these services with an employee. The charges in the test year for the outside service person are a nonrecurring expense on a going forward basis. All associated charges for those outside services should be removed from adjusted

test-year outside services account. This information is provided in Company work paper titled "CCWC Employees – 06." The charge for the services was $3,500 per week.

Q. What adjustment does RUCO recommend to remove the outside services that are nonrecurring on a going forward basis?

A. RUCO recommends reducing the outside service expense account by $71,000 to remove the nonrecurring expense as shown on Schedule TJC-37.

Operating Adjustment #7 – Water Revenues

Q. Would you please explain RUCO's adjustment to water revenues?

A. Yes. This adjustment is a result of RUCO using the actual gallons sold as opposed to the Company's use of estimated gallons sold in its revenue annualization adjustment. The three golf courses mentioned in RUCO's operating adjustment #5 purchased over 35 million more gallons than the Company estimated in its revenue annualization adjustment. This adjustment is necessary to account for the actual additional revenue that the Company under estimated.

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Q. What adjustment is necessary to account for the actual additional revenue from water sales that the Company under estimated in its revenue annualization adjustment?

A. It is necessary to increase the Company's test-year adjusted revenues by $61,949 to account for the actual gallons sold as opposed to the Company's estimated gallons sold. This adjustment is shown in Schedule TJC-38, page 1 of 31.

Operating Adjustment #8 – Repairs and Maintenance

Q. Please explain RUCO's adjustment to the repairs and maintenance expense account.

A. This adjustment was explained in detail in RUCO's OCRB adjustment #6. In brief, the adjustment capitalizes plant items that were previously expensed by the Company. The adjustment removes the expensed plant items from the repairs and maintenance account. The OCRB and RCND adjustment #6 capitalizes the same amount to plant in service account #339 – Other Plant and Equipment.

Q. What recommendation is RUCO making to more appropriately capitalize the plant items that were previously expensed by the Company?

A. RUCO recommends reducing the repairs and maintenance expense account by $43,217 as shown on Schedule TJC-39, and capitalize the same amount to plant account #339, which RUCO's OCRB and RCND adjustment #6 did earlier.

Operating Adjustment #9 – Intentionally Left Blank

Operating Adjustment #10 – Purchased Power

Q. Please explain RUCO's adjustment to purchased power expense.

A. This adjustment results from the Company's estimated revenue annualization adjustment that decreased purchased power expense by $74,714 from loss of water sales to the three golf courses mentioned in RUCO operating adjustment #5. In that adjustment, the Company over estimated its lost water sales. Therefore, the Company's adjustment to account for the reduced pumping cost is also over estimated. This adjustment increases the purchased power expense to account for the cost of actual additional gallons to be pumped.

Q. What adjustment does RUCO recommend to account for the additional gallons of water actually sold?

A. The adjustment increases purchased power expense by $12,149. This accounts for the actual additional 37 million gallons of water to be pumped.

Operating Adjustment #11 – Amortization of the Additional CAP Allocation

Q Would you please explain RUCO's adjustment to the amortization for the additional CAP allocation?

A. Yes. The Company seeks recovery from ratepayers of the additional CAP allocation by amortizing it over 20 years. RUCO recommends disallowing any earnings and recovery on the additional CAP allocation because it does not meet

the used and useful standard as discussed in RUCO's OCRB adjustment #15. Therefore, the amortization expense should also be removed from operating expenses.

Q. What recommendation is RUCO making?

A. RUCO recommends removal of the Company's amortization expense adjustment for the additional CAP allocation and reducing the depreciation and amortization expense by $64,000.

Operating Adjustment #12 – Income Taxes

Q. Please explain RUCO's adjustment to the Company's Income Tax Expense.

A. This adjustment results from RUCO's recommended level of operating income.

OTHER RATE BASE AND OPERATING INCOME ISSUES:

Q. Are there other issues pertaining to rate base and operating income that RUCO would like to address?

A. Yes. RUCO asked a late data request that sought information from the Company pertaining to hookup fees. We would like to reserve the opportunity to review the data responses and address it appropriately in surrebuttal testimony.

Q. Are there any other issues other than that that RUCO would like to respond?

A. Yes. It is my understanding that the Company has decided to include a low-income program for Chaparral that takes current economic conditions into

account. RUCO suggests that the Company file a low-income program proposal in its rebuttal testimony for other intervenors to consider at that time.

RATE DESIGN:

Q. Is RUCO recommending any change to the Company's proposed rate design?

A. Not at this time other than using RUCO's recommended revenue increase to design rates.

Q. What do you mean by stating "not at this time?"

A. I mentioned earlier that RUCO sent a late data request to the Company. I doubt RUCO will receive a response before direct testimony is to be docketed in this case. If a response is received before testimony is to be docketed, RUCO does not believe adequate time would be available to address the issue(s) here in its direct testimony. That is why I would like to reserve the opportunity to review the data responses and address it appropriately in my surrebuttal testimony.

Q. Did the Company propose a change to their rate design that is different than what was approved in the prior decision?

A. It appears that the Company utilized the same rate design the Commission approved in the prior decision with the exception of the irrigation and construction classes.

Q. What changes did the Company make for the irrigation and construction classes' rate design?

A. For the irrigation and construction classes, the commodity rate was set at the same level as the standpipe and fire sprinkler commodity charges. The Company stated, "under present rates, the irrigation and construction class had the lowest commodity charge – in fact, lower than the first tier of the 3/4 inch metered residential customers. There is no good reason for the disparity and I have eliminated it."

Q. Does RUCO agree with the Company's decision to set commodity rates for irrigation and construction classes at the same rate as standpipe and fire sprinkler commodity charges?

A. Yes.

Q. What is the impact of RUCO's recommended rates on an average bill for a residential customer?

A. I will provide the impact of RUCO's recommended rates on an average bill for a 3/4 and 1-inch residential customer. Those two customer classes constitute the majority of Chaparral customers. The present monthly bill for a 3/4-inch residential customer using an average 8,450 gallons is $32.38. RUCO's recommended monthly bill for a 3/4-inch residential customer using an average of 8,450 gallons is $34.99, an increase of $2.61 or 8.06 percent over the present rates.

The present monthly bill for a 1-inch residential customer using an average 10,095 gallons is $48.14. RUCO's recommended monthly bill for a 1-inch residential customer using an average of 10,095 gallons is $51.75, an increase of $3.61 or 7.5 percent over the present rates.

All customer classifications rates are shown on Schedule TJC-45.

Q. Does that conclude your direct testimony?

A. Yes.

APPENDIX 1

Qualifications of Timothy J. Coley

WORK HISTORY

July 2000 – Present: **RESIDENTIAL UTILITY CONSUMER OFFICE,** Phoenix, Arizona
Public Utilities Analyst V. The Residential Utility Consumer Office (RUCO) is a consumer advocate group providing residential consumers a voice in utility regulation and backed by a professional staff with legal and financial expertise. Responsibilities include: audited, reviewed and analyzed public utility companies various filings; prepared written testimony, schedules, financial statements, and spreadsheet models and analyses. Testified and stand cross-examination before the Arizona Corporation Commission.

January 2000 - April 2000: **JACKSON HEWITT TAX SERVICE,** Phoenix, Arizona
Tax Preparer. Interviewed clients, determined tax situation, and explained how the tax laws benefited them in their specific situation. Ensured that each customer received every deduction that they were entitled. Prepared individual and business income tax returns, which best utilized each specific situation that minimized their tax obligations.

May 1998 - November 1999: **BENEFITS CONSULTING,** Cypress, Texas
Consultant Assistant. The consulting firm specialized in alleged medical claim charges brought against the government of Harris County in Houston, Texas. Assisted in the review, examination, and analysis of the attested charges. Determined if the purported medical claim charges were prudent, customary, and reasonable for the alleged sustained injuries. The firm analyzed cases for both the County's Risk Department and Attorneys Office.

January 1992 - April 1998: **PHOENIX SERVICES,** Villa Rica, Georgia
Owner. Provided landscaping services primarily in a high growth gated community where the Property Owners' Association approved mandated ordinances to be strictly adhered and abided by. Coordinated and supervised all aspects of projects from inception to completion, from master planning to site design to installation.

May 1989 - October 1991: **GEORGIA PUBLIC SERVICE COMMISSION,** Atlanta, GA
Senior Auditor. The Public Service Commission (PSC) was responsible for regulating many intrastate telecommunications, electric, and gas utility industries operating in Georgia. It was the PSC's job to ensure that consumers received adequate and reliable service at reasonable rates. It must also assure the utility companies and investors an opportunity to earn a fair rate of return on prudent investments. The Commission participated significantly in Georgia's economic health and growth. I was promoted to the PSC's Electric/Gas Division where I examined, verified, and analyzed various financial documents, accounting records, reports, ledgers, and statements. In addition, I was assigned to automate the PSC's Electric Division where I utilized a computer application process that I had developed earlier while with the (PSC) Telecommunication Division. I was later ascribed to work in conjunction with the Engineering Department and established a procedure to track and compare costs of operation and maintenance (O&M) expenses of nuclear electric generating plants. This effort determined a comparative price per kilowatt-hour produced that influenced the awareness for the company to control the O&M costs, which benefited the consumer through lower prices.

- Developed computer application system that streamlined audit procedures by 30 – 40%.
- Various other schedules were implemented to track, maintain, and control costs.

GEORGIA PUBLIC SERVICE COMMISSION (continued)

November 1986 - April 1989: **Georgia Public Service Commission,** Atlanta, Georgia
Auditor. Regulated telecommunications and also oversaw the deregulation process that was currently under way in that industry. Examined and analyzed accounting records to determine financial status of companies and prepared financial reports concerning audit findings. Reviewed data including payroll, time sheets, purchase vouchers, cash receipt ledgers, financial reports, and disbursements. Verified statewide telephone company transaction classifications and documentation.

- Developed computer application utilizing Lotus to completely automate and streamline the entire telecommunication audit process. The results saved 25% in field audit time and produced a product of professional appearance.
- Created, coordinated, and implemented "Operational Project Training" automated procedure-training program. Trained and supervised staff of five auditors.
- Computerized "Desk Audit Analysis" program that identified 11 independent telephone companies in the state of over-earning and resulted in $4.1M annual savings to the Georgia ratepayers affected.

October 1985 - October 1986: **Georgia Public Service Commission,** Atlanta, Georgia
Junior Auditor. Assisted in planning and performing telecommunication audit engagements. Examined financial records, internal management control, correspondence, bills, and records of services delivered in order to verify or recommend compliance with company specifications contained in contracts, agreements, regulations, and/or laws.

- As a special project, I was assigned to analyze the results of a survey designed to evaluate "Interest in Organizing a Multi-State Nuclear Management Review Group" by the Director of Utilities. Wrote the draft and findings for the speech that was presented to all participatory commissions.

PROFESSIONAL MEMBERSHIPS

- Elected Member of the National Honor Society for Public Affairs and Administration.
- Active Member of Delta Sigma Pi - Professional Business Fraternity.

SPECIAL TRAINING AND CERTIFICATES

- The Graduate School of Business Administration - Michigan State University; completed the Annual Regulatory Studies Program of the National Association of Regulatory Utility Commissioners.
- Completed Graduate Exit Paper on "Deregulation of the Electric Industry".
- Attended Eastern Utility Rate School in 2000 and 2005.

EDUCATION

- Currently enrolled at Arizona State University - West in the Post Baccalaureate Graduate Certificate Program in Accountancy with two courses remaining.
- Master of Public Administration, State University of West Georgia, 1997, GPA 3.5.
- BS Business Management & Administration, Minor in Economics, Sorrel School of Business, Troy State University, 1985.
- AA Business Administration, Miles Community College, 1981.

RESUME OF PUBLIC UTILITY RATE CASES & AUDITS PARTICIPATION

Residential Utility Consumer Office For Years 2000 To Present

Arizona-American Water Company – Docket No. WS-01303A-05-0405

Arizona Public Service Co. – Docket No. E-01345A-03-0437

Tucson Electric Power Company – Docket No. E-01933A-04-0408

UniSource Merger – Docket No. E-04230A-03-0933

Arizona-American Water Company – Docket No. WS-01303A-02-0867

Arizona Water Company (Eastern Group) – Docket No. W01445A-02-0619

Litchfield Park Service Company – Docket Nos. W-01427A-01-0487 & SW-01428A-01-0487

Arizona Water Company (Northern Group) – Docket No. W-01445A-00-0962

Rio Verde Utilities, Inc. – Docket Nos. W-02156A-00-0321 & SW-02156A-00-0323

Arizona-American Water Company (Paradise Valley) – Docket Nos. W-01303A-05-0405 & W-01303A-05-0910

Arizona-American Water Company (Mohave District) – Docket No. WS-01303A-06-0014

Arizona-American Water Company (Sun City & Sun Cit West Wastewater) – Docket No. WS-01303A-06-0491

Arizona-American Water Company - Docket No. W-01303A-07-0209

Georgia Public Service Commission For Years 1985 – 1991

Atlanta Gas Light Company

Georgia Power Company

Atlanta Gas Light Company (Management Audit)

Georgia Public Service Commission For Years 1985 – 1991 (continued)

Georgia Power Company

Trenton Telephone Company

Fairmount Telephone Company

Ellijay Telephone Company

GTE, Inc.

ALL-TEL Telephone Company

Citizens Utilities Co.

Ball Ground Telephone Company

Lanett Telephone Company

Brantley Telephone Company

Blue Ridge Telephone Company

Waverly Hall Telephone Company

St. Marys Telephone Company

Darien Telephone Company

Statesboro Telephone Company

Statesboro Telephone Co-op

Wilkes Telephone Company

RUCO EXHIBIT 1

Chaparral City Water Company
Trended Reconstruction Cost Plant
Test Year Ended December 31, 2006

Exhibit
Schedule B-4
Witness: Bourassa

NARUC	NARUC Description	Vin. Yr.	Month	Month	Original Cost	Source	HW155	Base	Index	Factor	RCN Cost	(1) Ratio RCN to Orig. Cost	(2) Accumulated Depreciation	(1)X(2) Trended Accumulated Depreciation
311	Electric Pumping Equipment	1972	01	12	9,897	HW155	311	619	96	6.4479	63,815			
311	Electric Pumping Equipment	1973	01	12	48,255	HW155	311	619	100	6.19	298,698			
311	Electric Pumping Equipment	1974	01	12	74,696	HW155	311	619	122	5.0738	378,993			
311	Electric Pumping Equipment	1975	01	12	16,868	HW155	311	619	155	3.9935	67,362			
311	Electric Pumping Equipment	1978	01	12	15,276	HW155	311	619	192	3.224	49,250			
311	Electric Pumping Equipment	1979	01	12	48,180	HW155	311	619	205	3.0195	145,480			
311	Electric Pumping Equipment	1980	01	12	3,955	HW155	311	619	222	2.7883	11,028			
311	Electric Pumping Equipment	1981	01	12	30,920	HW155	311	619	245	2.5265	78,119			
311	Electric Pumping Equipment	1982	01	12	2,717	HW155	311	619	260	2.3808	6,469			
311	Electric Pumping Equipment	1985	01	12	34,865	HW155	311	619	282	2.195	76,529			
311	Electric Pumping Equipment	1986	01	12	104,906	HW155	311	619	284	2.1796	228,653			
311	Electric Pumping Equipment	1987	01	12	496,107	HW155	311	619	299	2.0702	1,027,041			
311	Electric Pumping Equipment	1989	01	12	18,061	HW155	311	619	330	1.8758	33,879			
311	Electric Pumping Equipment	1993	01	12	4,845	HW155	311	619	386	1.6036	7,770			
311	Electric Pumping Equipment	1996	01	12	11,862	HW155	311	619	450	1.3756	16,317			
311	Electric Pumping Equipment	1998	07	12	226,168	HW155	311	619	486	1.2737	288,071			
311	Electric Pumping Equipment	1999	07	12	1,218	HW155	311	619	499	1.2405	1,510			
311	Electric Pumping Equipment	2000	01	06	13,555	HW155	311	619	523	1.1836	16,044			
311	Electric Pumping Equipment	2002	07	12	1,094	HW155	311	619	533	1.1614	1,270			
311	Electric Pumping Equipment	2003	07	12	82,771	HW155	311	619	546	1.1337	93,838			
311	Electric Pumping Equipment	2003	07	12	23,294	HW155	311	619	546	1.1337	26,408			
311	Electric Pumping Equipment	2004	01	06	11,447	HW155	311	619	547	1.1316	12,954			
311	Electric Pumping Equipment	2004	07	12	40,174	HW155	311	619	569	1.0879	43,705			
311	Electric Pumping Equipment	2005	01	06	42,698	HW155	311	619	604	1.0248	43,757			
311	Electric Pumping Equipment	2005	07	12	65,967	HW155	311	619	611	1.0131	66,831			
311	Electric Pumping Equipment	2006	07	12	77,112	HW155	311	619	619	1	77,112			
311 Total	**Electric Pumping Equipment**				**1,506,908**						**3,160,902**	2.0976	834,457	1,750,363

Chaparral City Water Company
Trended Reconstruction Cost Plant
Test Year Ended December 31, 2006

Exhibit
Schedule B-4
Witness: Bourassa

NARUC	NARUC Description	Vin. Yr.	Month	Month	Original Cost	Source	HW155	Base	Index	Factor	RCN Cost	(1) Ratio RCN to Orig. Cost	(2) Accumulated Depreciation	(1)X(2) Trended Accumulated Depreciation
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311	Electric Pumping Equipment	2003	07	12	82,771	HW155	311	619	546	1.1337	93,838			
311	Electric Pumping Equipment	2003	07	12	0	HW155	311	619	546	1.1337	0			
311	Electric Pumping Equipment	2004	01	06	11,447	HW155	311	619	547	1.1316	12,954			
311	Electric Pumping Equipment	2004	07	12	40,174	HW155	311	619	569	1.0879	43,705			
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311	Electric Pumping Equipment	2005	07	12	65,967	HW155	311	619	611	1.0131	66,831			
311	Electric Pumping Equipment	2006	07	12	77,112	HW155	311	619	619	1	77,112			
311 Total	**Electric Pumping Equipment**				**1,483,614**						**3,134,494**	2.1127	834,457	1,762,992

RUCO EXHIBIT 2

RUCO EXHIBIT 2

Chaparral City Water Company, Inc
Docket No. W-02113A-04-0616
Test Year Ended December 31, 2003

EXPLANATION OF OPERATING INCOME ADJUSTMENT NO. 2
PROPERTY TAX COMPUTATION

LINE NO.	DESCRIPTION	(A)	(B)
	Calculation Of The Company's Full Cash Value:		
	Annual Operating Revenues:		
1	Year 2001 (Company Schedule E-2)	$ 6,269,724	
2	Year 2002 (Company Schedule E-2)	6,157,058	
3	Year 2003 (Company Schedule E-2)	6,221,082	
4	Total Three Year Operating Revenues (L1 + L2 + L3)	$ 18,647,864	
5	Average Annual Operating Revenues (L4 / 3)	6,215,955	
6	Two Times Three Year Average Operating Revenues (L5 X 2)		$ 12,431,909
	ADD: Ten Percent Of Construction Work In Progress ("CWIP"):		
7	Test Year CWIP	$ 3,968,300	
8	10% Of CWIP (L7 X 10%)		$ 396,830
	SUBTRACT: Transportation At Book Value:		
9	Original Cost Of Transportation Equipment (RLM-5, Pg 17, Col (E), L 21)	$ 448,606	
10	Acc. Dep. Of Transportation Equipment (RLM-5, Pg 17, Col (F), L 21)	$ 28,114	
11	Book Value Of Transportation Equipment (L9 - L10)		$ 420,492
12	COMPANY'S FULL CASH VALUE (L6 + L8 + L11)		$ 12,408,247
	Calculation Of The Company's Tax Liability:		
	MULTIPLY: Company Full Cash Value By Valuation Assessment Ratio And Then By Property Tax Rates:		
13	Assessment Ratio (ADOR Directive)	25%	
14	Assessed Value (L12 X L13)	$ 3,102,062	
	Property Tax Rates:		
15	2004 Composite Tax Rate (Line 24)	9.05%	
16	Secondary Tax Rate	0.00%	
17	Estimated Tax Rate Liability (L14 + L15)	9.05%	
18	COMPANY'S TAX LIABILITY - Based On Full Cash Value (L14 X L17)		$ 280,835
19	Test Year Adjusted Property Tax Expense Per Company's Filing (Schedule C-1)	$ 310,331	
20	Increase (Decrease) In Property Tax Expense (L18 - L19)	$ (29,496)	
21	Adjustment To Test Year Property Tax Expense (See RLM-7 Col. (B), L21)		$ (29,496)

	2004 Property Tax RateCalculation (Per RUCO Data Request 1.14)	
22	2004 Assessed Property Value	$ 3,098,772
23	2004 Tax Assessment	$ 280,537
24	Composite Tax Rate (Line 24 / Line 23)	9.05%

CHAPARRAL CITY WATER COMPANY, INC.
DOCKET NO. W-02113A-07-0551
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TJC - 3	RATE BASE - ORIGINAL COST ("OCRB")
TJC - 4, pages 1 thru 2	SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS
TJC - 5	OCRB UTILITY PLANT IN SERVICE & ACCUMULATED DEPRECIATION
TJC - 6, pages 1 thru 3	RECOMPUTATION OF DIRECT PLANT & ACCUMULATED DEPRECIATION
TJC - 7	OCRB ADJ. #3 - REMOVE WELLS 8 & 9
TJC - 8	OCRB ADJ. #5 - REMOVE SHEA WATER TREATMENT PLANT 1
TJC - 9	OCRB ADJ. #6 - CAPITALIZE EXPENSED PLANT ITEMS
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TJC - 11	OCRB ADJ. #11 - REMOVE POST TEST YEAR GENERAL OFFICE PLANT
TJC - 12	OCRB ADJ. #14 - RECOMPUTATION OF CONTRIBUTIONS IN AID OF CONSTRUCTION
TJC - 28	OCRB ADJ. #15 - REMOVE DEFERRED REGULATORY ASSET
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TJC - 20	RCND RATE BASE ADJ. #5 - REMOVE SHEA WATER TREATMENT PLANT 1
TJC - 21	RCND RATE BASE ADJ. #6 - CAPITALIZE EXPENSED PLANT ITEMS
TJC - 22	RCND RATE BASE ADJ. #7 - DIRECT PLANT RECONCILIATION ADJUSTMENT
TJC - 23	RCND RATE BASE ADJ. #8 - DIRECT PLANT ACCUMULATED DEPRECIATION
TJC - 24, page 1 of 2	RCND RATE BASE ADJ. #10 - GENERAL OFFICE PLANT ALLOCATION
TJC - 24, page 2 of 2	RCND RATE BASE ADJ. #10 - GENERAL OFFICE ACCUMULATED DEPRECIATION ALLOCATION
TJC - 25	RCND RATE BASE ADJ. #11 - REMOVE POST TEST YEAR GENERAL OFFICE PLANT

TJC - 26	RCND RATE BASE ADJ. #13 - RECALCULATE ADVANCES IN AID OF CONSTRUCTION ("AIAC")
TJC - 27	RCND RATE BASE ADJ. #14 - RECOMPUTATION OF CONTRIBUTIONS IN AID OF CONSTRUCTION
TJC - 28	RCND RATE BASE ADJ. #15 - REMOVE DEFERRED REGULATORY ASSET
TJC - 29	RCND RATE BASE ADJ. #16 - WORKING CAPITAL
TJC - 30	OPERATING INCOME - TEST YEAR AND RUCO PROPOSED
TJC - 31	SUMMARY OF OPERATING ADJUSTMENTS
TJC - 32	OPERATING ADJ. #1 - DEPRECIATION AND AMORTIZATION EXPENSE
TJC - 33	OPERATING ADJ. #2 - PROPERTY TAX EXPENSE
TJC - 34	OPERATING ADJ. #3 - NORMALIZE MISCELLANEOUS EXPENSE
TJC - 35	OPERATING ADJ. #4 - RATE CASE EXPENSE
TJC - 36	OPERATING ADJ. #5 - PURCHASED WATER EXPENSE
TJC - 37	OPERATING ADJ. #6 - OUTSIDE SERVICES EXPENSE
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TJC - 39	OPERATING ADJ. #8 - REMOVE EXPENSED PLANT ITEMS AND CAPITALIZE
TJC - 40	OPERATING ADJ. #9 - INTENTIONALLY LEFT BLANK
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TJC - 43	OPERATING ADJ. #12 - INCOME TAXES
TJC - 44	COST OF CAPITAL
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CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
REVENUE REQUIREMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-1
PAGE 1 OF 2
DIRECT TESTIMONY

REVENUE REQUIREMENTS

LINE NO.	DESCRIPTION	(A) COMPANY REQUESTED	(B) RUCO RECOMMENDED
1	ADJUSTED FAIR VALUE RATE BASE (FVRB)	$ 28,736,406	$ 27,501,327
2	ADJUSTED OPERATING INCOME	797,271	1,101,299
3	CURRENT RATE OF RETURN (L2 / L1)	2.77%	4.00%
4	REQUIRED RATE OF RETURN ON FVRB	9.32%	6.38%
5	REQUIRED OPERATING INCOME (L4 * L1)	2,678,233	1,753,848
6	OPERATING INCOME DEFICIENCY (L5 - L2)	1,880,962	652,548
7	GROSS REVENUE CONVERSION FACTOR	1.6286	1.6287
8	GROSS REVENUE INCREASE	$ 3,063,335	$ 1,062,786
9	CURRENT REVENUES T/Y ADJUSTED	7,446,700	7,508,649
10	PROPOSED ANNUAL REVENUE (L8 + L9)	10,510,035	8,571,434
11	PERCENTAGE AVERAGE INCREASE	41.14%	14.15%

REFERENCES:
COLUMN (A): COMPANY SCHEDULE A-1
COLUMN (B): SCHEDULE TJC-1, PG. 2, TJC-2, TJC-3, TJC-30 AND TJC-43

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
GROSS REVENUE CONVERSION FACTOR

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-1
PAGE 2 OF 2
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
1	REVENUE	1.0000	
2	UNCOLLECTIBLES	0.00000	COMPANY SCH. C-3
3	SUB-TOTAL	1.0000	LINE 1 - LINE 2
4	LESS: TAX RATE	38.60%	NOTE (a)
5	TOTAL	0.6140	LINE 3 - LINE 4
6	REVENUE CONVERSION FACTOR	1.62867	LINE 1/LINE 5

NOTE (a):
CALCULATION OF EFFECTIVE TAX RATE

OPERATING INCOME BEFORE TAXES	100.00%
LESS: ARIZONA STATE TAX	6.97%
TAXABLE INCOME FEDERAL	93.03%
TIMES: FEDERAL INCOME TAX RATE	34.00%
SUBTOTAL	31.63%
ADD STATE TAX RATE	38.60%
LINE 3 ABOVE	100.00%
EFFECTIVE TAX RATE	38.60%

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RATE BASE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-2
DIRECT TESTIMONY

Line No.		RUCO Original Cost Rate base	RUCO RCND Rate base	RUCO Fair Value Rate Base (50/50)
1				
2	Gross Utility Plant in Service	$ 49,589,334	$ 76,931,792	$ 63,260,563
3	Less: Accumulated Depreciation	(13,711,057)	(21,768,381)	(17,739,719)
4				
5	Net Utility Plant in Service	$ 35,878,277	$ 55,163,411	$ 45,520,844
6				
7	Less:			
8	Advances in Aid of			
9	Construction	(6,557,243)	(10,172,761)	(8,365,002)
10	Contributions in Aid of			
11	Construction - Net of amortization	(6,120,652)	(9,443,715)	(7,782,184)
12	Customer Meter Deposits	(819,845)	(819,845)	(819,845)
13	Deferred Income Taxes & Credits	(925,896)	(925,896)	(925,896)
14	Investment tax Credits	-	-	-
15	Shared Gain on Well	(646,000)	(646,000)	(646,000)
16				
17	Plus:			
18	Unamortized Debt Issuance			
19	Costs	424,010	424,010	424,010
20	Working Capital	95,400	95,400	95,400
21	Deferred Regulatory Assets	-	-	-
22				
23				
24				
25				
26	Total Rate Base	$ 21,328,051	$ 33,674,604	$ 27,501,327
27				
28				
29				
30	SUPPORTING SCHEDULES:			RECAP SCHEDULES:
31	Schedules TJC-4, pages 1 and 2			Schedule TJC-1
32	Schedules TJC-5			
33	Schedules TJC-6, pages 1, 2, and 3			
34	Schedules TJC-14, pages 1 and 2			
35	Schedule TJC-15			

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE - ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-3
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENTS	(C) RUCO AS ADJUSTED
1	PLANT IN SERVICE	$ 51,771,885	$ (2,182,551)	$ 49,589,334
2	ACCUMULATED DEPRECIATION	(15,877,022)	2,165,965	(13,711,057)
3	NET PLANT IN SERVICE	$ 35,894,863	$ (16,586)	$ 35,878,277
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-	-	-
5	TOTAL NET PLANT	$ 35,894,863	$ (16,586)	$ 35,878,277
	Less:			
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(6,557,243)	-	(6,557,243)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(6,119,129)	(1,523)	(6,120,652)
8	CUSTOMER METER DEPOSITS	(819,845)	-	(819,845)
9	DEFERRED INCOME TAXES	(925,896)	-	(925,896)
10	INVESTMENT TAX CREDITS	-	-	-
11	SHARED GAIN ON WELL	(646,000)	-	(646,000)
	Plus:			
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010	-	424,010
13	WORKING CAPITAL	207,006	(111,606)	95,400
14	DEFERRED REGULATORY ASSETS	1,280,000	(1,280,000)	-
15	TOTAL RATE BASE	$ 22,737,766	$ (1,409,715)	$ 21,328,051

REFERENCES:
COLUMN (A): COMPANY SCHEDULE B-1
COLUMN (B): SCHEDULE TJC-4, PAGES 1 and 2
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-4
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ #1	(C) ADJ #2	(D) ADJ #3	(E) ADJ #4	(F) ADJ #5	(G) ADJ #6	(H) ADJ #7	(I) ADJ #8
1	PLANT IN SERVICE	$51,771,885			$ (103,468)		$(2,010,923)	$ 43,217	$ -	
2	ACCUMULATED DEPRECIATION	(15,877,022)			103,468		2,010,923	0		
3	NET PLANT IN SERVICE	$35,894,863	$ -	$ -	$ -	$ -	$ 0	$ 43,217	$ -	$ -
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-								
5	TOTAL NET PLANT	$35,894,863	$ -	$ -	$ -	$ -	$ 0	$ 43,217	$ -	$ -
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(6,557,243)								
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(6,119,129)								
8	CUSTOMER METER DEPOSITS	(819,845)		-		-				
9	DEFERRED INCOME TAXES	(925,896)		-		-				
10	INVESTMENT TAX CREDITS	-								
11	SHARED GAIN ON WELL	(646,000)								
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010					-	-		
13	WORKING CAPITAL	207,006								
14	DEFERRED REGULATORY ASSETS	1,280,000								-
15	TOTAL RATE BASE	$22,737,766	$ -	$ -	$ -	$ -	$ 0	$ 43,217	$ -	$ -

ADJUSTMENT #:	REFERENCE:
1. Intentionally Left Blank	
2. Intentionally Left Blank	
3. Remove Wells 8 & 9 - Out of Sevice	SCHEDULE TJC-7
4. Intentionally Left Blank	
5. Remove Shea Water Treatment Plant 1 - Taken Out of Service	SCHEDULE TJC-8
6. Remove Expensed Plant Items and Capitalize	SCHEDULE TJC-9
7. Intentionally Left Blank	
8. Intentionally Left Blank	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(J) ADJ #9	(K) ADJ #10	(L) ADJ #11	(M) ADJ #12	(N) ADJ #13	(O) ADJ #14	(P) ADJ #15	(Q) ADJ #16	(R) RUCO ADJUSTED
1	PLANT IN SERVICE		$ (95,944)	$ (15,434)	$ -	$ -	$ -	$ -	$ -	$ 49,589,334
2	ACCUMULATED DEPRECIATION	76	$ 51,498	-						(13,711,057)
3	NET PLANT IN SERVICE	$ 76	$ (44,446)	$ (15,434)	$ -	$ -	$ -	$ -	$ -	$ 35,878,277
4	CONSTRUCTION WORK IN PROGRESS (CWIP)									-
5	TOTAL NET PLANT	$ 76	$ (44,446)	$ (15,434)	$ -	$ -	$ -	$ -	$ -	$ 35,878,277
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)									(6,557,243)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET						(1,523)	-	-	(6,120,652)
8	CUSTOMER METER DEPOSITS	-		-						(819,845)
9	DEFERRED INCOME TAXES	-		-						(925,896)
10	INVESTMENT TAX CREDITS									-
11	SHARED GAIN ON WELL									(646,000)
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS				-	-				424,010
13	WORKING CAPITAL								(111,606)	95,400
14	DEFERRED REGULATORY ASSETS							(1,280,000)		-
15	TOTAL RATE BASE	$ 76	$ (44,446)	$ (15,434)	$ -	$ -	$ (1,523)	$ (1,280,000)	$ (111,606)	$ 21,328,051

ADJUSTMENT #:	REFERENCE:
9. To Adjust OCRB Direct Plant Accumulated Depreciation	SCHEDULE TJC-6
10. Correct 4-Factor General Office Plant & Accumulated Depreciation Allocation Factor	SCHEDULE TJC-10, PAGES 1 and 2
11. Remove Post Test Year GO Plant in Account 303 & 340	SCHEDULE TJC-11
12. Intentionally Left Blank	
13. Intentionally Left Blank	
14. To correct CIAC amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.	SCHEDULE TJC-12
15. To Remove Deferred Regulatory Asset - Additional CAP Allocation	SCHEDULE TJC-28
16. Working Capital	SCHEDULE TJC-29, PAGES 1 thru 15

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RE-COMPUTATION OF TOTAL UTILITY PLANT IN SERVICE (UPIS)
AND ACCUMULATED DEPRECIATION FROM DECISION NO. 68176

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-5
DIRECT TESTIMONY

Total Chaparral City Water UPIS:

Line No.	Description	Amount
1	Chaparral City Water Direct Plant Per Company	$51,020,714
2	Chaparral City Water Direct Plant Per RUCO	51,020,714
3	RUCO's Direct Plant Adjustment	$ 0
4	Chaparral City Water General Office Plant Allocation Per Company	$ 751,171
5	Chaparral City Water General Office Plant Allocation Per RUCO	639,794
6	RUCO's General Office Plant Allocation Adjustment	$ (111,377)
7	Total Chaparral City Water Gross UPIS Per Company	$51,771,885
8	Total Chaparral City Water Gross UPIS Per RUCO	51,660,508
9	Total RUCO Gross UPIS Adjustment	$ (111,377)

Total Chaparral City Water Accumulated Depreciation:

10	Chaparral City Water Direct Plant Accumulated Depreciation Per Company	$15,473,834
11	Chaparral City Water Direct Plant Accumulated Depreciation Per RUCO	15,473,758
12	RUCO's Direct Plant Accumulated Depreciation Adjustment	(76)
13	Chaparral City Water General Office Allocation of Accumulated Depreciation Per Company	403,188
14	Chaparral City Water General Office Allocation of Accumulated Depreciation Per RUCO	351,690
15	RUCO's General Office Allocation of Accumulated Depreciation Adjustment	(51,498)
16	Total Chaparral City Water Accumulated Depreciation Per Company	15,877,022
17	Total Chaparral City Water Accumulated Depreciation Per RUCO	15,825,448
18	Total RUCO Accumulated Depreciation Adjustment	$ (51,574)

Supporting Schedules:
\TJC-4(a)Schedules\Pages1-5\DirectPlant\AZ-CorpPlant\CentralDivisionPlant\
Regarding RUCO's Eastern Div. treatment see Company response to RUCO DR 2.06

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

December 31, 2004

LINE NO.	ACCT. NO.	ACCOUNT NAME	(A) DEP. RATE Thru Sep-05	(B) DEP. RATE After Sep-05	(C) 12/31/2003 PLANT BALANCE Per DECISION 68176	(D) 12/31/2003 ACCUM. DEPREC. Per DECISION 68176	(E) 2004 PLANT ADDIT'NS	(F) 2004 PLANT RETIRM'TS	(G) 2004 PLANT ADJUSTM'T	(H) TOTAL PLANT VALUE 12/31/2004	(I) 2004 DEPREC'N EXPENSE	(J) ENDING ACCUM. DEPREC. 12/31/2004	(K) NET PLANT VALUE 12/31/2004
1	301	Organization Cost	0.00%	0.00%	-	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	0.00%	0.00%	-	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	0.00%	0.00%	271,857	-	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	2.50%	3.33%	654,407	260,483	331,000	-	-	985,407	20,498	280,981	704,426
5	305	Collecting and Impounding Res.	2.50%	2.50%	6,548	62	-	-	-	6,548	164	246	6,303
6	306	Lake River and Other Intakes	2.50%	2.50%	-	-	-	-	-	-	-	-	-
7	307	Wells and Springs	2.50%	3.33%	332,065	154,900	-	-	-	332,065	8,302	163,202	168,863
8	308	Infiltration Galleries and Tunnels	2.50%	6.67%	-	-	-	-	-	-	-	-	-
9	309	Supply Mains	2.50%	2.00%	-	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	2.50%	5.00%	-	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	2.50%	12.50%	1,291,399	615,457	53,925	-	(23,294)	1,322,030	32,668	648,125	673,905
12	320	Water Treatment Equipment	2.50%	3.33%	5,660,573	1,671,920	1,961,851	-	(5,686)	7,616,738	165,966	1,837,886	5,778,852
13	330	Distribution Reservoirs & Standpipe	2.50%	2.22%	6,022,014	1,497,474	-	-	(1,296)	6,020,718	150,534	1,648,008	4,372,710
14	331	Transmission and Distribution Mains	2.50%	2.00%	15,991,782	6,020,309	348,845	-	-	16,340,626	404,155	6,424,464	9,916,162
15	333	Services	2.50%	3.33%	4,979,133	501,319	1,423,193	-	-	6,402,326	142,268	643,587	5,758,738
16	334	Meters	2.50%	8.33%	2,163,197	610,611	251,973	-	(3,556)	2,411,613	57,185	667,796	1,743,817
17	335	Hydrants	2.50%	2.00%	523,178	183,366	84,716	-	-	607,893	14,138	197,504	410,389
18	336	Backflow Prevention Devices	2.50%	6.67%	-	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	2.50%	6.67%	(0)	-	-	-	-	(0)	(0)	(0)	(0)
20	340	Office Furniture and Fixtures	2.50%	6.67%	182,811	19,192	43,730	-	-	226,540	5,117	24,309	202,232
21	341	Transportation Equipment	2.50%	20.00%	406,775	(1,732)	95,984	(65,224)	-	437,535	10,554	(56,402)	493,938
22	342	Stores Equipment	2.50%	4.00%	-	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	2.50%	5.00%	88,004	21,609	4,936	-	-	92,940	2,262	23,871	69,069
24	344	Laboratory Equipment	2.50%	10.00%	-	25	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	2.50%	5.00%	-	-	-	-	-	-	-	-	-
26	346	Communications Equipment	2.50%	10.00%	39,105	(5,716)	-	-	-	39,105	978	(4,738)	43,843
27	347	Miscellaneous Equipment	2.50%	10.00%	67,303	16,832	16,445	-	-	83,748	1,888	18,720	65,028
28	348	Other Tangible Plant	2.50%	10.00%	-	-	34,063	-	-	34,063	426	426	33,638
29		Plant Held for Future Use	0.00%	0.00%	-	-	-	-	-	-	-	-	-
30													
31		Total Gross Water Plant in Service & Accumulated Depreciation			$ 38,680,149	$ 11,566,130	$ 4,650,659	$ (65,224)	$ (33,832)	$ 43,231,752	$ 1,017,102	$ 12,518,008	$30,713,744

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-6
PAGE 2 OF 3
DIRECT TESTIMONY

YEAR 2005

LINE NO.	ACCT. NO.	ACCOUNT NAME	BEGINNING PLANT BALANCES ON JAN. 1, 2005	(A) 2005 PLANT ADDIT'NS	(B) 2005 PLANT RETIRM'TS	(C) 2005 PLANT ADJUSTM'T	(D) TOTAL PLANT VALUE 12/31/2005	(E) DEPREC'N EXPENSE	(F) ENDING ACCUM. DEPREC. 12/31/2005	(G) NET PLANT VALUE 12/31/2005
1	301	Organization Cost	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	271,857	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	985,407	468,546	-	-	1,453,952	33,023	314,003	1,139,949
5	305	Collecting and Impounding Res.	6,548	-	-	-	6,548	164	409	6,139
6	306	Lake River and Other Intakes	-	-	-	-	-	-	-	-
7	307	Wells and Springs	332,065	-	-	-	332,065	8,991	172,193	159,873
8	308	Infiltration Galleries and Tunnels	-	-	-	-	-	-	-	-
9	309	Supply Mains	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	1,322,030	106,361	(21,889)	-	1,406,502	68,213	694,449	712,053
12	320	Water Treatment Equipment	7,616,738	130,344	-	-	7,747,081	207,988	2,045,874	5,701,207
13	330	Distribution Reservoirs & Standpipe	6,020,718	2,031,545	(3,000)	-	8,049,263	170,950	1,815,958	6,233,305
14	331	Transmission and Distribution Mains	16,340,626	191,647	-	-	16,532,274	390,366	6,814,830	9,717,444
15	333	Services	6,402,326	536,187	-	-	6,938,513	180,602	824,189	6,114,324
16	334	Meters	2,411,613	215,171	-	-	2,626,785	99,697	767,493	1,859,291
17	335	Hydrants	607,893	263,983	-	-	871,877	17,572	215,077	656,800
18	336	Backflow Prevention Devices	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	(0)	1,610,687	-	-	1,610,687	28,529	28,529	1,582,157
20	340	Office Furniture and Fixtures	226,540	24,735	(4,006)	-	247,269	8,392	28,695	218,574
21	341	Transportation Equipment	437,535	120,595	(23,389)	-	534,742	33,422	(46,369)	581,111
22	342	Stores Equipment	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	92,940	52,874	-	-	145,814	3,731	27,601	118,213
24	344	Laboratory Equipment	-	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	-	-	-	-	-	-	-	-
26	346	Communications Equipment	39,105	-	-	-	39,105	1,711	(3,027)	42,132
27	347	Miscellaneous Equipment	83,748	-	-	-	83,748	3,664	22,384	61,364
28	348	Other Tangible Plant	34,063	-	-	-	34,063	1,490	1,916	32,147
29		Plant Held for Future Use	-	-	-	-	-	-	-	-
30										
31		Total Gross Water Plant in Service & Accumulated Depreciation	43,231,752	$ 5,752,677	$ (52,284)	$ -	$48,932,145	$ 1,258,505	$ 13,724,228	$35,207,916

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-6
PAGE 3 OF 3
DIRECT TESTIMONY

YEAR 2006

LINE NO.	ACCT. NO.	ACCOUNT NAME	BEGINNING PLANT BALANCES ON JAN. 1, 2006	(A) 2006 PLANT ADDIT'NS	(B) 2006 PLANT RETIRM'TS	(C) 2006 PLANT ADJUSTM'T	(D) TOTAL PLANT VALUE 12/31/2006	(E) DEPREC'N EXPENSE	(F) ENDING ACCUM. DEPREC. 12/31/2006	(G) NET PLANT VALUE 12/31/2006
1	301	Organization Cost	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	271,857	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	1,453,952	70,236	(5,540)	-	1,518,648	49,494	357,958	1,160,691
5	305	Collecting and Impounding Res.	6,548	-	-	-	6,548	164	573	5,975
6	306	Lake River and Other Intakes	-	-	-	-	-	-	-	-
7	307	Wells and Springs	332,065	-	-	-	332,065	11,058	183,250	148,815
8	308	Infiltration Galleries and Tunnels	-	-	-	-	-	-	-	-
9	309	Supply Mains	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	1,406,502	77,112	-	-	1,483,614	180,632	875,081	608,533
12	320	Water Treatment Equipment	7,747,081	10,733	-	-	7,757,814	258,157	2,304,030	5,453,784
13	330	Distribution Reservoirs & Standpipe	8,049,263	121,156	-	-	8,170,419	180,038	1,995,997	6,174,423
14	331	Transmission and Distribution Mains	16,532,274	918,360	-	-	17,450,634	339,829	7,154,659	10,295,975
15	333	Services	6,938,513	453,417	(2,000)	-	7,389,929	238,569	1,060,758	6,329,172
16	334	Meters	2,626,785	95,332	-	-	2,722,116	222,782	990,275	1,731,841
17	335	Hydrants	871,877	299,756	-	-	1,171,632	20,435	235,512	936,121
18	336	Backflow Prevention Devices	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	1,610,687	-	-	-	1,610,687	107,433	135,962	1,474,725
20	340	Office Furniture and Fixtures	247,269	23,090	-	-	270,359	17,263	45,958	224,401
21	341	Transportation Equipment	534,742	573	-	-	535,315	107,006	60,636	474,679
22	342	Stores Equipment	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	145,814	3,551	-	-	149,365	7,379	34,981	114,384
24	344	Laboratory Equipment	-	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	-	-	-	-	-	-	-	-
26	346	Communications Equipment	39,105	-	-	-	39,105	3,910	883	38,222
27	347	Miscellaneous Equipment	83,748	22,794	-	-	106,542	9,514	31,898	74,644
28	348	Other Tangible Plant	34,063	-	-	-	34,063	3,406	5,322	28,741
29		Plant Held for Future Use	-	-	-	-	-	-	-	-
30										
31		RUCO Total Gross Water Plant in Service & Accumulated Depreciation	48,932,145	$ 2,096,109	$ (7,540)	$ -	$ 51,020,714	$ 1,757,069	$ 15,473,758	$ 35,546,957
32										
33		Company Gross Water Plant in Service & Accumulated Depreciation					51,020,714		15,473,834	
34										
35		*RUCO Adjustment*					(0)		$ (76)	

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 3

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-7
DIRECT TESTIMONY

Line No.			
1	OCRB Direct Plant - Remove Wells 8 & 9 - Out of Service		
2			
3	Company OCRB Direct Plant - Remove Wells 8 & 9 from Account 307	$	103,468
4	RUCO OCRB Direct Plant - Remove Wells 8 & 9 from Account 307		-
5	RUCO Adjustment		(103,468)
6			
7			
8	Increase (Decrease) to OCRB Direct Plant	$	(103,468)
9			
10			
11	Company OCRB Direct Plant Accumulated Depreciation - A/C 307	$	54,932
12	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 307		(48,536)
13	RUCO Adjustment		(103,468)
14			
15			
16	Increase (Decrease) to OCRB Accumulated Depreciation	$	(103,468)
17			
18			
19	Net Adjustment	$	-
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Well 8_9.xls		

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 5

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-8
DIRECT TESTIMONY

Line No.		
1	OCRB Direct Plant - Remove Shea Water Treatment Plant 1 - Out of Service	
2		
3	Company OCRB Direct Plant - Account 320	$ 7,763,500
4	RUCO OCRB Direct Plant - Account 320	5,752,577
5	RUCO Adjustment	(2,010,923)
6		
7		
8	Increase (Decrease) to OCRB Direct Plant	$ (2,010,923)
9		
10		
11	Company OCRB Direct Plant Accumulated Depreciation - A/C 320	$ 2,099,307
12	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 320	88,384
13	RUCO Adjustment	(2,010,923)
14		
15		
16	Increase (Decrease) to OCRB Accumulated Depreciation	$ (2,010,923)
17		
18		
19	Net Adjustment	$ 0
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_Remove Shea Water Treatment Plant 1.xls	
26	ocrb_plant_Remove Shea Water Treatment Plant 1.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 6

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-9
DIRECT TESTIMONY

Line No.			
1	OCRB Direct Plant - Remove Expensed Items in Account 339 and Capitalize		
2			
3	Company OCRB Direct Plant - Account 339	$	1,814,021
4	RUCO OCRB Direct Plant - Account 339		1,857,238
5	RUCO Adjustment		43,217
6			
7			
8	Increase (Decrease) to OCRB Direct Plant - Account 339	$	43,217
9			
10			
11	Company OCRB Direct Plant Accumulated Depreciation - A/C 339	$	277,127
12	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 339		277,127
13	RUCO Adjustment		0
14			
15			
16	Increase (Decrease) to OCRB Accumulated Depreciation	$	0
17			
18			
19	Net Adjustment	$	43,217
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Expensed Items & Capitalize.xls		

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #10 - GENERAL OFFICE ALLOCATED PLANT
ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-10
PAGE 1 of 2
DIRECT TESTIMONY

December 31, 2006

Line No.		General Office Plant Allocation - Plant-in-Service	Per Company Orig. Cost	4 Factor Allocation %	4 Factor Allocated Orig. Cost
1	301	Organization Cost	16,452	2.80%	461
2	302	Franchise Cost and Other Intangible Plant	1,089,237	2.80%	30,499
3	303	Land and Land Rights	-	2.80%	-
4	304	Structures and Improvements	5,802,813	2.80%	162,479
5	305	Collecting and Impounding Res.	-	2.80%	-
6	306	Lake River and Other Intakes	-	2.80%	-
7	307	Wells and Springs	-	2.80%	-
8	308	Infiltration Galleries and Tunnels	-	2.80%	-
9	309	Supply Mains	-	2.80%	-
10	310	Power Generation Equipment	-	2.80%	-
11	311	Electric Pumping Equipment	(916)	2.80%	(26)
12	320	Water Treatment Equipment	-	2.80%	-
13	330	Distribution Reservoirs & Standpipe	-	2.80%	-
14	331	Transmission and Distribution Mains	-	2.80%	-
15	333	Services	-	2.80%	-
16	334	Meters	-	2.80%	-
17	335	Hydrants	-	2.80%	-
18	336	Backflow Prevention Devices	-	2.80%	-
19	339	Other Plant and Miscellaneous Equipment	847,382	2.80%	23,727
20	340	Office Furniture and Fixtures	14,268,765	2.80%	399,525
21	341	Transportation Equipment	552,719	2.80%	15,476
22	342	Stores Equipment	-	2.80%	-
23	343	Tools and Work Equipment	405,643	2.80%	11,358
24	344	Laboratory Equipment	4,061	2.80%	114
25	345	Power Operated Equipment	249,261	2.80%	6,979
26	346	Communications Equipment	165,561	2.80%	4,636
27	347	Miscellaneous Equipment	-	2.80%	-
28	348	Other Tangible Plant	-	2.80%	-
29					
30		Company Requested Level of Total General Office Plant	$ 23,400,978		$ 655,227
31					
32		Less:			
33		RUCO OCRB Adjustment #11 - Remove Post Test Year Plant	551,208		
34					
35		RUCO Recommended Level of Total General Office Plant	$ 22,849,770		
36		4 Factor Allocation Factor	2.80%		
37					
38		RUCO Recommended Level of Allocated General Office Plant - See TJC-5	$ 639,794		
39					
40		Company Increase (Decrease) to General Office Plant-in-Service Allocation			$ 751,171
41		RUCO Increase (Decrease) to General Office Plant-in-Service Allocation			$ 655,227
42		RUCO Adjustment			$ (95,944)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #10 - ACCUMULATED DEPRECIATION
ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-10
PAGE 2 of 2
DIRECT TESTIMONY

Line No.	General Office Plant Allocation - Accumulated Depreciation		RUCO Accumulated Depreciation	4 Factor Allocation %	Allocated Accumulated Depreciation
1	301	Organization Cost	3,046	2.80%	85
2	302	Franchise Cost and Other Intangible Plant	211,596	2.80%	5,925
3	303	Land and Land Rights	-	2.80%	-
4	304	Structures and Improvements	2,354,430	2.80%	65,924
5	305	Collecting and Impounding Res.	-	2.80%	-
6	306	Lake River and Other Intakes	-	2.80%	-
7	307	Wells and Springs	-	2.80%	-
8	308	Infiltration Galleries and Tunnels	-	2.80%	-
9	309	Supply Mains	-	2.80%	-
10	310	Power Generation Equipment	-	2.80%	-
11	311	Electric Pumping Equipment	-	2.80%	-
12	320	Water Treatment Equipment	-	2.80%	-
13	330	Distribution Reservoirs & Standpipe	-	2.80%	-
14	331	Transmission and Distribution Mains	-	2.80%	-
15	333	Services	-	2.80%	-
16	334	Meters	-	2.80%	-
17	335	Hydrants	-	2.80%	-
18	336	Backflow Prevention Devices	-	2.80%	-
19	339	Other Plant and Miscellaneous Equipment	162,569	2.80%	4,552
20	340	Office Furniture and Fixtures	8,664,647	2.80%	242,610
21	341	Transportation Equipment	552,718	2.80%	15,476
22	342	Stores Equipment	-	2.80%	-
23	343	Tools and Work Equipment	192,488	2.80%	5,390
24	344	Laboratory Equipment	4,062	2.80%	114
25	345	Power Operated Equipment	249,257	2.80%	6,979
26	346	Communications Equipment	165,561	2.80%	4,636
27	347	Miscellaneous Equipment	-	2.80%	-
28	348	Other Tangible Plant	-	2.80%	-
29			$ 12,560,374		$ 351,690
30					
31	Company Increase (Decrease) to General Office Accumulated Depreciation				$ 403,188
32	RUCO Increase (Decrease) to General Office Accumulated Depreciation				$ 351,690
33	RUCO Adjustment to General Office Accumulated Depreciation				$ (51,498)

Chaparral City Water Company
Test Year Ended December 31, 2006
OCRB Rate Base Proforma Adjustments
Adjustment 11

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-11
DIRECT TESTIMONY

Line No.		
1	OCRB General Office Plant - Remove Post Test Year Plant	
2		
3	Company OCRB 2007 Post Test Year Plant - Account 303	$ 159,087
4	Company OCRB 2007 Post Test Year Plant - Account 340	392,121
5		
6	Total Company Post Test Year - General Office Plant	551,208
7		
8	Chaparral General Office Plant Allocator	2.80%
9		
10	Increase (Decrease) to OCRB General Office Plant	$ (15,434)
11		
12		
13	Company OCRB GO Plant Accumulated Depreciation - A/C	$ 12,560,374
14	RUCO OCRB Direct Plant Accumulated Depreciation	12,560,374
15	RUCO Adjustment	-
16		
17	Chaparral General Office Plant Allocator	2.80%
18		
19		
20	Increase (Decrease) to Accumulated Depreciation	$ -
21		
22		
23	Net Adjustment	$ (15,434)
24		
25		

SUPPORTING SCHEDULE
rcn_go_plant_Remove PTY Plant Adj.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 14

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-12
DIRECT TESTIMONY

Line No.				
1	Computation of CIAC Balances			
2				
3	Balance at 12/31/2003 per Decision		$	273,476
4	Additions 2004			272,024
5	Balance at 12/31/2004			545,500
6	Additions 2005			405,152
7	Balance at 12/31/2005			950,652
8	Additions 2006			5,337,445
9	Balance at 12/31/2006		$	6,288,097
10				
11	Computation of Accumulated Amortization CIAC Balances (Half-year Convention)			
12				
13	Balance at 12/31/2003 per Decision		$	15,334
14	2004 Amortization at composite rate	2.500%		10,237
15	Balance at 12/31/2004			25,571
16	2005 Amortization at composite rate	2.500% (9 months)		14,026
17	2005 Amortization at composite rate	3.3588% (3 months)		6,282
18	Balance at 12/31/2005			45,879
19	2006 Amortization at composite rate	3.3588%		121,568
20	Balance at 12/31/2006		$	167,447
21				
22	A.A. Balance per Computation		$	167,447
23	Balance at End of Test Year			99,136
24	Adjustment to A.A. CIAC			68,311
25				
26				
27	Company Adjustment		$	69,834
28	RUCO Adjustment			68,311
29				
30				
31				
32	Increase (Decrease) to Contributions-in-aid, Net		$	1,523

Reference:
Line 17 and 19 utilizes amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE - RCND

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-13
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENTS	(C) RUCO AS ADJUSTED
1	PLANT IN SERVICE	$ 80,783,568	$ (3,851,776)	$ 76,931,792
2	ACCUMULATED DEPRECIATION	(25,894,686)	4,126,305	(21,768,381)
3	NET PLANT IN SERVICE	$ 54,888,882	$ 274,529	$ 55,163,411
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-	-	-
5	TOTAL NET PLANT	$ 54,888,882	$ 274,529	$ 55,163,411
	Less:			
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(10,231,760)	58,999	(10,172,761)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(9,441,352)	(2,363)	(9,443,715)
8	CUSTOMER METER DEPOSITS	(819,845)	-	(819,845)
9	DEFERRED INCOME TAXES	(925,896)	-	(925,896)
10	INVESTMENT TAX CREDITS	-	-	-
11	SHARED GAIN ON WELL	(646,000)	-	(646,000)
	Plus:			
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010	-	424,010
13	WORKING CAPITAL	207,006	(111,606)	95,400
14	DEFERRED REGULATORY ASSETS	1,280,000	(1,280,000)	-
15	TOTAL RATE BASE	$ 34,735,045	$ (1,060,441)	$ 33,674,604

REFERENCES:
COLUMN (A): COMPANY SCHEDULE B-4 and B-4-A
COLUMN (B): SCHEDULE TJC-14, PAGES 1 and 2
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RCND RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ #1	(C) ADJ #2	(D) ADJ #3	(E) ADJ #4	(F) ADJ #5	(G) ADJ #6	(H) ADJ #7	(I) ADJ #8
1	PLANT IN SERVICE	$80,783,568	$ (118)	$ (17,807)	$ (435,284)	$ (36,773)	$(3,262,891)	$ 43,217	$ 35	
2	ACCUMULATED DEPRECIATION	(25,894,686)	(1)	4,411	435,284	(13,320)	3,262,891	(0)		370,826
3	NET PLANT IN SERVICE	$54,888,882	$ (119)	$ (13,396)	$ (0)	$ (50,093)	$ 0	$ 43,217	$ 35	$ 370,826
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-								
5	TOTAL NET PLANT	$54,888,882	$ (119)	$ (13,396)	$ (0)	$ (50,093)	$ 0	$ 43,217	$ 35	$ 370,826
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(10,231,760)								
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(9,441,352)								
8	CUSTOMER METER DEPOSITS	(819,845)		-		-				
9	DEFERRED INCOME TAXES	(925,896)		-		-				
10	INVESTMENT TAX CREDITS	-								
11	SHARED GAIN ON WELL	(646,000)								
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010					-	-		
13	WORKING CAPITAL	207,006								
14	DEFERRED REGULATORY ASSETS	1,280,000								
15	TOTAL RATE BASE	$34,735,045	$ (119)	$ (13,396)	$ (0)	$ (50,093)	$ 0	$ 43,217	$ 35	$ 370,826

ADJUSTMENT #:	REFERENCE:
Adjustment #1: RCN Factor Rounding Adjustment	SCHEDULE TJC-16
Adjustment #2: Correct Account 304 Index Factors on 3 Line Items	SCHEDULE TJC-17
Adjustment #3: Remove Wells 8 & 9 from Plant-in-Service and Accumulated Depreciation	SCHEDULE TJC-18
Adjustment #4: Remove RCN Double Count of Plant Transfers from ACC Decision No. 68176	SCHEDULE TJC-19
Adjustment #5: Remove Shea Water Treatment Plant - Out of Service	SCHEDULE TJC-20
Adjustment #6: Remove Expensed Plant Items and Capitalize	SCHEDULE TJC-21
Adjustment #7: Adjustment to Reconcile to RUCO's RCN Trended Direct Plant of $76,081,819	SCHEDULE TJC-22
Adjustment #8: RCN Trended Direct Plant Accumulated Depreciation	SCHEDULE TJC-23

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RCND RATE BASE ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-14
PAGE 2 of 2
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(J) ADJ #9	(K) ADJ #10	(L) ADJ #11	(M) ADJ #12	(N) ADJ #13	(O) ADJ #14	(P) ADJ #15	(Q) ADJ #16	(R) RUCO ADJUSTED
1	PLANT IN SERVICE		$ (126,720)	$ (15,434)	$ -	$ -	$ -	$ -	$ -	$ 76,931,792
2	ACCUMULATED DEPRECIATION		67,617	(1,404)						(21,768,381)
3	NET PLANT IN SERVICE	$ -	$ (59,103)	$ (16,837)	$ -	$ -	$ -	$ -	$ -	$ 55,163,411
4	CONSTRUCTION WORK IN PROGRESS (CWIP)									-
5	TOTAL NET PLANT	$ -	$ (59,103)	$ (16,837)	$ -	$ -	$ -	$ -	$ -	$ 55,163,411
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)									
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET									
8	CUSTOMER METER DEPOSITS									
9	DEFERRED INCOME TAXES				58,999					(10,172,761)
10	INVESTMENT TAX CREDITS									(9,443,715)
11	SHARED GAIN ON WELL									(819,845)
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS					(2,363)				(925,896)
13	WORKING CAPITAL									-
14	DEFERRED REGULATORY ASSETS									(646,000)
15	TOTAL RATE BASE	$ -	$ (59,103)	$ (16,837)	$ -	$ 58,999	$ (2,363)	$(1,280,000)	$ (111,606)	$ 33,674,604

ADJUSTMENT #:
Adjustment #9: Intentionally Left Blank
Adjustment #10: Correct 4-Factor General Office Plant & Accumulated Depreciation Allocation Factor
Adjustment #11: Remove Post Test Year GO Plant in Account 303 & 340
Adjustment #12: Intentionally Left Blank
Adjustment #13: AIAC RCN Factor Adjustment
Adjustment #14: To correct CIAC amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.
Adjustment #15: To Remove Deferred Regulatory Asset - Additional CAP Allocation

REFERENCE:
SCHEDULE TJC-24, PAGES 1 and 2
SCHEDULE TJC-25
SCHEDULE TJC-26
SCHEDULE TJC-27
SCHEDULE TJC-28

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #1 - TOTAL RCND UTILITY PLANT IN SERVICE (UPIS)
AND ACCUMULATED DEPRECIATION

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-15
DIRECT TESTIMONY

Total Chaparral City Water RCND UPIS:

Line No.	Description	Amount
1	Chaparral City Water Direct Plant Per Company	$ 79,791,440
2	Chaparral City Water Direct Plant Per RUCO	76,081,819
3	RUCO's Direct Plant Adjustment	$ (3,709,621)
4	Chaparral City Water General Office Plant Allocation Per Company	$ 992,128
5	Chaparral City Water General Office Plant Allocation Per RUCO	849,978
6	RUCO's General Office Plant Allocation Adjustment	$ (142,150)
7	Total Chaparral City Water Gross RCN UPIS Per Company	$ 80,783,568
8	Total Chaparral City Water Gross UPIS Per RUCO	76,931,796
9	Total RUCO Gross UPIS Adjustment	$ (3,851,772)

Total Chaparral City Water RCND Accumulated Depreciation:

10	Chaparral City Water Direct Plant Accumulated Depreciation Per Company	$ 25,365,293
11	Chaparral City Water Direct Plant Accumulated Depreciation Per RUCO	21,305,201
12	RUCO's Direct Plant Accumulated Depreciation Adjustment	(4,060,092)
13	Chaparral City Water General Office Allocation of Accumulated Depreciation Per Company	529,393
14	Chaparral City Water General Office Allocation of Accumulated Depreciation Per RUCO	463,180
15	RUCO's General Office Allocation of Accumulated Depreciation Adjustment	(66,213)
16	Total Chaparral City Water Accumulated Depreciation Per Company	25,894,686
17	Total Chaparral City Water Accumulated Depreciation Per RUCO	21,768,381
18	Total RUCO Accumulated Depreciation Adjustment	$ (4,126,305)
19	RUCO's Chaparral City Water Plant Adjustment - Net of Accumulated Depreciation	$ 274,533

Supporting Schedules:
\TJC-4(a)Schedules\Pages1-5\DirectPlant\AZ-CorpPlant\CentralDivisionPlant\
Regarding RUCO's Eastern Div. treatment see Company response to RUCO DR 2.06

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 1

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-16
DIRECT TESTIMONY

Line No.		
1	RCN Direct Plant - Rounding Adjustment	
2		
3	Company RCN Trended Direct Plant	$ 79,791,440
4	RUCO RCN Trended Direct Plant	79,791,322
5	RUCO Adjustment	(118)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (118)
9		
10		
11	Company RCN Trended Direct Plant Accumulated Depreciation	$ 24,502,143
12	RUCO RCN Trended Direct Plant Accumulated Depreciation	24,502,143
13	RUCO Adjustment	1
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ 1
17		
18		
19	Net Adjustment	$ (119)
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_correct_RCN Factor Rounding.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 2

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-17
DIRECT TESTIMONY

Line No.		
1	RCN Direct Plant - Correct Account 304 Index Factor	
2		
3	Company RCN Trended Direct Plant - Account 304	$ 1,965,394
4	RUCO RCN Trended Direct Plant - Account 304	1,947,587
5	RUCO Adjustment	(17,807)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (17,807)
9		
10		
11	Company RCN Trended Direct Plant Accumulated Depreciation - A/C 304	$ 486,810
12	RUCO RCN Trended Direct Plant Accumulated Depreciation - A/C 304	482,399
13	RUCO Adjustment	(4,411)
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ (4,411)
17		
18		
19	Net Adjustment	$ (13,396)
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_correct_Acct 304_Index.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 3

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-18
DIRECT TESTIMONY

Line No.			
1	RCN Direct Plant - Remove Wells 8 & 9 - Out of Service		
2			
3	Company RCN Trended Direct Plant - Wells 8 & 9 from Account 307	$	435,284
4	RUCO RCN Trended Direct Plant - Wells 8 & 9 from Account 307		-
5	RUCO Adjustment		(435,284)
6			
7			
8	Increase (Decrease) to RCN Direct Plant	$	(435,284)
9			
10			
11	Company RCN Trended Direct Plant Accumulated Depreciation - A/C 307	$	150,254
12	RUCO RCN Trended Direct Plant Accumulated Depreciation - A/C 307		(285,030)
13	RUCO Adjustment		(435,284)
14			
15			
16	Increase (Decrease) to Accumulated Depreciation	$	(435,284)
17			
18			
19	Net Adjustment	$	(0)
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Well 8_9.xls		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 4

DOCKET NO. W-02113A-
SCHEDULE TJC-19
DIRECT TESTIMONY

Line No.		
1	RCN Direct Plant - Remove Decision 68176 Plant Transfers Adjustment	
2		
3	Company RCN Trended Direct Plant - Account 311	$ 3,160,902
4	Company RCN Trended Direct Plant - Account 320	9,969,130
5	Company RCN Trended Direct Plant - Account 334	3,981,833
6	Company RCN Trended Total Account 311, 320, & 334 Balances	17,111,865
7		
8		
9	RUCO RCN Trended Direct Plant - Account 311	3,134,494
10	RUCO RCN Trended Direct Plant - Account 320	9,962,912
11	RUCO RCN Trended Direct Plant - Account 334	3,977,686
12	RUCO RCN Trended Total Account 311, 320, & 334 Balances	17,075,092
13		
14	RUCO Total RCN Trended Plant Adjustment	(36,773)
15		
16		
17	Increase (Decrease) to RCN Direct Plant	$ (36,773)
18		
19		
20		
21	Company RCN Trended Accum. Depre. - Account 311	$ 1,750,363
22	Company RCN Trended Accum. Depre. - Account 320	2,695,725
23	Company RCN Trended Accum. Depre. - Account 334	1,507,882
24	Company RCN Trended Total A/D 311, 320, & 334 Balances	5,953,970
25		
26		
27	Company RCN Trended Direct Plant - Account 311	1,762,992
28	Company RCN Trended Direct Plant - Account 320	2,696,018
29	Company RCN Trended Direct Plant - Account 334	1,508,279
30	Company RCN Trended Total Account 311, 320, & 334 Balances	5,967,290
31		
32	RUCO Total RCN Trended Accum. Depre. Adjustment	13,320
33		
34		
35	Increase (Decrease) to RCN Accumulated Depreciation	$ 13,320
36		
37		
38	Net Adjustment	$ (50,093)

SUPPORTING SCHEDULE
rcn_plant_Remove Decision 68176 Adj.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 5

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-20
DIRECT TESTIMONY

Line No.		
1	RCND Direct Plant - Remove Shea Water Treatment Plant 1 - Out of Service	
2		
3	Company RCN Direct Plant - Account 320	$ 9,969,130
4	RUCO RCN Direct Plant - Account 320	6,706,239
5	RUCO Adjustment	(3,262,891)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (3,262,891)
9		
10		
11	Company RCN Direct Plant Accumulated Depreciation - A/C 320	$ 2,695,725
12	RUCO RCN Direct Plant Accumulated Depreciation - A/C 320	(567,166)
13	RUCO Adjustment	(3,262,891)
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ (3,262,891)
17		
18		
19	Net Adjustment	$ 0
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_Remove Shea Water Treatment Plant 1.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 6

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-21
DIRECT TESTIMONY

Line No.			
1	RCND Direct Plant - Remove Expenses in Account 339 and Capitalize		
2			
3	Company RCN Direct Plant - Account 339	$	1,814,021
4	RUCO RCN Direct Plant - Account 339		1,857,238
5	RUCO Adjustment		43,217
6			
7			
8	Increase (Decrease) to RCN Direct Plant	$	43,217
9			
10			
11	Company RCN Direct Plant Accumulated Depreciation - A/C 339	$	277,127
12	RUCO RCN Direct Plant Accumulated Depreciation - A/C 339		277,127
13	RUCO Adjustment		0
14			
15			
16	Increase (Decrease) to Accumulated Depreciation	$	0
17			
18			
19	Net Adjustment	$	43,217
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Expensed Items & Capitalize.xls		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 7

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-22
DIRECT TESTIMONY

Line No.		
1	RCN Direct Plant - Reconciliation Adjustment to RUCO Recomputed RCN Direct Plant Balance	
2		
3	Company RCN Trended Direct Plant	$79,791,440
4		
5	Less RUCO RCN Direct Plant Adjustments:	
6	Adjustment #1: RCN Factor Rounding Adjustment	(118)
7	Adjustment #2: Correct Account 304 Index Factors on 3 Line Items	(17,807)
8	Adjustment #3: Remove Wells 8 & 9 from Plant-in-Service and Accumulated Depreciation	(435,284)
9	Adjustment #4: Remove Double Count of Plant Transfers from ACC Decision No. 68176	(36,773)
10	Adjustment #5: Remove Shea Water Treatment Plant 1 - Out of Service	(3,262,891)
11	Adjustment #6: Capitalize Expensed Plant Items from Account #339	43,217
12		
13	Total RUCO RCN Direct Plant Balance	$76,081,783
14		
15	RUCO's Recomputed RCN Direct Plant - Net Adjustments	76,081,819
16	Rounding Adjustment to Reconcile to RUCO's RCN Trended Direct Plant of $76,081,819	$ 35
17		
18	Increase (Decrease) to RCN Direct Plant	$ 35
19		
20		
21		
22		
23		
24		
25		

SUPPORTING SCHEDULE
rcn_plant_correct_RCN Factor Rounding.xls
rcn_plant_correct_Acct 304_Index.xls
rcn_plant_Remove Well 8_9.xls
rcn_plant_Remove Decision 68176 Adj.xls
rcn_plant_Remove Shea Water Treatment Plant 1.xls
rcn_plant_Remove Expensed Items & Capitalize.xls
rcn_plant.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 8

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-23
DIRECT TESTIMONY

Line No.			
1	RCN Direct Plant Accumulated Depreciation Adjustment		
2			
3	Company RCN Direct Plant - Accumulated Depreciation	$	(25,365,293)
4			
5	Less RUCO RCN Direct Plant Accumulated Depreciation Adjustments:		
6	Adjustment #1: RCN Factor Rounding Adjustment		(1)
7	Adjustment #2: Correct Account 304 Index Factors on 3 Line Items		4,411
8	Adjustment #3: Remove Wells 8 & 9 from Plant-in-Service and Accumulated Depreciation		435,284
9	Adjustment #4: Remove Double Count of Plant Transfers from ACC Decision No. 68176		(13,320)
10	Adjustment #5: Remove Shea Water Treatment Plant 1 - Out of Service		3,262,891
11			
12	Total RUCO RCN Direct Plant Accumulated Depreciation Balance - Net of Adjustments	$	(21,676,028)
13			
14	RUCO's Recomputed RCN Direct Plant Accumulated Depreciation - Net Adjustments		(21,305,201)
15	Adjustment to Reconcile to RUCO's RCN Direct Plant A/D of $21,305,201		(370,826)
16			
17	Increase (Decrease) to RCN Direct Plant - Accumulated Depreciation		(370,826)
18			
19			
20			

SUPPORTING SCHEDULE
rcn_plant_correct_RCN Factor Rounding.xls
rcn_plant_correct_Acct 304_Index.xls
rcn_plant_Remove Well 8_9.xls
rcn_plant_Remove Decision 68176 Adj.xls
rcn_plant_Remove Shea Water Treatment Plant 1.xls
rcn_plant.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 10

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-24
PAGE 1 of 2
DIRECT TESTIMONY

Line No.					
1	General Office Plant Allocation - Plant-in-service		**Company**		**RUCO**
2			**Trended**	**4 Factor**	**4 Factor Allocated**
3	**NARUC**	**NARUC Description**	**RCN Value**	**Allocation %**	**Trended RCN**
4	301	Organization Cost	16,452	2.80%	461
5	302	Franchise Cost and Other Intangible Plant	1,089,237	2.80%	30,499
6	303	Land and Land Rights	-	2.80%	-
7	304	Structures and Improvements	9,379,730	2.80%	262,632
8	305	Collecting and Impounding Res.	-	2.80%	-
9	306	Lake River and Other Intakes	-	2.80%	-
10	307	Wells and Springs	-	2.80%	-
11	308	Infiltration Galleries and Tunnels	-	2.80%	-
12	309	Supply Mains	-	2.80%	-
13	310	Power Generation Equipment	-	2.80%	-
14	311	Electric Pumping Equipment	(1,860)	2.80%	(52)
15	320	Water Treatment Equipment	-	2.80%	-
16	330	Distribution Reservoirs & Standpipe	-	2.80%	-
17	331	Transmission and Distribution Mains	-	2.80%	-
18	333	Services	-	2.80%	-
19	334	Meters	-	2.80%	-
20	335	Hydrants	-	2.80%	-
21	336	Backflow Prevention Devices	-	2.80%	-
22	339	Other Plant and Miscellaneous Equipment	1,055,403	2.80%	29,551
23	340	Office Furniture and Fixtures	17,188,237	2.80%	481,271
24	341	Transportation Equipment	606,575	2.80%	16,984
25	342	Stores Equipment	-	2.80%	-
26	343	Tools and Work Equipment	663,298	2.80%	18,572
27	344	Laboratory Equipment	15,358	2.80%	430
28	345	Power Operated Equipment	634,172	2.80%	17,757
29	346	Communications Equipment	260,818	2.80%	7,303
30	347	Miscellaneous Equipment	-	2.80%	-
31	348	Other Tangible Plant	-	2.80%	-
32					
33			$ 30,907,420		$ 865,408
34					
35					
36	Company Computed General Office Plant				$ 992,128
37	RUCO Computed General Office Plant				865,408
38					
39	Increase (Decrease) to Plant -in-service				(126,720)

SUPPORTING SCHEDULE
rcn_plant_correct_RCN Factor Rounding.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 10

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-24
PAGE 2 of 2
DIRECT TESTIMONY

Line No.					
1	General Office Plant Allocation - Accumulated Depreciation				
2			**Company Trended**		**4 Factor Allocated**
3			**RCN Value**		**Trended RCN**
4				**4 Factor**	
5	**NARUC**	**NARUC Description**	**Accum. Depr.**	**Allocation %**	**Accum. Depr.**
6	301	Organization Cost	3,046	2.80%	85
7	302	Franchise Cost and Other Intangible Plant	211,596	2.80%	5,925
8	303	Land and Land Rights	-	2.80%	-
9	304	Structures and Improvements	3,805,726	2.80%	106,560
10	305	Collecting and Impounding Res.	-	2.80%	-
11	306	Lake River and Other Intakes	-	2.80%	-
12	307	Wells and Springs	-	2.80%	-
13	308	Infiltration Galleries and Tunnels	-	2.80%	-
14	309	Supply Mains	-	2.80%	-
15	310	Power Generation Equipment	-	2.80%	-
16	311	Electric Pumping Equipment	-	2.80%	-
17	320	Water Treatment Equipment	-	2.80%	-
18	330	Distribution Reservoirs & Standpipe	-	2.80%	-
19	331	Transmission and Distribution Mains	-	2.80%	-
20	333	Services	-	2.80%	-
21	334	Meters	-	2.80%	-
22	335	Hydrants	-	2.80%	-
23	336	Backflow Prevention Devices	-	2.80%	-
24	339	Other Plant and Miscellaneous Equipment	202,477	2.80%	5,669
25	340	Office Furniture and Fixtures	10,437,484	2.80%	292,250
26	341	Transportation Equipment	606,574	2.80%	16,984
27	342	Stores Equipment	-	2.80%	-
28	343	Tools and Work Equipment	314,752	2.80%	8,813
29	344	Laboratory Equipment	15,362	2.80%	430
30	345	Power Operated Equipment	634,162	2.80%	17,757
31	346	Communications Equipment	260,818	2.80%	7,303
32	347	Miscellaneous Equipment	-	2.80%	-
33	348	Other Tangible Plant	-	2.80%	-
34					
35			$ 16,491,997		$ 461,776
36					
37	Company Computed General Office Accumulated Depreciation				$ 529,393
38	RUCO Computed General Office Accumulated Depreciation				461,776
39					
40	Increase (Decrease) to Accumulated Depreciation				$ (67,617)

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 11

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-25
DIRECT TESTIMONY

Line No.		
1	RCN General Office Plant - Remove Post Test Year Plant	
2		
3	Company RCN Trended 2007 Post Test Year Plant - Account 303	$ 159,087
4	Company RCN Trended 2007 Post Test Year Plant - Account 340	392,121
5		
6	Total Company Post Test Year - General Office Plant	551,208
7		
8	4-Factor Allocator	2.80%
9		
10	Increase (Decrease) to RCN General Office Plant	$ (15,434)
11		
12		
13	Company RCN Trended GO Plant Accumulated Depreciation	$ 16,491,997
14	RUCO RCN Trended Direct Plant Accumulated Depreciation	16,542,128
15	RUCO Adjustment	50,131
16		
17	Chaparral General Office Plant Allocator	2.80%
18		
19		
20	Increase (Decrease) to Accumulated Depreciation	$ 1,404
21		
22		
23	Net Adjustment	$ (16,837)
24		
25		

SUPPORTING SCHEDULE
rcn_go_plant_Remove PTY Plant Adj.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 13

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
DIRECT TESTIMONY

Line No.		
1	RCN General Office Plant - Adjust AIAC RCN Factor Balance	
2		
3	Company RCN Trended AIAC Balance	$ (10,231,760)
4	RUCO RCN Trended AIAC Balance	(10,172,761)
5		
6	Difference in Accum. Depre. - Line 7 minus Line 4	(58,999)
7		
8		
9	Increase (Decrease) to RCN AIAC Balance	$ (58,999)
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

SUPPORTING SCHEDULE
SCHEDULE TJC-2

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 14

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-27
DIRECT TESTIMONY

Line No.			
1	RCN Computation of CIAC Balance		
2			
3	Company CIAC Balance Per OCRB Schedule TJC-2	$	(6,119,129)
4			
5	RUCO CIAC Balance Per OCRB Schedule TJC-2		(6,120,652)
6			
7	Increase (Decrease) to OCRB CIAC Balance	$	1,523
8			
9	RUCO RCN CIAC Trended Factor		1.5514
10			
11	Increase (Decrease) to RCN CIAC Balance	$	2,363
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29	Reference:		
30	SCHEDULE TJC-2		
31	Line 17 and 19 utilizes amortization rate authorized in Decision No. 68176		
32	per Bourassa Rebuttal Schedule C-2, page 2.		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 15

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-28
DIRECT TESTIMONY

Line No.		
1	Remove Deferred Regulatory Asset - Additional CAP Allocation	
2		
3	Company Deferred Regulatory Asset	$ 1,280,000
4		
5	RUCO Adjustment	(1,280,000)
6		
7	Increase (Decrease) to RCN Rate Base	$ (1,280,000)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL ADJUSTMENT
WORKING CAPITAL ADJUSTMENT SUMMARY

LINE NO.	DESCRIPTION	AMOUNT
1	Cash Working Capital per Company	$ -
2	Cash Working Capital per RUCO	(111,606)
3	RUCO Adjustment	(111,606)
4	Materials & Supplies Inventories per Company	$ 14,521
5	Materials & Supplies Inventories per RUCO	14,521
6	RUCO Adjustment	-
7	Prepayments per Company	$ 192,485
8	Prepayments per RUCO	192,485
9	RUCO Adjustment	-
10	Total Working Capital Adjustment	$ (111,606)

REFERENCES:
Lines 1, 4, and 7: Company Schedule B-1, Page 1
Line 2: See RUCO Schedule TJC-29, Page 2 of 14
Line 10: Line 3 + Line 6 + Line 9

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL ADJUSTMENT
LEAD/LAG CALCULATION

LINE NO.	DESCRIPTION	(A) EXPENSES PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED EXPENSES		(D) RUCO (LEAD)/LAG DAYS	(E) RUCO $ DAYS
1	SALARIES and WAGES	$ 969,244	$ -	969,244	*	12.00	$ 11,630,928
2	PURCHASED WATER	831,656	(30,001)	801,655	*	(36.88)	(29,564,875)
3	PURCHASED POWER	602,982	12,149	615,131	*	35.05	21,562,762
4	CHEMICALS	127,457	-	127,457	*	(50.91)	(6,488,529)
5	REPAIRS & MAINTENANCE	104,609	(43,217)	61,392	*	30.00	1,841,760
6	OFFICE SUPPLIES & EXPENSE	19,800	-	19,800	*	22.70	449,550
7	OUTSIDE SERVICES	266,544	(71,000)	195,544	*	29.09	5,688,667
8	WATER TESTING	43,458	-	43,458	*	15.72	683,033
9	TRANSPORTATION EXPENSES	70,430	-	70,430	*	30.00	2,112,900
10	INSURANCE - GENERAL LIABILITY	(1,294)	-	(1,294)	*	30.00	(38,820)
11	RENTS	-	-	-	*	0.00	-
12	MISCELLANEOUS EXPENSE	1,259,948	(123,366)	1,136,582	*	30.00	34,097,460
13	TAXES OTHER THAN INCOME	47,873	-	47,873	*	75.62	3,620,156
14	PROPERTY TAXES	295,813	(39,883)	255,930	*	212.50	54,385,028
15	STATE INCOME TAXES	48,745	121,096	169,841	*	62.65	10,640,540
16	FEDERAL INCOME TAXES	221,275	549,606	770,881		37.50	28,908,035
17	INTEREST	367,737	(110,305)	257,432	*	90.00	23,168,853
18	TOTAL OPERATING EXPENSES	$ 5,276,277	$ 265,079	$ 5,541,356			$ 162,697,449
19	EXPENSE LAG					29.36	
20	REVENUE LAG					22.01	
21	NET LAG					(7.35)	
22	CASH WORKING CAPITAL	$ (111,606)					

NOTE
* RUCO RECOMMENDED LEVEL OF CASH WORKING CAPITAL EXPENSES

ARIZONA-AMERICAN WATER COMPANY
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
REVENUE LEAD/LAG ANALYSIS

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	SERVICE PERIOD									
LINE NO.	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	BILL DATE	BILLING LAG	DUE DATE	PAY LAG	REVENUE LAG DAYS	AMOUNT OF BILL	RUCO $ DAYS
1	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	$ 34.07	$ 647
2	3/1/2006	3/31/2006	15.00	3/21/2006	-10.00	4/11/2006	21.00	26.00	28.57	743
3	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	25.82	491
4	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	25.82	697
5	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	25.82	697
6	3/1/2006	3/31/2006	15.00	3/20/2006	-11.00	4/10/2006	21.00	25.00	31.33	783
7	3/1/2006	3/31/2006	15.00	3/13/2006	-18.00	4/3/2006	21.00	18.00	52.24	940
8	3/1/2006	3/31/2006	15.00	3/13/2006	-18.00	4/3/2006	21.00	18.00	82.49	1,485
9	3/1/2006	3/31/2006	15.00	3/6/2006	-25.00	3/27/2006	21.00	11.00	52.24	575
10	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	57.74	1,097
11	3/1/2006	3/31/2006	15.00	3/21/2006	-10.00	4/11/2006	21.00	26.00	41.22	1,072
12	3/1/2006	3/31/2006	15.00	3/3/2006	-28.00	3/24/2006	21.00	8.00	63.23	506
13	3/1/2006	3/31/2006	15.00	3/7/2006	-24.00	3/28/2006	21.00	12.00	41.22	495
14	3/1/2006	3/31/2006	15.00	3/15/2006	-16.00	4/5/2006	21.00	20.00	301.83	6,037
15	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	549.86	14,846
16										
17									$ 1,414	$ 31,110
18										
19										
20	RUCO REVENUE LAG DAYS							22.01		

REFERENCES:
15 Chaparral City Water Bills

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
INTEREST EXPENSE (LEAD)/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Bond due 2007	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	1.75%	$ (0)
					12/31/2006	182.00	1.75%	3
2	Bond due 2011	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	7.28%	(0)
					12/31/2006	182.00	7.28%	13
3	Bond due 2022	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	33.58%	(1)
					12/31/2006	182.00	33.58%	61
4	Bond due 2022	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	7.39%	(0)
					12/31/2006	182.00	7.39%	13
5	TOTAL PAYMENTS & DOLLAR DAYS						100.00%	$ 90
6	**INTEREST EXPENSE LAG DAYS**						90.00	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PROPERTY TAX LAG DAYS ANALYSIS

	(A)	(B)	(C)	(D)	(E)
	SERVICE PERIOD				
LINE NO.	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	DUE DATE	EXPENSE LAG DAYS
1	1/1/2005	12/31/2005	7/1/2005	10/31/2005	61.00
2				4/30/2006	151.50
3	**TOTAL PROPERTY TAX LAG DAYS**				212.50

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF FEDERAL INCOME TAX LAG

LINE NO.	(A) PAYMENT DATE	-	(B) SERVICE PERIOD MIDPOINT	=	(C) (LEAD)/LAG DAYS	X	(D) PAYMENT AMOUNT	=	(E) DOLLAR DAYS
1	04/15/05		07/01/05		(77.00)		25.00%		(19.25)
2	06/15/05		07/01/05		(16.00)		25.00%		(4.00)
3	09/15/05		07/01/05		76.00		25.00%		19.00
4	12/15/05		07/01/05		167.00		25.00%		41.75
5	TOTALS						100.00%		37.50
6	INCOME TAX LAG				37.50				

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF STATE INCOME TAX LAG

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-29
PAGE 7 OF 15
DIRECT TESTIMONY

LINE NO.	(A) PAYMENT DATE	-	(B) SERVICE PERIOD MIDPOINT	=	(C) (LEAD)/LAG DAYS	X	(D) PAYMENT AMOUNT	=	(E) DOLLAR DAYS
1	04/15/99		07/01/99		(77.00)		22.50%		$ (17)
2	06/15/99		07/01/99		(16.00)		22.50%		(4)
3	09/15/99		07/01/99		76.00		22.50%		17
4	12/15/99		07/01/99		167.00		22.50%		38
5	04/15/00		07/01/99		289.00		10.00%		29
6	TOTALS						1.00		62.65
7	INCOME TAX LAG				62.65				

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
OUTSIDE SERVICES EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	TNT Technology Co.	12/18/2006	12/24/2006	12/21/2006	1/25/2007	35.00	$ 1,060	$ 37,100
2	NYE Tru Landscape	11/1/2005	11/30/2005	11/15/2005	12/30/2005	44.50	22,875	1,017,938
3	Quadna	2/6/2006	2/10/2006	2/8/2006	2/23/2006	15.00	35,433	531,495
4	TMV	5/1/2006	5/31/2006	5/16/2006	6/15/2006	30.00	500	15,000
5	Workplace Safety	9/23/2005	9/30/2005	9/26/2005	9/29/2005	2.50	244	610
6	Fennemore Craig	7/1/2006	7/31/2006	7/16/2006	8/21/2006	36.00	21,221	763,956
7	Total						$ 81,333	$ 2,366,099
8	Lead/Lag Days						29.09	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PURCHASED POWER EXPENSE LEAD/LAG ANALYSIS

LINE NO.	DESCRIPTION		(A) SERVICE PERIOD BEGINNING	(B) SERVICE PERIOD ENDING	(C) MID-POINT SERVICE PERIOD	(D) PAYMENT DATE	(E) PAYMENT (LEAD)/LAG	(F) PAYMENT AMOUNT	(G) DOLLAR DAYS
	APS:								
1		Jan-08	12/11/2007	1/9/2008	12/25/2007	1/31/2008	36.50	$ 17,136.95	$ 625,499
2		Dec-07	11/8/2007	12/11/2007	11/24/2007	12/31/2007	36.50	22,160.38	808,854
3		Nov-07	10/10/2007	11/8/2007	10/24/2007	11/30/2007	36.50	29,886.99	1,090,875
4		Oct-07	9/11/2007	10/10/2007	9/25/2007	10/29/2007	33.50	30,158.30	1,010,303
5	Total							99,342.62	3,535,530.73
6	Lead/Lag Days							35.59	
	SRP:								
7		Dec-07			15.5	23.5	39.00	$ 18,238.75	$ 711,311
8		Oct-07			15	21	36.00	13,647.95	491,326
9		Sep-07			16.5	16.5	33.00	13,996.67	461,890
10		Aug-07			15	13	28.00	12,379.76	346,633
11	Total							$ 58,263.13	$ 2,011,161
12	Lead/Lag Days							34.52	
13	Average Lead/Lag Days							35.05	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF STATE INCOME TAX LAG

LINE NO.	(A) SERVICE PERIOD	(B) SERVICE PERIOD MIDPOINT	(C) PAY DATE	(D) LAG DAYS
1	14 Days	7 Days	5	12 Days

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
TAXES OTHER THAN INCOME

LINE NO.	(A) SERVICE PERIOD	(B) SERVICE PERIOD MIDPOINT	(C) PAY DATE	(D) LAG DAYS
1	91.25 Days	45.62 Days	30	75.62

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
OFFICE SUPPLIES EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Ikon	11/8/2005	2/8/2006	12/24/2005	2/18/2006	56.00	$ 350.98	$ 19,655
2	Ikon	5/8/2006	8/8/2006	6/23/2006	8/18/2006	56.00	336.79	18,860
3	Ikon	8/8/2006	11/8/2006	9/23/2006	11/18/2006	56.00	382.83	21,438
4	Robertson Consulting	7/6/2006	7/24/2006	7/15/2006	7/24/2006	9.00	300.00	2,700
5	Robertson Consulting	8/25/2006	9/22/2006	9/8/2006	9/22/2006	14.00	725.89	10,162
6	Laser Pros	1/23/2006	1/26/2006	1/24/2006	1/26/2006	1.50	160.85	241
7	OPACS	1/9/2006	2/8/2006	1/24/2006	2/8/2006	15.00	395.01	5,925
8	Laser Pros	9/19/2006	9/20/2006	9/19/2006	9/20/2006	0.50	139.26	70
9	OPACS	1/20/2006	2/19/2006	2/4/2006	2/19/2006	15.00	460.07	6,901
10	OPACS	5/12/2006	6/11/2006	5/27/2006	6/11/2006	15.00	178.54	2,678
11	OPACS	7/28/2006	8/27/2006	8/12/2006	8/27/2006	15.00	309.78	4,647
12	OPACS	8/7/2006	9/6/2006	8/22/2006	9/6/2006	15.00	338.59	5,079
13	Pitney Bowes	8/24/2006	8/30/2006	8/27/2006	8/30/2006	3.00	189.99	570
14	OPACS	9/22/2006	10/22/2006	10/7/2006	10/22/2006	15.00	175.70	2,636
15	Network Supply Resource	9/12/2006	10/23/2006	10/2/2006	10/23/2006	20.50	298.00	6,109
5	Total						4,742.28	107,671.29
6	Lead/Lag Days						22.70	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
WATER TESTING EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Del Mar Analytical	6/15/2006	7/17/2006	7/1/2006	7/17/2006	16.00	$ 1,800.00	$ 28,800
2	Del Mar Analytical	2/28/2006	3/30/2006	3/15/2006	3/30/2006	15.00	1,800.00	27,000
3	Test America	8/14/2006	9/13/2006	8/29/2006	9/13/2006	15.00	4,450.56	66,758
4	Water Trax	1/17/2006	2/18/2006	2/2/2006	2/18/2006	16.00	4,205.62	67,290
5	MWH Laboratories	1/24/2006	3/1/2006	2/11/2006	3/1/2006	18.00	1,865.00	33,570
6	MWH Laboratories	1/24/2006	2/13/2006	2/3/2006	2/13/2006	10.00	130.00	1,300
7	Test America	8/14/2006	9/13/2006	8/29/2006	9/13/2006	15.00	1,020.00	15,300
5	Total						15,271.18	240,018.33
6	Lead/Lag Days						15.72	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CHEMICAL EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Hill Brothers	12/8/2005	1/9/2006	12/24/2005	1/7/2006	14.00	$ 1,513.00	$ 21,182
2	Hill Brothers	1/9/2006	1/19/2006	1/14/2006	2/8/2006	25.00	1,406.00	35,150
3	Hill Brothers	1/19/2006	2/2/2006	1/26/2006	2/18/2006	23.00	1,406.00	32,338
4	Hill Brothers	2/2/2006	2/13/2006	2/7/2006	3/1/2006	21.50	1,406.00	30,229
5	Hill Brothers	2/13/2006	2/24/2006	2/18/2006	3/12/2006	21.50	1,620.00	34,830
6	Hill Brothers	2/24/2006	3/8/2006	3/2/2006	3/23/2006	21.00	1,406.00	29,526
7	Hill Brothers	3/8/2006	3/24/2006	3/16/2006	4/7/2006	22.00	1,406.00	30,932
8	Hill Brothers	3/24/2006	4/6/2006	3/30/2006	4/23/2006	23.50	1,406.00	33,041
9	Hill Brothers	4/6/2006	4/17/2006	4/11/2006	5/5/2006	23.50	1,620.00	38,070
10	Hill Brothers	4/17/2006	5/3/2006	4/25/2006	5/16/2006	21.00	1,620.00	34,020
11	Hill Brothers	5/3/2006	5/10/2006	5/6/2006	6/2/2006	26.50	1,299.00	34,424
12	Hill Brothers	5/10/2006	5/17/2006	5/13/2006	6/9/2006	26.50	1,620.00	42,930
13	Hill Brothers	5/17/2006	5/31/2006	5/24/2006	6/16/2006	23.00	1,620.00	37,260
14	Hill Brothers	5/31/2006	6/6/2006	6/3/2006	6/30/2006	27.00	2,155.00	58,185
15	Hill Brothers	6/6/2006	6/14/2006	6/10/2006	7/5/2006	25.00	2,155.00	53,875
16	Hill Brothers	6/14/2006	6/23/2006	6/18/2006	7/13/2006	24.50	2,155.00	52,798
17	Hill Brothers	6/23/2006	6/30/2006	6/26/2006	7/22/2006	25.50	2,155.00	54,953
18	NTU Technologies	2/23/2006	8/3/2006	5/14/2006	3/22/2006	(53.50)	14,229.60	(761,284)
19	NTU Technologies	8/3/2006	12/14/2006	10/8/2006	9/2/2006	(36.50)	13,261.60	(484,048)
20	Thatcher	1/1/2006	12/31/2006	7/2/2006	1/31/2006	(152.00)	21,066.97	(3,202,179)
21	Engineered Sales	1/1/2006	12/31/2006	7/2/2006	1/31/2006	(152.00)	1,008.91	(153,354)
22	Total						77,535.08	(3,947,124.26)
23	Lead/Lag Days						(50.91)	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PURCHASED WATER EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	CAP - Capital Charge #1	1/1/2008	6/30/2008	3/31/2008	11/20/2007	(132.50)	$ 73,269.00	$ (9,708,143)
2	CAP - M&I	1/1/2008	1/31/2008	1/16/2008	12/20/2007	(27.00)	54,061.58	(1,459,663)
3	CAP - M&I	2/1/2008	2/29/2008	2/15/2008	1/20/2008	(26.00)	54,061.58	(1,405,601)
4	CAP - M&I	3/1/2008	3/31/2008	3/16/2008	2/20/2008	(25.00)	54,061.58	(1,351,540)
5	CAP - M&I	4/1/2008	4/30/2008	4/15/2008	3/20/2008	(26.50)	27,286.58	(723,094)
6	CAP - Capital Charge #2	7/1/2008	12/31/2008	9/30/2008	5/20/2008	(133.50)	93,544.50	(12,488,191)
7	CAP - M&I	5/1/2008	5/31/2008	5/16/2008	4/20/2008	(26.00)	54,061.58	(1,405,601)
8	CAP - M&I	6/1/2008	6/30/2008	6/15/2008	5/20/2008	(26.50)	54,061.58	(1,432,632)
9	CAP - M&I	7/1/2008	7/31/2008	7/16/2008	6/20/2008	(26.00)	54,061.58	(1,405,601)
10	CAP - M&I	8/1/2008	8/31/2008	8/16/2008	7/20/2008	(27.00)	54,061.58	(1,459,663)
11	CAP - M&I	9/1/2008	9/30/2008	9/15/2008	8/20/2008	(26.50)	54,061.58	(1,432,632)
12	CAP - M&I	10/1/2008	10/31/2008	10/16/2008	9/20/2008	(26.00)	54,061.58	(1,405,601)
13	CAP - M&I	11/1/2008	11/30/2008	11/15/2008	10/20/2008	(26.50)	54,061.58	(1,432,632)
14	CAP - M&I	12/1/2008	12/31/2008	12/16/2008	11/20/2008	(26.00)	54,061.58	(1,405,601)
15	CAP - CAGRD	1/1/2007	12/31/2007	7/2/2007	10/15/2008	471.00	18,560.00	8,741,760
16	Total						807,337.46	(29,774,433.45)
17	Lead/Lag Days						(36.88)	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING INCOME - TEST YEAR AND RUCO PROPOSED

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-30
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY TEST YEAR AS FILED	(B) RUCO TEST YEAR ADJUSTMENTS	(C) RUCO TEST YEAR AS ADJUSTED	(D) RUCO PROPOSED CHANGES	(E) RUCO RECOMMENDED
	REVENUES - WATER:					
1	WATER REVENUES	$ 7,364,411	$ 61,949	$ 7,426,360	$ 1,062,786	$ 8,489,145
2	UNMETERED WATER REVENUES	-	-	-		-
3	OTHER WATER REVENUES	82,289	-	82,289		82,289
4	TOTAL REVENUES	$ 7,446,700	$ 61,949	$ 7,508,649	$ 1,062,786	$ 8,571,434
	OPERATING EXPENSES:					
5	SALARIES AND WAGES	$ 969,244	$ -	$ 969,244	$ -	$ 969,244
6	PURCHASED WATER	831,656	(30,001)	801,655	-	801,655
7	PURCHASED POWER	602,982	12,149	615,131		615,131
8	CHEMICALS	127,457	-	127,457		127,457
9	REPAIRS AND MAINTENANCE	104,609	(43,217)	61,392		61,392
10	OFFICE SUPPLIES AND EXPENSE	19,800	-	19,800		19,800
11	OUTSIDE SERVICES	266,544	(71,000)	195,544		195,544
12	WATER TESTING	43,458	-	43,458		43,458
13	RENTS	-	-	-		-
14	TRANSPORTATION EXPENSES	70,430	-	70,430		70,430
15	INSURANCE - GENERAL LIABILITY	(1,294)	-	(1,294)		(1,294)
16	INSURANCE - HEALTH AND LIFE	-	-	-		-
17	REG. COMMISSION EXP. - RATE CA:	144,871	(51,538)	93,333		93,333
18	MISCELLANEOUS EXPENSE	1,259,948	(123,366)	1,136,582		1,136,582
19	DEPRECIATION & AMORTIZATION E	1,608,019	(91,690)	1,516,329		1,516,329
20	AMORT. OF GAIN ON WELL	(76,000)	-	(76,000)		(76,000)
21	AMORT. OF CAP	64,000	(64,000)	-		-
22	TAXES OTHER THAN INCOME	47,873	-	47,873		47,873
23	PROPERTY TAXES	295,813	(39,883)	255,930		255,930
24	INCOME TAXES	270,020	260,465	530,485	410,237	940,722
25	**TOTAL OPERATING EXPENSES**	$ 6,649,430	$ (242,081)	$ 6,407,349	$ 410,237	$ 6,817,587
26	**UTILITY OPERATING INCOME**	$ 797,270	$ 304,029	$ 1,101,299	$ 652,548	$ 1,753,848

REFERENCES:
COLUMN (A): CO. SCH. C-1
COLUMN (B): SCH. TJC-31
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): SCH. TJC-1, PAGE 1 OF 2
COLUMN (E): COLUMN (C) + COLUMN (D)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF OPERATING ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-31
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ. #1	(C) ADJ. #2	(D) ADJ. #3	(E) ADJ. #4	(F) ADJ. #5	(G) ADJ. #6	(H) ADJ. #7	(I) ADJ. #8	(J) ADJ. #9	(K) ADJ. #10	(L) ADJ. #11	(M) ADJ. #12	(N) RUCO ADJUSTED
	REVENUES - WATER:														
1	WATER REVENUES	$ 7,364,411	$ -	$ -	$ -	$ -	$ -	$ -	$ 61,949	$ -	$ -	$ -	$ -	$ -	$ 7,426,360
2	UNMETERED WATER REVENUES	-													
3	OTHER WATER REVENUES	82,289													82,289
4	TOTAL REVENUES	$ 7,446,700	$ -	$ -	$ -	$ -	$ -	$ -	$ 61,949	$ -	$ -	$ -	$ -	$ -	$ 7,508,649
	OPERATING EXPENSES:														
5	SALARIES AND WAGES	$ 969,244	$ -	$ -	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	969,244
6	PURCHASED WATER	831,656	-	-		-	(30,001)	-		-				-	801,655
7	PURCHASED POWER	602,982			-	-						12,149			615,131
8	CHEMICALS	127,457			-	-									127,457
9	REPAIRS AND MAINTENANCE	104,609						-		(43,217)					61,392
10	OFFICE SUPPLIES AND EXPENSE	19,800			-										19,800
11	OUTSIDE SERVICES	266,544	-					(71,000)					-		195,544
12	WATER TESTING	43,458	-	-	-								-		43,458
13	RENTS	-			-					-					-
14	TRANSPORTATION EXPENSES	70,430			-										70,430
15	INSURANCE - GENERAL LIABILITY	(1,294)			-										(1,294)
16	INSURANCE - HEALTH AND LIFE	-		-	-			-							-
17	REG. COMMISSION EXP. - RATE CA	144,871			-	(51,538)		-		-					93,333
18	MISCELLANEOUS EXPENSE	1,259,948	-	-	(123,366)								-		1,136,582
19	DEPRECIATION & AMORTIZATION E	1,608,019	(91,690)		-									-	1,516,329
20	AMORT. OF GAIN ON WELL	(76,000)			-									-	(76,000)
21	AMORT. OF CAP	64,000	-	-									(64,000)		-
22	TAXES OTHER THAN INCOME	47,873					-								47,873
23	PROPERTY TAXES	295,813		(39,883)											255,930
24	INCOME TAXES	270,020												260,465	530,485
25	TOTAL OPERATING EXPENSES	$ 6,649,430	$ (91,690)	$ (39,883)	$ (123,366)	$ (51,538)	$ (30,001)	$ (71,000)	$ -	$ (43,217)	$ -	$ 12,149	$ (64,000)	$ 260,465	$ 6,407,349
26	UTILITY OPERATING INCOME	$ 797,270	$ 91,690	$ 39,883	$ 123,366	$ 51,538	$ 30,001	$ 71,000	$ 61,949	$ 43,217	$ -	$ (12,149)	$ 64,000	$ (260,465)	$ 1,101,299
		10.71%													

ADJUSTMENT #:	REFERENCE:
1. Depreciation & Amortization Expense	Schedule TJC-32
2. Property Tax Expense	Schedule TJC-33
3. Miscellaneous Expense	Schedule TJC-34
4. Rate Case Expense	Schedule TJC-35
5. Purchased Water	Schedule TJC-36
6. Outside Services	Schedule TJC-37

ADJUSTMENT #:	REFERENCE:
7. Revenue Annualization	Schedule TJC-38, pages 1 thru 31
8. Remove Expensed Plant Items and Capitalize	Schedule TJC-39
9. Intentionally Left Blank	
10. Purchased Power	Schedule TJC-41
11. Remove CAP Amortization	Testimony of TJC
12. Income Taxes	Schedule TJC-43

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #1 - DEPRECIATION AND AMORTIZATION EXPENSE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-32
DIRECT TESTIMONY

LINE NO.	ACCT. NO.	PLANT ACCOUNT NAME	(A) ADJUSTED TEST YEAR BALANCE PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED BALANCE	(D) COMPONENT DEPRECIATION RATES	(E) RUCO RECOMMENDED DEPRECIATION EXPENSE	
1	301	Organization Cost	-	$ -	$ -	0.00%	$ -	
2	302	Franchise Cost and Other Intangible Plant	-	-	-	0.00%	-	
3	303	Land and Land Rights	305,920	(34,063)	271,857	0.00%	-	
4	304	Structures and Improvements	1,518,648	0	1,518,648	3.33%	50,571	
5	305	Collecting and Impounding Res.	6,548	0	6,548	2.50%	164	
6	306	Lake River and Other Intakes	-	-	-	2.50%	-	
7	307	Wells and Springs	332,065	(103,468)	228,597	3.33%	7,612	
8	308	Infiltration Galleries and Tunnels	-	-	-	6.67%	-	
9	309	Supply Mains	-	-	-	2.00%	-	
10	310	Power Generation Equipment	-	-	-	5.00%	-	
11	311	Electric Pumping Equipment	1,506,908	(23,294)	1,483,614	12.50%	185,452	
12	320	Water Treatment Equipment	7,763,500	(2,016,609)	5,746,891	3.33%	191,371	
13	330	Distribution Reservoirs & Standpipe	8,170,420	(1)	8,170,419	2.22%	181,383	
14	331	Transmission and Distribution Mains	17,450,634	0	17,450,634	2.00%	349,013	
15	333	Services	7,389,930	(0)	7,389,930	3.33%	246,085	
16	334	Meters	2,725,673	(3,556)	2,722,117	8.33%	226,752	
17	335	Hydrants	1,171,633	(1)	1,171,633	2.00%	23,433	
18	336	Backflow Prevention Devices	-	-	-	6.67%	-	
19	339	Other Plant and Miscellaneous Equipment	1,610,687	43,218	1,653,905	6.67%	110,315	
20	340	Office Furniture and Fixtures	270,359	(1)	270,358	6.67%	18,033	
21	341	Transportation Equipment	535,315	0	535,315	20.00%	107,063	
22	342	Stores Equipment	-	-	-	4.00%	-	
23	343	Tools and Work Equipment	149,365	0	149,365	5.00%	7,468	
24	344	Laboratory Equipment	-	-	-	10.00%	-	
25	345	Power Operated Equipment	-	-	-	5.00%	-	
26	346	Communications Equipment	39,105	(0)	39,105	10.00%	3,910	
27	347	Miscellaneous Equipment	106,542	0	106,542	10.00%	10,654	
28	348	Other Tangible Plant	-	34,063	34,063	0.00%	-	
29								
30		TOTAL DIRECT PLANT IN SERVICE	$ 51,053,253	$ (2,103,710)	$ 48,949,543		$ 1,719,280	
31								
32								
33				Correct for	RUCO			
34		**General Office Plant Allocated**	**Per Company**	**4 Factor Alloc.**	**Adjusted**			
35	301	Organization Cost	528	(67)	461	0.00%	-	
36	302	Other Intangible Plant	-	26,044 *	26,044	0.00%	-	
37	304	Structures and Improvements	186,270	(23,791)	162,479	3.33%	5,411	
38	311	Electric Pumping Equipment	-	(26)	(26)	12.50%	(3)	
39	339	Other Plant and Miscellaneous Equipment	27,201	(3,474)	23,727	3.33%	790	
40	340	Office Furniture and Fixtures	458,027	(69,481) *	388,546	6.67%	25,916	
41	341	Transportation Equipment	17,742	(2,266)	15,476	20.00%	-	Fully Depreciated
42	343	Tools and Work Equipment	13,021	(1,663)	11,358	5.00%	568	
43	344	Laboratory Equipment	130	(17)	114	10.00%	11	
44	345	Power Operated Equipment	8,001	(1,022)	6,979	5.00%	-	Fully Depreciated
45	346	Communications Equipment	5,315	(679)	4,636	10.00%	-	Fully Depreciated
46								
47		TOTAL GENERAL OFFICE PLANT ALLOCATION	716,236		639,794		$ 32,693	
48								
49		Less: Amortization of Contributions - Year End Bal.	$ 6,288,097			3.3588% 1	$ (211,205)	
50								
51		Total Depreciation Expense					$ 1,540,768	
52								
53		Test Year Depreciation Expense					$ 1,632,458	
54								
55		Increase (Decrease) in Depreciation Expense					$ (91,690)	
56								
57		Adjustment to Revenues and\or Expenses					$ (91,690)	

* Note: Column B, line 36 and 40 adjusts for both the 4 Factor Allocator (2.8%) and Removal of $159,087 and $392,121 of Post Test Year Plant in Account 303 and 340 respectively.
1 Amortization Rate approved in Commission Decision No. 68176.

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #2 - PROPERTY TAX EXPENSE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-33
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
1	REVENUES - 2004	$ 6,544,219	COMPANY SCHEDULE E-1
2	REVENUES - 2005	7,019,051	COMPANY SCHEDULE E-1
3	RUCO PROPOSED REVENUES	8,571,434	SCHEDULE TJC-30
4	TOTAL	$ 22,134,704	SUM LINES 1, 2, & 3
5	3 YEAR AVERAGE	$ 7,378,235	LINE 4/3 YEARS
6	MULTIPLIER FOR REVENUES (2 X LAST 3 YRS. AVERAGE REVENUE)	x 2	ADOR VALUATION FACTOR
7	REVENUES FOR FULL CASH VALUE	$ 14,756,470	LINE 5 X 2 (MULTIPLIER FOR REVENUES)
8	ADD: 10% OF CWIP BALANCE	$ -	COMPANY TRIAL BALANCE
9	LESS: NET BOOK VALUE OF VEHICLES	474,679	SCHEDULE TJC-6, PAGE 3 OF 3
10	FULL CASH VALUE	$ 14,281,791	LINE 7 + LINE 8 MINUS LINE 9
11	ASSESSMENT RATIO	23.0%	PER HOUSE BILL 2779
12	ASSESSED VALUE	$ 3,284,812	LINE 10 X LINE 11
13	PROPERTY TAX RATE	7.7913%	PER TAX BILLS
14	PROPERTY TAXES PAYABLE PER RUCO	$ 255,930	LINE 12 X LINE 13
15	PROPERTY TAXES PER COMPANY	295,813	PER COMPANY
16	RUCO ADJUSTMENT	$ (39,883)	LINE 14 MINUS LINE 15

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #2 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
1	REVENUES - 2004	$ 6,544,219	COMPANY SCHEDULE E-1
2	REVENUES - 2005	7,019,051	COMPANY SCHEDULE E-1
3	RUCO PROPOSED REVENUES	8,571,434	SCHEDULE TJC-30
4	TOTAL	$ 22,134,704	SUM LINES 1, 2, & 3
5	3 YEAR AVERAGE	$ 7,378,235	LINE 4/3 YEARS
6	MULTIPLIER FOR REVENUES (2 X LAST 3 YRS. AVERAGE REVENUE)	x 2	ADOR VALUATION FACTOR
7	REVENUES FOR FULL CASH VALUE	$ 14,756,470	LINE 5 X 2 (MULTIPLIER FOR REVENUES)
8	ADD: 10% OF CWIP BALANCE	$ -	COMPANY TRIAL BALANCE
9	LESS: NET BOOK VALUE OF VEHICLES	474,679	SCHEDULE TJC-6, PAGE 3 OF 3
10	FULL CASH VALUE	$ 14,281,791	LINE 7 + LINE 8 MINUS LINE 9
11	ASSESSMENT RATIO	23.0%	PER HOUSE BILL 2779
12	ASSESSED VALUE	$ 3,284,812	LINE 10 X LINE 11
13	PROPERTY TAX RATE	7.7913%	PER TAX BILLS
14	PROPERTY TAXES PAYABLE PER RUCO	$ 255,930	LINE 12 X LINE 13
15	PROPERTY TAXES PER COMPANY	295,813	PER COMPANY
16	RUCO ADJUSTMENT	$ (39,883)	LINE 14 MINUS LINE 15

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
17	REVENUES - 2004	$ 6,544,219	COMPANY SCHEDULE E-1
18	REVENUES - 2005	7,019,051	COMPANY SCHEDULE E-1
19	REVENUES - 2006	7,755,907	COMPANY SCHEDULE E-1
20	TOTAL	$ 21,319,177	SUM LINES 1, 2, & 3
21	3 YEAR AVERAGE	$ 7,106,392	LINE 4/3 YEARS
22	MULTIPLIER FOR REVENUES (2 X LAST 3 YRS. AVERAGE REVENUE)	x 2	ADOR VALUATION FACTOR
23	REVENUES FOR FULL CASH VALUE	$ 14,212,785	LINE 5 X 2 (MULTIPLIER FOR REVENUES)
24	ADD: 10% OF CWIP BALANCE	$ -	COMPANY TRIAL BALANCE
25	LESS: NET BOOK VALUE OF VEHICLES	474,679	SCHEDULE TJC-6, PAGE 3 OF 3
26	FULL CASH VALUE	$ 13,738,106	LINE 7 + LINE 8 MINUS LINE 9
27	ASSESSMENT RATIO	23.0%	PER HOUSE BILL 2779
28	ASSESSED VALUE	$ 3,159,764	LINE 10 X LINE 11
29	PROPERTY TAX RATE	7.7913%	PER TAX BILLS
30	PROPERTY TAXES PAYABLE PER RUCO	$ 246,187	LINE 12 X LINE 13
31	PROPERTY TAXES PER COMPANY	295,813	PER COMPANY
32	RUCO ADJUSTMENT	$ (49,626)	LINE 14 MINUS LINE 15
33	2008 PROPERTY TAX EXPENSE	$ 187,214	
34	PLUS: DIFFERENCE BETWEEN PROPOSED LEVEL OF REVENUE	9,743	
35	LINE 33 PLUS 34	$ 196,957	
36	PROPERTY TAX PER COMPANY	295,813	
37	RUCO ALTERNATIVE PROPERTY TAX EXPENSE ADJUSTMENT	$ (98,856)	

Chaparral City Water Company
TEST YEAR ENDED DECEMBER 31, 2006
ADJUSTMENTS TO REVENUES AND/OR EXPENSES
Adjustment Number 3

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-34
DIRECT TESTIMONY

Line No.		
1	To Normalize Miscellaneous Expense	
2		
3	Company Miscellaneous Expense - 2004	$ 989,392
4	Company Miscellaneous Expense - 2005	1,160,406
5	Company Miscellaneous Expense Test Year Adjusted - 2006	1,259,948
6		
7	Three-Year Average	$ 1,136,582
8		
9	Company Test Year Adjusted Expense	1,259,948
10		
11	Increase(decrease) Miscellaneous Expense	$ (123,366)
12		
13	Adjustment to Revenue and/or Expense	$ (123,366)

Chaparral City Water Company
TEST YEAR ENDED DECEMBER 31, 2006
ADJUSTMENTS TO REVENUES AND/OR EXPENSES
Adjustment Number 4

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-35
DIRECT TESTIMONY

Line No.		
1	Rate Case Expense	
2		
3	Estimated Rate Case Expense	$ 280,000
4	Unrecovered Rate Case Expense (Prior Case)[1]	$ -
5	Rate Case Expense	$ 280,000
6		
7	Estimated Amortization Period (in Years)	3.0
8		
9	Annual Rate Case Expense	$ 93,333
10		
11	Test Year Adjusted Rate Case Expense	$ 144,871
12		
13	Increase(decrease) Rate Case Expense	$ (51,538)
14		
15	Adjustment to Revenue and/or Expense	$ (51,538)
16		
17		
18	[1] Computation of Unrecovered Rate Case Amount	
19	Rate Case Expense	$ 285,000 [1]
20	Amortization Period (yrs)	4 [2]
21	Annual Amortization amount	$ 71,250 [3] = [1] divied by [2]
22	Amortization (years)	1.83 [4]
23	Total Amortization	$ 130,388 [5] = [4] times [3]
24	Remaining Unrecovered Rate Case Expense	$ 154,613 [6] = [1] minus [5]

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustment to Revenues and Expenses
Adjustment Number 5

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-36
DIRECT TESTIMONY

Line No.				
1	Purchased Water			
2				
3	Central Arizona Project water allocation 2006 (acre feet)	6,978		
4	Additional CAP allocation (acre feet)	-		
5	Central Arizona Project water allocation 2006 (acre feet)	6,978		
6	2008 capital cost per acre foot (take or pay)	$ 21		
7	Total Capital Cost		$ 146,538	
8				
9	Central Arizona Project water delivered 2006 (acre feet)	6,978		
10	Excess CAP water delivered 2006 (acre feet)	260		
11	Additional gallons from annualization in acre feet	(591)		
12	Total CAP water (acre feet)	6,647		
13	2008 delivery cost per acre foot	$ 92		
14	Total M&I Cost		$ 611,567	
15				
16	Total CAP purchased water			$ 758,105
17				
18	Ground Water pumped 2006 in acre feet	260		
19	Excess Capacity percentage	67%		
20	Total projected gallons pumped		174	
21	Central Arizona Ground Water Replenishment District Assessment Fee per acre foot		$ 250	
22				43,550
23				
24	RUCO Total Purchased Water Cost			$ 801,655
25	Company Total Purchased Water Cost			831,656
26	Increase (decrease)			$ (30,001)
27				
28				
29	Adjustment to Revenue and/or Expense			$ (30,001)
30				

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustment to Revenues and Expenses
Adjustment Number 6

Outside Services Expense

1	Weekly Charge	$ 3,500	
2	January 1, 2006 thru May 22, 2006	20.28571	Number of Weeks
3			
4	Increase(decrease) Miscellaneous Expense	$(71,000)	
5			
6	Adjustment to Revenue and/or Expense	$(71,000)	
7			
8			
9			

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustment to Revenues and Expenses
Adjustment Number 7

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-38

Line No.	RUCO Revenue Annualization	Additional Dollars	Additional Gallons to Be Pumped (In 1000's)	Additional Customers
1				
2				
3	**Residential:**			
4	3/4 Inch	$ 2,317	639	61
5	1 Inch	65,260	13,151	1,415
6	1.5 Inch	860	215	7
7	2 Inch	253	72	1
8	3 Inch	1,790	421	5
9				
10				
11	**Commercial:**			
12	3/4 Inch	(50)	(14)	(1)
13	1 Inch	2,647	704	38
14	1.5 Inch	1,934	551	12
15	2 Inch	(778)	(222)	(3)
16	3 Inch	(206)	(24)	(1)
17	4 Inch	-	-	-
18				
19				
20	**Industrial:**			
21	3/4 Inch	-	-	-
22	1 Inch	-	-	-
23	1.5 Inch	-	-	-
24				
25				
26	**Irrigation:**			
27	3/4 Inch	792	324	21
28	1 Inch	6,585	3,086	78
29	1.5 Inch	1,901	869	12
30	2 Inch	(160)	(56)	(1)
31	4(a) Inch	(33,206)	(21,286)	(2)
32	4(b) Inch	(68,063)	(43,630)	-
33	6(a) Inch	(6,229)	(3,993)	-
34	6(b) Inch	(226,077)	(144,921)	-
35				
36				
37	**Fire Hydrant (Standpipe):**			
38	3 Inch	182	14	1
39	4 Inch	-	-	-
40				
41				
42	**Construction:**			
43	3/4 Inch	-	-	-
44	1 Inch	(329)	(80)	(9)
45	2 Inch	-	-	-
46	3 Inch	3,319	1,753	4
47	4 Inch	-	-	-
48				
49				
50	**Fire Sprinkler:**			
51	3/4 Inch	-	-	-
52	1 Inch	-	-	-
53	1.5 Inch	-	-	-
54				
55				
56			(192,426)	1,638
57	RUCO Revenue Annualization	(247,258)		
58				
59	Company Revenue Annualization	(309,207)		
60				
61	RUCO Revenue Annualization Adjustment	$ 61,949		

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH RESIDENTIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	8,373	8,373	8,373	8,373	8,373	8,373	8,373	8,373	8,373	8,373	8,373	8,373	
2	Actual Customers	8,380	8,370	8,383	8,390	8,380	8,364	8,353	8,362	8,350	8,355	8,355	8,373	
3	Increase in Number of Customers	(7)	3	(10)	(17)	(7)	9	20	11	23	18	18	0	61
4	Average Revenue for the Month	$ 31.10	$ 29.04	$ 28.44	$ 30.82	$ 30.58	$ 37.09	$ 39.14	$ 33.41	$ 35.99	$ 31.66	$ 32.67	$ 30.44	
5	Increase in Revenues	$ (218)	$ 87	$ (284)	$ (524)	$ (214)	$ 334	$ 783	$ 367	$ 828	$ 570	$ 588	0	$ 2,317
6	Total Increase in Revenue per RUCO	2,317												
7	Increase In Revenue per Company	2,317												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	7,943	7,128	6,887	7,834	7,739	10,099	10,774	8,861	9,737	8,168	8,566	7,684	
10	Increase In Customers	(7)	3	(10)	(17)	(7)	9	20	11	23	18	18	0	
11	Increase In Gallons	(55,604)	21,385	(68,870)	(133,173)	(54,174)	90,894	215,479	97,466	223,956	147,029	154,188	0	638,575

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH RESIDENTIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	4,118	4,118	4,118	4,118	4,118	4,118	4,118	4,118	4,118	4,118	4,118	4,118	
2	Actual Customers	3,841	3,860	3,910	3,895	3,940	4,028	4,057	4,064	4,080	4,117	4,091	4,118	
3	Increase in Number of Customers	277	258	208	223	178	90	61	54	38	1	27	0	1,415
4	Average Revenue for the Month	$ 45.93	$ 43.43	$ 42.61	$ 45.87	$ 45.80	$ 52.16	$ 54.23	$ 49.86	$ 53.76	$ 48.12	$ 48.22	$ 46.99	
5	Increase in Revenues	$ 12,723	$ 11,205	$ 8,864	$ 10,229	$ 8,152	$ 4,694	$ 3,308	$ 2,692	$ 2,043	$ 48	$ 1,302	0	$ 65,260
6	*Total Increase in Revenue per RUCO*	65,260												
7	Increase In Revenue per Company	65,260												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	9,219	8,226	7,903	9,194	9,165	11,690	12,514	10,777	12,327	10,089	10,125	9,639	
10	Increase In Customers	277	258	208	223	178	90	61	54	38	1	27	0	
11	Increase In Gallons	2,553,562	2,122,337	1,643,722	2,050,272	1,631,380	1,052,111	763,324	581,972	468,413	10,089	273,385	0	13,150,567

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1.5 INCH RESIDENTIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	22	22	22	22	22	22	22	22	22	22	22	22	
2	Actual Customers	20	20	21	21	21	21	22	23	22	22	22	22	
3	Increase in Number of Customers	2	2	1	1	1	1	-	(1)	-	-	-	0	7
4	Average Revenue for the Month	$ 137.51	$ 114.83	$ 120.58	$ 125.86	$ 119.32	$ 112.48	$ 129.19	$ 122.81	$ 132.63	$ 112.98	$ 111.38	$ 107.77	
5	Increase in Revenues	$ 275	$ 230	$ 121	$ 126	$ 119	$ 112	$ -	$ (123)	$ -	$ -	$ -	0	$ 860
6	Total Increase in Revenue per RUCO	860												
7	Increase In Revenue per Company	860												
8	Total Revenue Adjustment	0												
9	Gallons Sold per Average Customer	36,550	27,550	29,834	31,929	29,334	26,620	33,250	30,718	34,614	26,819	26,182	24,750	
10	Increase In Customers	2	2	1	1	1	1	-	(1)	-	-	-	0	
11	Increase In Gallons	73,101	55,101	29,834	31,929	29,334	26,620	-	(30,718)	-	-	-	0	215,200

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
2 INCH RESIDENTIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	39	39	39	39	39	39	39	39	39	39	39	39	
2	Actual Customers	38	39	39	39	39	39	39	39	39	39	39	39	
3	Increase in Number of Customers	1	-	-	-	-	-	-	-	-	-	-	0	1
4	Average Revenue for the Month	$ 253.25	$ 216.80	$ 216.25	$ 240.19	$ 251.05	$ 289.04	$ 320.32	$ 291.92	$ 282.84	$ 187.47	$ 297.89	$ 234.12	
5	Increase in Revenues	$ 253	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ 253
6	Total Increase in Revenue per RUCO	253												
7	Increase In Revenue per Company	253												
8	Total Revenue Adjustment	0												
9	Gallons Sold per Average Customer	71,527	57,065	56,847	66,347	70,654	85,731	98,141	86,872	83,270	45,424	89,244	63,936	
10	Increase In Customers	1	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	71,527	-	-	-	-	-	-	-	-	-	-	0	71,527

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3 INCH RESIDENTIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	3	3	3	3	3	3	3	3	3	3	3	3	
2	Actual Customers	3	2	2	2	2	3	2	3	3	3	3	3	
3	Increase in Number of Customers	-	1	1	1	1	-	1	-	-	-	-	0	5
4	Average Revenue for the Month	$ 269.90	$ 307.28	$ 336.26	$ 365.24	$ 363.98	$ 334.16	$ 417.53	$ 289.22	$ 332.48	$ 304.76	$ 335.84	$ 277.46	
5	Increase in Revenues	$ -	$ 307	$ 336	$ 365	$ 364	$ -	$ 418	$ -	$ -	$ -	$ -	0	$ 1,790
6	Total Increase in Revenue per RUCO	1,790												
7	Increase In Revenue per Company	1,790												
8	Total Revenue Adjustment	0												
9	Gallons Sold per Average Customer	49,167	64,001	75,501	87,001	86,501	74,667	107,750	56,834	74,000	63,000	75,333	52,167	
10	Increase In Customers	-	1	1	1	1	-	1	-	-	-	-	0	
11	Increase In Gallons	-	64,001	75,501	87,001	86,501	-	107,750	-	-	-	-	0	420,752

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	115	115	115	115	115	115	115	115	115	115	115	115	
2	Actual Customers	116	116	114	115	113	114	115	115	115	116	117	115	
3	Increase in Number of Customers	(1)	(1)	1	-	2	1	-	-	-	(1)	(2)	0	(1)
4	Average Revenue for the Month	$ 48.41	$ 42.45	$ 42.53	$ 45.71	$ 44.38	$ 52.16	$ 57.72	$ 49.68	$ 52.52	$ 44.52	$ 49.13	$ 34.73	
5	Increase in Revenues	$ (48)	$ (42)	$ 43	$ -	$ 89	$ 52	$ -	$ -	$ -	$ (45)	$ (98)	0	$ (50)
6	Total Decrease in Revenue per RUCO	(50)												
7	Decrease In Revenue per Company	(50)												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	13,005	11,035	11,062	12,113	11,673	14,242	16,074	13,422	14,361	11,720	13,240	8,383	
10	Increase In Customers	(1)	(1)	1	-	2	1	-	-	-	(1)	(2)	0	
11	Increase In Gallons	(13,005)	(11,035)	11,062	-	23,346	14,242	-	-	-	(11,720)	(26,479)	0	(13,590)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch Irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	117	117	117	117	117	117	117	117	117	117	117	117	
2	Actual Customers	112	113	112	112	112	113	114	113	117	114	117	117	
3	Increase in Number of Customers	5	4	5	5	5	4	3	4	-	3	-	0	38
4	Average Revenue for the Month	$ 58.36	$ 66.23	$ 63.61	$ 69.71	$ 68.26	$ 91.36	$ 92.10	$ 66.40	$ 70.17	$ 58.27	$ 59.66	$ 53.16	
5	Increase in Revenues	$ 292	$ 265	$ 318	$ 349	$ 341	$ 365	$ 276	$ 266	$ -	$ 175	$ -	0	$ 2,647
6	Total Increase in Revenue per RUCO	2,647												
7	Increase In Revenue per Company	2,647												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	14,152	17,275	16,233	18,657	18,081	26,700	26,943	17,341	18,838	14,114	14,667	12,086	
10	Increase In Customers	5	4	5	5	5	4	3	4	-	3	-	0	
11	Increase In Gallons	70,761	69,099	81,163	93,283	90,404	106,798	80,830	69,365	-	42,343	-	0	704,047

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1.5 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	67	67	67	67	67	67	67	67	67	67	67	67	
2	Actual Customers	65	65	65	66	66	65	66	66	67	67	67	67	
3	Increase in Number of Customers	2	2	2	1	1	2	1	1	-	-	-	0	12
4	Average Revenue for the Month	$ 154.90	$ 150.64	$ 136.31	$ 147.52	$ 147.67	$ 185.11	$ 198.12	$ 187.15	$ 183.29	$ 163.48	$ 161.57	$ 172.02	
5	Increase in Revenues	$ 310	$ 301	$ 273	$ 148	$ 148	$ 370	$ 198	$ 187	$ -	$ -	$ -	0	$ 1,934
6	Total Increase in Revenue per RUCO	1,934												
7	Increase In Revenue per Company	1,934												
8	Total Revenue Adjustment	0												
9	Gallons Sold per Average Customer	43,454	41,762	36,077	40,523	40,584	55,439	60,500	56,250	54,717	46,859	46,097	50,247	
10	Increase In Customers	2	2	2	1	1	2	1	1	-	-	-	0	
11	Increase In Gallons	86,909	83,524	72,155	40,523	40,584	110,878	60,500	56,250	-	-	-	0	551,322

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
2 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	71	71	71	71	71	71	71	71	71	71	71	71	
2	Actual Customers	71	71	71	71	71	71	72	72	72	71	71	71	
3	Increase in Number of Customers	-	-	-	-	-	-	(1)	(1)	(1)	-	-	0	(3)
4	Average Revenue for the Month	$ 223.05	$ 218.06	$ 217.63	$ 236.71	$ 251.14	$ 294.48	$ 267.22	$ 244.62	$ 266.60	$ 247.87	$ 225.66	$ 250.45	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ (267)	$ (245)	$ (267)	$ -	$ -	0	$ (778)
6	Total Decrease in Revenue per RUCO	(778)												
7	Decrease In Revenue per Company	(778)												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	59,543	57,564	57,395	64,965	70,690	87,888	77,070	68,105	76,827	69,395	60,578	70,416	
10	Increase In Customers	-	-	-	-	-	-	(1)	(1)	(1)	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	(77,070)	(68,105)	(76,827)	-	-	0	(222,001)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #1 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	5	5	5	5	5	5	5	5	5	5	5	5	
2	Actual Customers	5	5	6	5	5	5	5	5	5	5	5	5	
3	Increase in Number of Customers	-	-	(1)	-	-	-	-	-	-	-	-	0	(1)
4	Average Revenue for the Month	$ 203.21	$ 240.50	$ 206.06	$ 239.75	$ 243.27	$ 217.32	$ 245.79	$ 281.58	$ 280.82	$ 219.84	$ 211.52	$ 212.53	
5	Increase in Revenues	$ -	$ -	$ (206)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ (206)
6	Total Increase in Revenue per RUCO	(206)												
7	Increase In Revenue per Company	(206)												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	22,701	37,501	23,834	37,200	38,600	28,300	39,600	53,800	53,500	29,300	26,000	26,400	
10	Increase In Customers	-	-	(1)	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	(23,834)	-	-	-	-	-	-	-	-	0	(23,834)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
4 INCH COMMERCIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	4	4	4	4	4	4	4	4	4	4	4	4	
2	Actual Customers	4	4	4	4	4	4	4	4	4	4	4	4	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 598.39	$ 642.49	$ 679.66	$ 683.44	$ 794.63	$ 830.86	$ 824.87	$ 880.63	$ 411.91	$ 787.39	$ 626.42	$ 592.40	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	147,375	164,875	179,625	181,125	225,250	239,625	237,250	259,375	73,375	222,375	158,500	145,000	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH INDUSTRIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	1	1	1	1	1	1	1	1	1	1	1	1	
2	Actual Customers	1	1	1	1	1	1	1	1	1	1	1	1	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 27.46	$ 19.90	$ 19.90	$ 32.50	$ 19.90	$ 59.52	$ 32.50	$ 19.90	$ 16.12	$ 17.80	$ 24.94	$ 13.60	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	6,501	3,501	3,501	8,501	3,501	17,501	8,501	3,501	1,501	2,501	5,501	-	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH INDUSTRIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	1	1	1	1	1	1	1	1	1	1	1	1	
2	Actual Customers	1	1	1	1	1	1	1	1	1	1	1	1	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	$ 22.70	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	-	-	-	-	-	-	-	-	-	-	-	-	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1.5 INCH INDUSTRIAL

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	1	1	1	1	1	1	1	1	1	1	1	1	
2	Actual Customers	-	-	-	-	-	-	-	1	1	1	1	1	
3	Increase in Number of Customers	1	1	1	1	1	1	1	-	-	-	-	0	7
4	Average Revenue for the Month	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	$ 45.40	$ 144.94	$ 46.66	$ 45.40	$ 45.40	
5	Increase in Revenues	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	$ -	$ -	$ -	$ -	0	#DIV/0!
6	Total Increase in Revenue per RUCO	#DIV/0!												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	#DIV/0!												
9	Gallons Sold per Average Customer	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-	39,501	501	-	-	
10	Increase In Customers	1	1	1	1	1	1	1	-	-	-	-	0	
11	Increase In Gallons	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	-	-	-	-	0	#DIV/0!

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	147	147	147	147	147	147	147	147	147	147	147	147	
2	Actual Customers	144	144	144	144	144	145	145	146	146	147	147	147	
3	Increase in Number of Customers	3	3	3	3	3	2	2	1	1	-	-	0	21
4	Average Revenue for the Month	$ 37.16	$ 33.93	$ 32.14	$ 33.03	$ 34.04	$ 40.61	$ 52.33	$ 45.61	$ 49.16	$ 42.35	$ 40.33	$ 35.44	
5	Increase in Revenues	$ 111	$ 102	$ 96	$ 99	$ 102	$ 81	$ 105	$ 46	$ 49	$ -	$ -	0	$ 792
6	Total Increase in Revenue per RUCO	792												
7	Increase In Revenue per Company	792												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	15,101	13,032	11,882	12,455	13,105	17,314	24,828	20,521	22,795	18,429	17,136	14,000	
10	Increase In Customers	3	3	3	3	3	2	2	1	1	-	-	0	
11	Increase In Gallons	45,303	39,095	35,647	37,366	39,314	34,628	49,656	20,521	22,795	-	-	0	324,325

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	176	176	176	176	176	176	176	176	176	176	176	176	
2	Actual Customers	166	166	169	167	167	167	167	169	171	173	176	176	
3	Increase in Number of Customers	10	10	7	9	9	9	9	7	5	3	-	0	78
4	Average Revenue for the Month	$ 81.05	$ 68.21	$ 65.06	$ 66.65	$ 69.18	$ 88.27	$ 110.81	$ 118.29	$ 102.80	$ 93.47	$ 98.40	$ 90.81	
5	Increase in Revenues	$ 811	$ 682	$ 455	$ 600	$ 623	$ 794	$ 997	$ 828	$ 514	$ 280	$ -	0	$ 6,585
6	Total Increase in Revenue per RUCO	6,585												
7	Increase In Revenue per Company	6,585												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	37,404	29,175	27,151	28,171	29,797	42,033	56,479	61,278	51,348	45,365	48,529	43,659	
10	Increase In Customers	10	10	7	9	9	9	9	7	5	3	-	0	
11	Increase In Gallons	374,040	291,751	190,059	253,539	268,171	378,300	508,315	428,949	256,742	136,094	-	0	3,085,959

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1.5 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	69	69	69	69	69	69	69	69	69	69	69	69	
2	Actual Customers	66	66	71	67	67	67	68	68	69	69	69	69	
3	Increase in Number of Customers	3	3	(2)	2	2	2	1	1	-	-	-	0	12
4	Average Revenue for the Month	$ 143.74	$ 116.52	$ 130.08	$ 159.46	$ 145.59	$ 143.38	$ 308.96	$ 174.49	$ 165.27	$ 148.26	$ 206.95	$ 127.05	
5	Increase in Revenues	$ 431	$ 350	$ (260)	$ 319	$ 291	$ 287	$ 309	$ 174	$ -	$ -	$ -	0	$ 1,901
6	Total Increase in Revenue per RUCO	1,901												
7	Increase In Revenue per Company	1,901												
8	Total Revenue Adjustment	(0)												
9	Gallons Sold per Average Customer	63,038	45,591	54,282	73,112	64,224	62,806	168,949	82,750	76,841	65,935	103,558	52,341	
10	Increase In Customers	3	3	(2)	2	2	2	1	1	-	-	-	0	
11	Increase In Gallons	189,115	136,774	(108,564)	146,225	128,448	125,613	168,949	82,750	-	-	-	0	869,309

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
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CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
2 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	52	52	52	52	52	52	52	52	52	52	52	52	
2	Actual Customers	51	52	54	52	52	52	52	52	52	52	52	52	
3	Increase in Number of Customers	1	-	(2)	-	-	-	-	-	-	-	-	0	(1)
4	Average Revenue for the Month	$ 222.88	$ 186.70	$ 191.52	$ 213.36	$ 231.57	$ 304.44	$ 400.06	$ 303.73	$ 319.87	$ 252.70	$ 250.99	$ 234.25	
5	Increase in Revenues	$ 223	$ -	$ (383)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ (160)
6	Total Increase in Revenue per RUCO	(160)												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	(160)												
9	Gallons Sold per Average Customer	96,079	72,885	75,973	89,971	101,644	148,356	209,654	147,904	158,250	115,193	114,096	103,366	
10	Increase In Customers	1	-	(2)	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	96,079	-	(151,945)	-	-	-	-	-	-	-	-	0	(55,866)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
4 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	4	4	4	4	4	4	4	4	4	4	4	4	
2	Actual Customers	5	4	5	4	4	4	4	4	4	4	4	4	
3	Increase in Number of Customers	(1)	-	(1)	-	-	-	-	-	-	-	-	0	(2)
4	Average Revenue for the Month	$ 425.59	$ 425.90	$ 11,486.14	$1,796.17	$3,127.04	$ 10,744.52	$ 4,122.91	$ 643.91	$ 580.93	$ 445.99	$ 742.78	$ 672.58	
5	Increase in Revenues	$ (426)	$ -	$ (11,486)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ (11,912)
6	Total Increase in Revenue per RUCO	(11,912)												
7	Increase In Revenue per Company	(11,912)												
8	Total Revenue Adjustment	0												
9	Gallons Sold per Average Customer	127,300	127,500	7,217,400	1,005,875	1,859,000	6,742,000	2,497,375	267,250	226,875	140,375	330,625	285,625	
10	Increase In Customers	(1)	-	(1)	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	(127,300)	-	(7,217,400)	-	-	-	-	-	-	-	-	0	(7,344,700)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

Chaparral City Water Company
Test Year Ended December 31, 2006
Revenue Annualization
4 Inch Irrigation Meters

Line No.

1 Firerock Canyon Golf Course
2 Account: 6018551-9

	Month	2006 Actual Usage	2006 Amount Billed Current Rates	2006 Amount Billed Proposed Rates	2007 Usage		Projected Amount Billed Current Rates	Projected Amount Billed Proposed Rates
7	Jan.	-	$ 227.00	$ 309.74	-	Actual	$ 227.00	$ 309.74
8	Feb.	174,000	498.44	907.95	-	Actual	227.00	309.74
9	Mar.	4,052,000	6,548.12	14,240.52	-	Actual	227.00	309.74
10	Apr.	1,000	228.56	313.18	-	Actual	227.00	309.74
11	May	1,955,000	3,276.80	7,031.03	-	Actual	227.00	309.74
12	Jun.	13,658,000	21,533.48	47,265.94	-	Actual	227.00	309.74
13	Jul.	3,388,000	5,512.28	11,957.68	-	Actual	227.00	309.74
14	Aug.	1,000	228.56	313.18	-	Actual	227.00	309.74
15	Sep.	-	227.00	309.74	-	Actual	227.00	309.74
16	Oct.	-	227.00	309.74	1,000	Actual	228.56	313.18
17	Nov.	-	227.00	309.74	2,371,000	Actual	3,925.76	8,461.24
18	Dec.	429,000	896.24	1,784.64	-	Actual	227.00	309.74
20	Total	23,658,000	$ 39,630.48	$ 85,053.08	2,372,000		$ 6,424.32	$ 11,871.82
21		[1]	[2]	[3]	[4]		[5]	[6]

23 **RUCO Annualization:**

24	Annualization at present rates [5] - [2]	$ (33,206.16)
25	Annualization at proposed rates [6] - [3]	$ (73,181.27)
26	Additional Gallons (in 1,000's) [4] - [1] /1000	(21,286)

29 **Company Annualization:**

30	Annualization at present rates	$ (36,906.48)
31	Annualization at Company proposed rates	$ (81,418.94)
32	Additional Gallons (in 1,000's)	(23,658)

35 RUCO's Adjustment at Present Rates for Actual Gallonage Usage $ 3,700.32

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

Chaparral City Water Company
Test Year Ended December 31, 2006
Revenue Annualization
4 Inch Irrigation Meters

Firerock Canyon Golf Course
Account: 6018550-1

Month	2006 Actual Usage	2006 Amount Billed Current Rates	2006 Amount Billed Proposed Rates	2007 Usage		Projected Amount Billed Current Rates	Projected Amount Billed Proposed Rates
Jan.	-	$ 227.00	$ 309.74	-	Actual	$ 227.00	$ 309.74
Feb.	17,000	253.52	368.19	-	Actual	227.00	309.74
Mar.	31,614,000	49,544.84	108,998.67	-	Actual	227.00	309.74
Apr.	-	227.00	309.74	-	Actual	227.00	309.74
May	4,671,000	7,513.76	16,368.64	430,000	Actual	897.80	1,788.08
Jun.	11,344,000	17,923.64	39,310.41	1,372,000	Actual	2,367.32	5,026.68
Jul.	4,536,000	7,303.16	15,904.51	2,440,000	Actual	4,033.40	8,698.46
Aug.	-	227.00	309.74	-	Actual	227.00	309.74
Sep.	-	227.00	309.74	-	Actual	227.00	309.74
Oct.	-	227.00	309.74	-	Actual	227.00	309.74
Nov.	597,000	1,158.32	2,362.23	5,288,000	Actual	8,476.28	18,489.88
Dec.	381,000	821.36	1,619.62	-	Actual	227.00	1,619.62
Total	53,160,000	$ 85,653.60	$ 186,480.96	9,530,000		$ 17,590.80	$ 37,790.90
	[1]	[2]	[3]	[4]		[5]	[6]

RUCO Annualization:

Annualization at present rates [5] - [2]	$	(68,062.80)
Annualization at proposed rates [6] - [3]	$	(148,690.06)
Additional Gallons (in 1,000's) [4] - [1] /1000		(43,630)

Company Annualization:

Annualization at present rates	$	(74,786.40)
Annualization at Company proposed rates	$	(164,817.72)
Additional Gallons (in 1,000's)		(46,122)

RUCO's Adjustment at Present Rates for Actual Gallonage Usage $ 6,723.60

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
6 INCH IRRIGATION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	3	3	3	3	3	3	3	3	3	3	3	3	
2	Actual Customers	3	3	3	3	3	3	3	3	3	3	3	3	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$7,665.36	$8,113.60	$6,164.12	$12,568.96	$15,654.12	$ 18,128.28	$13,252.76	$6,027.36	$1,556.66	$2,558.44	$13,511.20	$2,290.64	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	4,622,667	4,910,000	3,660,333	7,766,000	9,743,667	11,329,667	8,204,333	3,572,667	706,834	1,349,000	8,370,000	1,177,333	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

Chaparral City Water Company
Test Year Ended December 31, 2006
Revenue Annualization
6 Inch Irrigation Meters

Line No.

1 Sunridge Canyon G.C.
2 Account: 6008478-7

	Month	2006 Actual Usage	2006 Amount Billed Current Rates	2006 Amount Billed Proposed Rates	2007 Usage		Projected Amount Billed Current Rates	Projected Amount Billed Proposed Rates
7	Jan.	-	$ 454.00	$ 619.47	256,000	Actual	$ 853.36	$ 1,499.60
8	Feb.	505,000	1,241.80	2,355.66	-	Actual	454.00	619.47
9	Mar.	-	454.00	619.47	-	Actual	454.00	619.47
10	Apr.	1,312,000	2,500.72	5,130.13	-	Actual	454.00	619.47
11	May	3,612,000	6,088.72	13,037.53	1,000	Actual	455.56	622.91
12	Jun.	568,000	1,340.08	2,572.25	-	Actual	454.00	619.47
13	Jul.	1,173,000	2,283.88	4,652.24	-	Actual	454.00	619.47
14	Aug.	-	454.00	619.47	-	Actual	454.00	619.47
15	Sep.	-	454.00	619.47	-	Actual	454.00	619.47
16	Oct.	1,503,000	2,798.68	5,786.78	258,000	Actual	856.48	1,506.47
17	Nov.	1,249,000	2,402.44	4,913.53	5,414,000	Actual	8,899.84	19,232.80
18	Dec.	-	454.00	619.47	-	Actual	454.00	619.47
19								
20	Total	9,922,000	$ 20,926.32	$ 41,545.48	5,929,000		$ 14,697.24	$ 27,817.54
21		[1]	[2]	[3]	[4]		[5]	[6]

22

23 **RUCO Annualization:**
24 Revenue Annualization at present rates [5] - [2] $ (6,229.08)
25 Revenue Annualization at proposed rates [6] - [3] $ (13,727.93)
26 Additional Gallons (in 1,000's) [4] - [1] /1000 (3,993)
27
28

29 **Company Annualization:**
30 Annualization at present rates $ (15,144.87)
31 Annualization at Company proposed rates $ (32,805.35)
32 Additional Gallons (in 1,000's) (9,481.00)
33
34

35 RUCO's Adjustment at Present Rates for Actual Gallonage Usage $ 8,915.79

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

Chaparral City Water Company
Test Year Ended December 31, 2006
Revenue Annualization
6 Inch Irrigation Meters

Line No.

1 Eagle Mountain G.C.
2 Account: 60015014-1

Line No.	Month	2006 Actual Usage	2006 Amount Billed Current Rates	2006 Amount Billed Proposed Rates	2007 Usage		Projected Amount Billed Current Rates	Projected Amount Billed Proposed Rates
7	Jan.	13,051,000	$ 20,813.56	$ 45,488.81	-	Actual	$ 454.00	$ 619.47
8	Feb.	13,621,000	21,702.76	47,448.47	-	Actual	454.00	619.47
9	Mar.	10,783,000	17,275.48	37,691.42	-	Actual	454.00	619.47
10	Apr.	21,261,000	33,621.16	73,714.79	-	Actual	454.00	619.47
11	May	24,574,000	38,789.44	85,104.88	-	Actual	454.00	619.47
12	Jun.	31,629,000	49,795.24	109,359.97	192,000	Actual	753.52	1,279.57
13	Jul.	21,573,000	34,107.88	74,787.44	344,000	Actual	990.64	1,802.14
14	Aug.	9,097,000	14,645.32	31,894.96	11,018,000	Actual	17,642.08	38,499.35
15	Sep.	84,000	585.04	908.26	10,315,000	Actual	16,545.40	36,082.44
16	Oct.	1,119,000	2,199.64	4,466.59	4,432,000	Actual	7,367.92	15,856.69
17	Nov.	21,785,000	34,438.60	75,516.30	-	Actual	454.00	619.47
18	Dec.	2,645,000	4,580.20	9,712.98	-	Actual	454.00	619.47
20	Total	171,222,000	$ 272,554.32	$ 596,094.88	26,301,000		$ 46,477.56	$ 97,856.48
21		[1]	[2]	[3]	[4]		[5]	[6]

23 **RUCO Annualization:**

24	Revenue Annualization at present rates [5] - [2]	$ (226,076.76)
25	Revenue Annualization at proposed rates [6] - [3]	$ (498,238.40)
26	Additional Gallons (in 1,000's) [4] - [1] /1000	(144,921)

29 **Company Annualization:**

30	Annualization at present rates	$ (265,672.90)
31	Annualization at Company proposed rates	$ (585,502.21)
32	Additional Gallons (in 1,000's)	(170,303.00)

35 RUCO's Adjustment at Present Rates for Actual Gallonage Usage $ 39,596.14

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3 INCH FIRE HYDRANT (STANDPIPE)

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	26	26	26	26	26	26	26	26	26	26	26	26	
2	Actual Customers	25	23	20	28	29	25	22	27	30	27	29	26	
3	Increase in Number of Customers	1	3	6	(2)	(3)	1	4	(1)	(4)	(1)	(3)	0	1
4	Average Revenue for the Month	$ 212.73	$ 199.69	$ 214.80	$ 193.61	$ 228.12	$ 192.62	$ 203.33	$ 233.73	$ 198.88	$ 199.06	$ 208.04	$ 256.15	
5	Increase in Revenues	$ 213	$ 599	$ 1,289	$ (387)	$ (684)	$ 193	$ 813	$ (234)	$ (796)	$ (199)	$ (624)	0	$ 182
6	Total Increase in Revenue per RUCO	182												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	182												
9	Gallons Sold per Average Customer	26,480	21,305	27,300	18,893	32,587	18,500	22,750	34,815	20,984	21,056	24,621	43,712	
10	Increase In Customers	1	3	6	(2)	(3)	1	4	(1)	(4)	(1)	(3)	0	
11	Increase In Gallons	26,480	63,914	163,802	(37,786)	(97,760)	18,500	91,002	(34,815)	(83,935)	(21,056)	(73,863)	0	14,484

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
4 INCH FIRE HYDRANT (STANDPIPE)

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	1	1	1	1	1	1	1	1	1	1	1	1	
2	Actual Customers	-	-	-	-	-	-	1	1	1	1	1	1	
3	Increase in Number of Customers	1	1	1	1	1	1	-	-	-	-	-	0	6
4	Average Revenue for the Month	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	$ 238.34	$ 1,902.80	$ 1,975.88	$1,623.08	$1,660.88	$ 1,776.80	
5	Increase in Revenues	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	$ -	$ -	$ -	$ -	$ -	0	#DIV/0!
6	Total Increase in Revenue per RUCO	#DIV/0!												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	#DIV/0!												
9	Gallons Sold per Average Customer	-	-	-	-	-	-	4,501	665,000	694,000	554,000	569,000	615,000	
10	Increase In Customers	1	1	1	1	1	1	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH CONSTRUCTION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	1	1	1	1	1	1	1	1	1	1	1	1	
2	Actual Customers	1	1	1	1	1	1	1	1	1	1	1	1	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 14.38	$ 13.60	$ 22.18	$ 20.62	$ 14.38	$ 13.60	$ 13.60	$ 13.60	$ 13.60	$ 13.60	$ 14.38	$ 13.60	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	501	-	5,501	4,501	501	-	-	-	-	-	501	-	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH CONSTRUCTION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	2	2	2	2	2	2	2	2	2	2	2	2	
2	Actual Customers	2	5	3	3	3	3	3	3	2	2	2	2	
3	Increase in Number of Customers	-	(3)	(1)	(1)	(1)	(1)	(1)	(1)	-	-	-	0	(9)
4	Average Revenue for the Month	$ 37.52	$ 38.14	$ 35.96	$ 35.96	$ 36.74	$ 33.88	$ 34.14	$ 38.30	$ 46.88	$ 40.64	$ 41.81	$ 93.68	
5	Increase in Revenues	$ -	$ (114)	$ (36)	$ (36)	$ (37)	$ (34)	$ (34)	$ (38)	$ -	$ -	$ -	0	$ (329)
6	Total Increase in Revenue per RUCO	(329)												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	(329)												
9	Gallons Sold per Average Customer	9,501	9,901	8,501	8,501	9,000	7,167	7,334	10,000	15,501	11,501	12,250	45,501	
10	Increase In Customers	-	(3)	(1)	(1)	(1)	(1)	(1)	(1)	-	-	-	0	
11	Increase In Gallons	-	(29,702)	(8,501)	(8,501)	(9,000)	(7,167)	(7,334)	(10,000)	-	-	-	0	(80,204)

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
2 INCH CONSTRUCTION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	-	-	-	-	-	-	-	-	-	-	-	-	
2	Actual Customers	-	1	1	1	1	1	-	-	-	-	-	-	
3	Increase in Number of Customers	-	(1)	(1)	(1)	(1)	(1)	-	-	-	-	-	0	(5)
4	Average Revenue for the Month	$ -	$ 167.38	$ 75.34	$ 73.00	$ 109.66	$ 220.42	$ -	$ -	$ -	$ -	$ -	$ -	
5	Increase in Revenues	$ -	$ (167)	$ (75)	$ (73)	$ (110)	$ (220)	$ -	$ -	$ -	$ -	$ -	0	$ (646)
6	Total Increase in Revenue per RUCO	(646)												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	(646)												
9	Gallons Sold per Average Customer	#DIV/0!	60,501	1,501	-	23,501	94,501	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
10	Increase In Customers	-	(1)	(1)	(1)	(1)	(1)	-	-	-	-	-	0	
11	Increase In Gallons	#DIV/0!	(60,501)	(1,501)	-	(23,501)	(94,501)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3 INCH CONSTRUCTION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	4	4	4	4	4	4	4	4	4	4	4	4	
2	Actual Customers	4	4	2	2	3	4	4	5	4	4	4	4	
3	Increase in Number of Customers	-	-	2	2	1	-	-	(1)	-	-	-	0	4
4	Average Revenue for the Month	$ 272.56	$ 742.31	$ 782.09	$ 626.87	$ 723.46	$ 449.81	$ 661.78	$ 221.97	$ 284.65	$ 232.19	$ 295.37	$ 243.31	
5	Increase in Revenues	$ -	$ -	$ 1,564	$ 1,254	$ 723	$ -	$ -	$ (222)	$ -	$ -	$ -	0	$ 3,319
6	Total Increase in Revenue per RUCO	3,319												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	3,319												
9	Gallons Sold per Average Customer	81,125	382,250	407,750	308,250	370,167	194,750	330,625	48,700	88,875	55,250	95,750	62,375	
10	Increase In Customers	-	-	2	2	1	-	-	(1)	-	-	-	0	
11	Increase In Gallons	-	-	815,501	616,501	370,167	-	-	(48,700)	-	-	-	0	1,753,468

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
4 INCH CONSTRUCTION

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	-	-	-	-	-	-	-	-	-	-	-	-	
2	Actual Customers	-	1	1	1	1	1	1	-	-	-	-	-	
3	Increase in Number of Customers	-	(1)	(1)	(1)	(1)	(1)	(1)	-	-	-	-	0	(6)
4	Average Revenue for the Month	#DIV/0!	$ 234.02	$ 531.20	$ 263.66	$ 393.92	$ 390.80	$ 432.92	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
5	Increase in Revenues	#DIV/0!	$ (234)	$ (531)	$ (264)	$ (394)	$ (391)	$ (433)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
6	Total Increase in Revenue per RUCO	#DIV/0!												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	#DIV/0!												
9	Gallons Sold per Average Customer	#DIV/0!	4,501	195,000	23,501	107,000	105,000	132,000	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	
10	Increase In Customers	-	(1)	(1)	(1)	(1)	(1)	(1)	-	-	-	-	0	
11	Increase In Gallons	#DIV/0!	(4,501)	(195,000)	(23,501)	(107,000)	(105,000)	(132,000)	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
3/4 INCH FIRE SPRINKLER

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	43	43	43	43	43	43	43	43	43	43	43	43	
2	Actual Customers	43	43	43	43	43	43	43	43	43	43	43	43	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.06	$ 10.00	$ 10.00	$ 10.00	$ 10.03	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	-	-	-	-	-	-	-	23	-	-	-	12	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1 INCH FIRE SPRINKLER

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	2	2	2	2	2	2	2	2	2	2	2	2	
2	Actual Customers	2	2	2	2	2	2	2	2	2	2	2	2	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.63	$ 10.63	$ 10.00	$ 10.00	$ 10.63	$ 10.00	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	-	-	-	-	-	-	250	250	-	-	250	-	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #7 - REVENUE ANNUALIZATION
CUSTOMERS TO YEAR END LEVELS
1.5 INCH FIRE SPRINKLER

LINE NO.	DESCRIPTION	January	February	March	April	May	June	July	August	September	October	November	December	Total Year
1	Year End Number of Customers	3	3	3	3	3	3	3	3	3	3	3	3	
2	Actual Customers	3	3	3	3	3	3	3	3	3	3	3	3	
3	Increase in Number of Customers	-	-	-	-	-	-	-	-	-	-	-	0	-
4	Average Revenue for the Month	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.00	$ 10.42	$ 10.42	$ 10.00	$ 10.00	$ 10.00	$ 10.00	
5	Increase in Revenues	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	0	$ -
6	Total Increase in Revenue per RUCO	-												
7	Increase In Revenue per Company	-												
8	Total Revenue Adjustment	-												
9	Gallons Sold per Average Customer	-	-	-	-	-	-	167	167	-	-	-	-	
10	Increase In Customers	-	-	-	-	-	-	-	-	-	-	-	0	
11	Increase In Gallons	-	-	-	-	-	-	-	-	-	-	-	0	-

REFERENCES:
Company Schedules C-2, page 7 and Schedules C-2, page 7.1 thru 7.15b
Company's data response to Staff's data request MEM 6.1 - Actual amount of water billed for 4 & 6 inch irrigation in 2007

Chaparral City Water Company
Test Year Ended December 31, 2006
Operating Income & Expense Adjustments
Adjustment 8

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-39
DIRECT TESTIMONY

Line No.			
1	Remove Expensed Items in Repairs & Maintenace Expense and Capitalize		
2			
3	Per Company Repairs and Maintenance Expense	$	104,609
4	Per RUCO Repairs and Maintenance Expense		61,392
5	RUCO Adjustment		(43,217)
6			
7			
8	Increase (Decrease) to Repairs and Maintenance Expense	$	(43,217)
9			
10			
11	Adjustment to Revenue and/or Expense	$	(43,217)
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Expensed Items & Capitalize.xls		

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJUSTMENT 9 - INTENTIONALLY LEFT BLANK

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-40
DIRECT TESTIMONY

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustment to Revenues and Expenses
Adjustment Number 10

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-41
DIRECT TESTIMONY

Line No.		
1	Annualize power cost for additonal gallons from annualization of revenues	
2		
3	Test Year Power Costs Plus Adjustments for APS & SRP Rate Increases	$ 677,696
4	Gallons sold in Test Year (1,000's)	2,084,339
5	Cost per 1,000 gallons	0.32514
6	Additonal gallons from annualization (in 1,000's) in adjustment 6	(192,426)
7		
8	RUCO Increase (Decrease) in Expense	$ (62,565)
9	Company Increase (Decrease) in Expense	(74,714)
10		
11	Adjustment to Revenue and/or Expense	$ 12,149
12		
13		
14		
15		
16		
17		
18		
19		
20		

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJUSTMENT 11 - REMOVE CAP AMORTIZATION

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-42
DIRECT TESTIMONY

See TJC Direct Testimony

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #12 - INCOME TAXES

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-43
DIRECT TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
	FEDERAL INCOME TAXES:		
1	OPERATING INCOME BEFORE INCOME TAXES	$ 1,631,784	SCH. TJC-31
	LESS:		
2	ARIZONA STATE TAX	95,765	LINE 11
3	INTEREST EXPENSE	257,432	NOTE (a)
4	FEDERAL TAXABLE INCOME	$ 1,278,587	LINE 1 - LINES 2 & 3
5	FEDERAL INCOME TAX RATE	34.00%	TAX RATE
6	FEDERAL INCOME TAX EXPENSE	$ 434,720	LINE 4 X LINE 5
	STATE INCOME TAXES:		
7	OPERATING INCOME BEFORE INCOME TAXES	$ 1,631,784	LINE 1
	LESS:		
8	INTEREST EXPENSE	257,432	NOTE (A)
9	STATE TAXABLE INCOME	$ 1,374,352	LINE 7 - LINE 8
10	STATE TAX RATE	6.968%	TAX RATE
11	STATE INCOME TAX EXPENSE	$ 95,765	LINE 9 X LINE 10
12	TOTAL INCOME TAX PER RUCO	530,485	LINE 6 + 11
13	INCOME TAXES PER COMPANY FILING	270,020	COMPANY SCHEDULE C-1
14	RUCO INCOME TAX ADJUSTMENT	$ 260,465	

NOTE (a):
INTEREST SYCHRONIZATION

ADJUSTED RATE BASE	$ 21,328,051
WEIGHTED COST OF DEBT	1.21%
	$ 257,432

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-44
DIRECT TESTIMONY

OCRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) AMOUNT	(B) RUCO ADJUSTMENT	(C) ADJUSTED BALANCE	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000		$ 1,400,000	4.10%	3.13%	0.13%
2	LONG-TERM DEBT	6,865,000		6,865,000	20.20%	5.34%	1.08%
3	COMMON EQUITY	27,002,476	(1,280,000)	25,722,476	75.70%	8.83%	6.68%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ (1,280,000)	$ 33,987,476	100.00%		
5	**OCRB WEIGHTED COST OF CAPITAL**						7.89%

FVRB WEIGHTED COST OF CAPITAL

	DESCRIPTION	(A) AMOUNT	(B) RUCO ADJUSTMENT	(C) ADJUSTED BALANCE	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
6	SHORT-TERM DEBT	$ 1,400,000		$ 1,400,000	4.10%	3.13%	0.13%
7	LONG-TERM DEBT	6,865,000		6,865,000	20.20%	5.34%	1.08%
8	COMMON EQUITY	27,002,476	(1,280,000)	25,722,476	75.70%	6.83%	5.17%
9	TOTAL CAPITALIZATION	$ 35,267,476	$ (1,280,000)	$ 33,987,476	100.00%		
10	**FVRB WEIGHTED COST OF CAPITAL**						6.38%

REFERENCES:
COLUMN (A): COMPANY SCH. D - 1
COLUMN (B): TESTIMONY, WAR
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): COLUMN (C) ÷ COLUMN (C), LINE 5
COLUMN (E): TESTIMONY, WAR
COLUMN (F): COLUMN (D) x COLUMN (E)

Chaparral City Water Company
Test Year Ended December 31, 2006
Present and Proposed Rates

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-45

Line No.	Monthly Usage Charge for:	Company Present Rates	Company Proposed Rates	RUCO Proposed Rates	RUCO Dollar Change
1	Meter Size (All Zones and Classes):				
2	3/4 Inch	$ 13.60	$ 18.56	$ 15.00	$ 1.40
3	1 Inch	22.70	30.97	25.00	2.30
4	1 1/2 Inch	45.40	61.95	50.50	5.10
5	2 Inch	73.00	99.61	81.25	8.25
6	3 Inch	146.00	199.21	164.25	18.25
7	4 Inch	227.00	309.74	252.50	25.50
8	6 Inch	454.00	619.47	500.00	46.00
9	8 Inch	730.00	996.07	810.00	80.00
10	10 Inch	1,043.00	1,423.15	1,150.00	107.00
11	12 Inch	1,980.00	2,701.67	2,220.00	240.00
12					
13					
14	Monthly Service Charge for Fire Sprinkler				
15	4 Inch or smaller	$ 10.00	$ 10.00	$ 10.00	$ -
16	6 Inch	10.00	10.00	10.00	-
17	8 Inch	10.00	10.00	10.00	-
18	10 Inch	10.00	10.00	10.00	-
19	Larger than 10 Inch	10.00	10.00	10.00	-
20					
21					
22	Gallons In Minimum (All Zones and Classes)	-	-	-	- $ -
23					

Line No.	Commodity Rates (Residential, Commercial, Industrial)	Block	(Per 1,000 gallons) Present Rate	Proposed Rate	RUCO Proposed Rate	Dollar Change
24						
25						
26						
27						
28	3/4 Inch Meter Residential	0 gallons to 3,000 gallons	$ 1.68	$ 2.292	$ 1.85	$ 0.17
29		3,001 gallons to 9,000 gallons	2.52	$ 3.438	2.65	0.13
30		over 9,000 gallons	3.03	$ 4.134	3.5176	0.49

Chaparral City Water Company
Test Year Ended December 31, 2006
Present and Proposed Rates

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-45
PAGE 2 OF 2

Line No.			(Per 1,000 gallons) Company Present Rate	Company Proposed Rate	RUCO Proposed Rate	RUCO Dollar Change
1						
2	**Commodity Rates**					
3	**(Residential, Commercial, Industrial)**	**Block**				
4						
5	3/4 Inch Meter Commercial and Industrial	0 gallons to 9000 gallons	$ 2.52	$ 3.438	$ 2.65	$ 0.13
6		over 9,000 gallons	3.03	4.134	3.5176	0.49
7	1 Inch Meter	0 gallons to 24,000 gallons	2.52	3.438	2.65	0.13
8		over 24,000 gallons	3.03	4.134	3.5176	0.49
9	1.5 Inch Meter	0 gallons to 60,000 gallons	2.52	3.438	2.65	0.13
10		over 60,000 gallons	3.03	4.134	3.5176	0.49
11	2 Inch Meter	0 gallons to 100,000 gallons	2.52	3.438	2.65	0.13
12		over 100,000 gallons	3.03	4.134	3.5176	0.49
13	3 Inch Meter	0 gallons to 225,000 gallons	2.52	3.438	2.65	0.13
14		over 225,000 gallons	3.03	4.134	3.5176	0.49
15	4 Inch Meter	0 gallons to 350,000 gallons	2.52	3.438	2.65	0.13
16		over 350,000 gallons	3.03	4.134	3.5176	0.49
17	6 Inch Meter	0 gallons to 725,000 gallons	2.52	3.438	2.65	0.13
18		over 725,000 gallons	3.03	4.134	3.5176	0.49
19	8 Inch Meter	0 gallons to 1,125,000 gallons	2.52	3.438	2.65	0.13
20		over 1,125,000 gallons	3.03	4.134	3.5176	0.49
21	10 Inch Meter	0 gallons to 1,500,000 gallons	2.52	3.438	2.65	0.13
22		over 1,500,000 gallons	3.03	4.134	3.5176	0.49
23	12 Inch Meter	0 gallons to 2,250,000 gallons	2.52	3.438	2.65	0.13
24		over 2,250,000 gallons	3.03	4.134	3.5176	0.49
25						
26	**Irrigation/Bulk**	All gallons	$ 1.56	$ 3.438	$ 2.65	$ 1.09
27						
28	**Fire Hydrant Irrig./Construction**	All gallons	$ 1.56	$ 3.438	$ 2.65	$ 1.09
29						
30	**Standpipe (Fire Hydrants)**	All gallons	$ 2.52	$ 3.438	$ 2.65	$ 0.13
31						
32	**Fire Sprinklers**	All gallons	$ 2.52	$ 3.438	$ 2.65	$ 0.13

CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-07-0551

SURREBUTTAL TESTIMONY
ON REQUIRED REVENUE AND RATE DESIGN

OF

TIMOTHY J. COLEY

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

NOVEMBER 20, 2008

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Timothy J. Coley. My business address is 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. In what capacity and by who are you employed?

A. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO").

Q. Please state your educational background and qualifications in utility regulation.

A. Appendix 1, attached to my direct testimony, describes my educational background and includes a list of the rate cases and regulatory matters in which I have participated.

Q. Have you previously testified in rate proceedings before the Arizona Corporation Commission ("ACC")?

A. Yes. I have previously presented testimony regarding revenue requirements in rate case proceedings before the Arizona Corporation Commission (hereafter referred to as "ACC" or "Commission").

Q. Are you the same Timothy J. Coley who previously filed direct testimony in this case?

A. Yes.

Q. Please state the purpose of your surrebuttal testimony in this case.

A. The purpose of my surrebuttal testimony in this case is to present RUCO's responses and positions to Chaparral City Water Company's, Inc. (hereafter referred to as "Chaparral", or "Company") rebuttal testimony filed on October 31, 2008 for a permanent rate increase for Chaparral City Water.

I will also respond to certain Commission Staff ("Staff") adjustments accepted by the Company in its rebuttal testimony filing.

Q. What specific areas will your testimony address?

A. I will sponsor RUCO's recommended overall revenue requirements, rate base adjustments, operating income and expense adjustments, a proposed low-income program, other remaining issues, and the rate design pertaining to the Company.

Q. Are there other RUCO witnesses that will provide testimony and sponsor other areas of this rate proceeding?

A. Yes. RUCO witness Mr. William A. Rigsby is providing testimony and sponsoring RUCO's recommended cost of capital and capital structure issues. He will also address rate case expense pertaining to the legal fees associated with the Company's Appeal and Remand of Commission Decision No. 68176.

Q. Please identify the exhibits and schedules that you are sponsoring in this testimony.

A. The schedules are labeled TJC-1 through TJC-36 respectively. The exhibits that support my testimony follow immediately after my schedules and are labeled RUCO Exhibit 1 through RUCO Exhibit X.

Q. Does your silence on any issues or matters pertaining to the Company's rebuttal testimony constitute RUCO's acceptance of the Company's position?

A. No.

SURREBUTTAL REVENUE REQUIREMENTS

Q. Please summarize your surrebuttal response to Chaparral City Water's rebuttal testimony and your recommended surrebuttal revenue requirements.

A. Chaparral's revenue should be increased by $1,144,478. This recommendation is summarized on Schedule TJC-1. My recommended fair value rate base ("FVRB") is $27,498,329 for the Company. This information is shown on Schedule TJC-2, and the detail supporting the original cost rate base is presented on Schedule TJC-3. My recommended proposed operating income for Chaparral City Water should be no more than $1,754,393 as shown on Schedule TJC-27.

SUMMARY

Q. Please summarize what areas your surrebuttal will address in this proceeding.

A. My surrebuttal testimony addresses the following areas:

Original Cost Rate Base ("OCRB") Adjustments:

Adj. #1 – Intentionally Left Blank[1]

Adj. #2 – Intentionally Left Blank

Adj. #3 – Remove Wells 8 & 9 – These two wells are no longer in service. This adjustment removes well numbers 8 & 9 from Gross Utility Plant in Service ("GUPIS") and reduces plant by $107,412. A corresponding adjustment of $107,412 to accumulated depreciation is necessary to eliminate the related accumulated depreciation.

Adj. #4 – Intentionally Left Blank

Adj. #5 – Remove Shea Treatment Plant #1 - The Shea Treatment Plant #1 has not been in service since 2003. This adjustment removes Shea Treatment Plant #1 from GUPIS and reduces plant by $2,010,923. A corresponding adjustment

[1] Adjustments are labeled "Intentionally Left Blank" for one of the following reasons: 1) the adjustment does not pertain to this particular section of adjustments or 2) the adjustment is simply a place holder for a future adjustment.

to accumulated depreciation is necessary in the amount of $2,010,923 to eliminate the related accumulated depreciation.

Adj. #6 – Capitalize Expensed Plant Items – This adjustment increases GUPIS by $80,891. The Company expensed some plant items that are more appropriately capitalized as agreed to by the Company. RUCO accepts the Company's corresponding adjustment to increase accumulated depreciation by $3,265. The adjustment to decrease the appropriate expenses will be discussed later in the operating income section.

Adj. #7 – Intentionally Left Blank

Adj. #8 – Intentionally Left Blank

Adj. #9 – Direct Plant – This adjustment increases GUPIS by $32,536. The Company agrees that it failed to carry these plant items forward to the appropriate schedules in its rate application.

Adj. #10 – General Office Plant and Accumulated Depreciation – This adjustment reduces General Office Plant by $95,944 and Accumulated Depreciation by $51,498. The adjustment corrects the Company's 4-Factor General Office allocation factor from 3.21 percent to 2.8 percent.

Adj. #11 – Remove Post-test year General Office Plant – This adjustment removes post-test year plant and reduces General Office plant by $15,434.

Adj. #12 – Well Settlement Proceeds – This adjustment recognizes 100 percent of the settlement proceeds as a regulatory liability in the amount of $1,216,000 and is consistent with Staff's recommendation.

Adj. #13 – Intentionally Left Blank

Adj. #14 – Contributions in Aid of Construction ("CIAC") – This adjustment increases CIAC and OCRB by $1,523. The Company used an amortization rate that was different than authorized in Commission Decision No. 68176.

Adj. #15 – Additional Central Arizona Project ("CAP") Allocation – This adjustment removes the 50 percent of the additional CAP allocation as not used and useful. It removes 100 percent of the deferred regulatory asset and places 50 percent, $640,000, of it into a non-depreciable plant account.

Adj. #16 – Working Capital – This adjustment reduces working capital in the amount of $100,122 by including a cash working capital calculation that the Company agreed to in its rebuttal testimony.

Reconstruction Cost New Less Depreciation ("RCND") Rate Base Adjustments:

Adj. #1 – Reconstruction Cost New ("RCND") Factor Rounding – The adjustment decreases RCND direct plant by $118 and corrects the Company's truncating of the RCND factor when trending the plant up to reconstruction cost new values.

Adj. #2 – Correct Plant Account 304 RCND Index Factors on Three Line Items – This adjustment reduces both GUPIS and accumulated depreciation by $17,807 and $4,411 respectively. It corrects the RCND Index Factors for three direct plant line items in account 304 as agreed to by the Company in its rebuttal testimony.

Adj. #3 – Remove Wells 8 & 9 – This adjustment removes well numbers 8 & 9 from RCND GUPIS. It reduces both plant and accumulated depreciation by $441,470, because these two wells are no longer in service.

Adj. #4 – Intentionally Left Blank

Adj. #5 – Remove Shea Treatment Plant #1 - This adjustment removes Shea Treatment Plant #1 from RCND GUPIS and reduces plant and accumulated depreciation by $3,262,891. This plant has not been in service since 2003.

Adj. #6 – Capitalize Expensed Plant Items – This adjustment increases GUPIS by $80,891. The Company expensed some plant items that are more

appropriately capitalized as agreed to by the Company. RUCO accepts the Company's corresponding adjustment to increase accumulated depreciation by $3,265. The adjustment to decrease the appropriate expenses will be discussed later in the operating income section.

Adj. #7 – Intentionally Left Blank

Adj. #8 – Intentionally Left Blank

Adj. #9 – Intentionally Left Blank

Adj. #10 – General Office RCND Plant and Accumulated Depreciation – This adjustment decreases both plant and accumulated depreciation by $126,720 and $67,617, respectively. It corrects the Company's 4-Factor General Office allocation factor from 3.21 percent to 2.8 percent as agreed to by the Company in its rebuttal testimony.

Adj. #11 – Remove Post-Test Year General Office Plant – This adjustment removes post-test year plant, reduces General Office plant by $15,434, and increases accumulated depreciation by $1,404.

Adj. #12 – Well Settlement Proceeds – This adjustment recognizes 100 percent of the settlement proceeds as a regulatory liability in the amount of $1,216,000.

Adj. #13 – Advances in Aid of Construction ("AIAC") – This adjustment reduces AIAC and RCND rate base by $109,513 because any adjustment to GUPIS will cause a change to the AIAC RCND Factor. This will be discussed later in my testimony.

Adj. #14 – Contributions in Aid of Construction ("CIAC") – This adjustment increases CIAC and RCND GUPIS by $2,351. The Company used an amortization rate that was different than authorized in Commission Decision No. 68176.

Adj. #15 – Additional Central Arizona Project ("CAP") Allocation – This adjustment removes the 50 percent of the additional CAP allocation as not used and useful. It removes 100 percent of the deferred regulatory asset and places 50 percent, $640,000, of it into a non-depreciable plant account.

Adj. #16 – Working Capital – This adjustment reduces working capital in the amount of $100,122 by including a cash working capital calculation that the Company agreed to in its rebuttal testimony.

Operating Income Adjustments:

Adj. #1 – Depreciation & Amortization Expense – This adjustment determines the level of depreciation and amortization expense that should be allowed on a going

forward basis. Chaparral requires an adjustment that reduced the level of depreciation and amortization expense by $67,021.

Adj. #2 – Property Tax Expense – This adjustment reduces property tax expense by adjusting two factors: 1) the three years of revenue used in the Arizona Department of Revenue ("ADOR") tax valuation formula and 2) the net book value of the vehicles. The adjustment reduced property tax expense by $77,724.

Adj. #3 – Miscellaneous Expense – This adjustment reflects Staff's recommendation to increase miscellaneous expense by $38,164 that the Company agreed to in its rebuttal testimony.

Adj. #4 – Rate Case Expense – This adjustment reduces the Company's level of rate case expense requested by $51,538. The adjustment removes unamortized rate case expense related to the Company's previous rate case. RUCO witness, Mr. Rigsby, will address the issue of additional rate case expense requested by the Company associated with the prior rate case appeal.

Adj. #5 – Purchased Water – This adjustment reduces purchased water expense by $10,186. The adjustment reflects the Company's rebuttal position.

Adj. #6 – Outside Services Expense – This adjustment decreases outside services expense by $71,000 because of a non-recurring expense on a going forward basis.

Adj. #7 – Water Revenues – This adjustment increases water revenues by $58,310 due to actual gallons being used rather than estimates used by the Company in its direct testimony in annualizing its revenue. RUCO accepts the Company's rebuttal position regarding this adjustment.

Adj. #8 – Remove Expensed Plant Items and Capitalize – This adjustment decreases Repairs & Maintenance Expenses by $43,217 and adopts Staff's adjustment to decrease Outside Services Expense by $38,049 for a total adjustment of $81,266. The Company expensed some plant items that are more appropriately capitalized as discussed in the rate base sections of my testimony.

Adj. #9 – Water Testing Expense – This adjustment adopts Staff's adjustment to normalize water testing expense. It decreases the expense by $17,820, which the Company accepted in its rebuttal testimony.

Adj. #10 – Purchased Power Expense – This adjustment increases purchased power expense by $11,619 to pump additional gallons of water derived from the revenue annualization calculation. It is the same adjustment proposed by the Company in its rebuttal testimony.

Adj. #11 – Amortization of Additional CAP Allocation – This adjustment removes the deferred regulatory asset amortization expense of $64,000, which is consistent with the Company's rebuttal position.

Adj. #12 – Income Tax Expense – This adjustment increases income tax expense by $194,666 to reflect RUCO's recommended taxable income.

Other Remaining Issues

Low-Income Program – The Company suggested that it would propose a Low-Income Program ("LIP") prior to the hearing for the parties to review. RUCO generally supports LIP's and will review it once it is available. The Company stated that all customers would have to subsidize the program accordingly.

CAP Hook-up Fee – RUCO recommends that the language on Company Schedule H-3, page 3, line 22 and lines 30 through 32 be struck. The Company never addresses this issue in either its direct or rebuttal testimonies.

Grossing-up Taxes for Service Lines /Meter Installations – The Company has proposed that service line and meter installations are now taxable income for income purposes. RUCO is not aware of any changes that substantiate that claim.

Q. Did the Company propose that service lines and meter installations be grossed-up for taxes?

A. Yes. The Company made this request on Company Schedule H-3, page 4 but was silent on the issue in written testimony.

Q. What recommendation is RUCO making regarding this proposed treatment to gross these service lines and meter installations up for taxes?

A. RUCO recommends the Commission deny the request unless the Company can cite some change in ACC rules and/or Internal Revenue Service Regulations identifying a change that would allow such treatment.

Interest Synchronization – RUCO has adopted the Company's position on interest synchronization and has multiplied Chaparral's FVRB times RUCO's recommended weighted cost of debt to calculate an appropriate interest expense deduction which is reflected in RUCO's recommended level of test year adjusted income tax expense.

RATE DESIGN

Q. Is RUCO filing a new rate design in surrebuttal testimony?

A. Not at this time. As a result of RUCO's modified position, it will be filing revised rate design schedules prior to the hearing that reflect RUCO's surrebuttal

revenue recommendation. RUCO's surrebuttal revenue recommendation is approximately 7.4 percent more than its direct testimony recommendation.

ORIGINAL COST RATE BASE ("OCRB")

OCRB Adjustment #1 – Intentionally Left Blank

OCRB Adjustment #2 – Intentionally Left Blank

OCRB Adjustment #3 – Remove Wells 8 and 9

Q. Has the Company agreed to remove Wells 8 and 9 from rate base that are no longer in service?

A. Yes.

Q. What adjustment did RUCO make to remove the two wells from OCRB that are no longer in service?

A. RUCO accepted the Company's position to adopt Staff's recommendation and removed $107,412 from GUPIS. A corresponding adjustment to accumulated depreciation was also adopted by RUCO that decreased accumulated depreciation by $107,412.

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Q. Is this a different adjustment than RUCO recommended in its direct testimony?

A. RUCO's surrebuttal adjustment is essentially the same as its direct testimony adjustment. The only difference in RUCO's two recommendations is the amount. Staff identified an additional $3,944 that was related to an electric pump on one of the wells. The Company adopted Staff's number in rebuttal testimony. RUCO also adopts Staff's number of $107,412 to remove the two wells in surrebuttal testimony.

OCRB Adjustment #4 – Intentionally Left Blank

OCRB Adjustment #5 – Remove Shea Water Treatment Plant 1

Q. Did the Company adopt RUCO's adjustment to remove Shea Water Treatment Plant 1 from OCRB because it is no longer in service?

A. Yes.

Q. What adjustment is necessary to remove the Shea Water Treatment Plant 1 from OCRB?

A. A corresponding adjustment to decrease GUPIS and accumulated depreciation in the amount of $2,010,923 was necessary to remove the Shea Water Treatment Plant from OCRB.

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OCRB Adjustment #6 – Capitalize Plant Items Previously Expensed

Q. Did the Company accept RUCO's adjustment to capitalize plant items that were previously expensed?

A. Yes. The Company not only accepted RUCO's adjustment but also accepted Staff's adjustment to capitalize additional plant that was previously expensed. RUCO adopts the Company's proposal in surrebuttal testimony.

Q. What adjustment did the Company propose in adopting both Staff and RUCO's adjustment to more appropriately capitalize plant items rather than expensing them?

A. The Company capitalized both RUCO and Staff's adjustments to add an additional $80,891 to GUPIS and increased accumulated depreciation by $3,265 relating to the plant items. A corresponding adjustment is made on the income statement to remove the expensed items and will be discussed later.

OCRB Adjustment #7 – Intentionally Left Blank

OCRB Adjustment #8 – Intentionally Left Blank

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OCRB Adjustment #9 – Additional Plant that was not carried forward to Company Schedule B-2

Q. Does RUCO accept the Company's adjustment to properly reflect additional plant in service, which the Company failed to carry forward to its Schedule B-2?

A. Yes. RUCO made an adjustment to account for the plant.

Q. What adjustment did RUCO make to account for the additional plant?

A. RUCO made an adjustment in the amount of $32,536 to increase GUPIS to account for the additional plant.

OCRB Adjustment #10 – To Correct General Office Plant Allocation Factor

Q. Did the Company accept RUCO's adjustment to correct the general office plant allocation factor?

A. Yes. The Company accepted RUCO's adjustment that corrects the general office plant allocation factor to 2.8 percent rather than the 3.21 percent utilized by the Company in its rate application.

Q. What adjustment did RUCO make to correct the general office allocation factor?

A. General office plant in service should be decreased by $95,944 and accumulated depreciation should be decreased by $51,498 based on the 2.8 percent allocation factor mentioned above as shown on Schedule TJC-10, pages 1 and 2.

OCRB Adjustment #11 – To Remove Post Test Year General Office Plant from Accounts 303 and 340

Q. Did the Company accept RUCO's adjustment to remove post test year general office plant?

A. The Company did not address RUCO's adjustment to remove the post test year general office plant from OCRB.

Q. What is RUCO's position regarding this post test year general office plant in surrebuttal testimony?

A. RUCO maintains its same direct testimony position to remove $15,434 of 2007 post test year general office plant from accounts 303 and 340.

OCRB Adjustment #12 – Treatment of Wells Proceeds

Q. Does RUCO maintain its direct testimony position of a 50/50 sharing of the well proceeds between the shareholders and ratepayers?

A. No. After reading Staff's direct testimony rationale that ratepayers should receive 100 percent of the settlement proceeds, RUCO is compelled to adopt Staff's reasoning and support its position.

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Q. Does RUCO agree with the Company's reasoning that the proceeds should be treated the same as the Arizona Water Company – Eastern Group's Pinal Creek Group Settlement proceeds, Commission Decision No. 66849?

A. There is a definite distinction between that case and Chaparral's Fountain Hill Sanitary District ("FHSD") case. Here, the wells are fully depreciated. In the Arizona Water Company situation, the Company's assets were not fully depreciated.

Q. What accounting treatment is RUCO recommending for the settlement proceeds?

A. RUCO recommends the same accounting treatment that Staff recommends. The proceeds should be treated as a regulatory liability.

Q. What adjustment does RUCO recommend to treat the settlement proceeds as a regulatory liability?

A. RUCO recommends reducing rate base by $1.52 million less Staff's calculated amortization expense for 2005 and 2006, which leaves a regulatory liability balance of $1,216,000

OCRB Adjustment #13 – Intentionally Left Blank

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OCRB Adjustment #14 – To Correct Amortization Rate of Contributions in Aid of Construction ("CIAC")

Q. Did the Company address RUCO's adjustment that corrects the CIAC amortization rate?

A. No. The Company did not address this adjustment in its rebuttal testimony.

Q. What position does RUCO take in its surrebuttal testimony regarding the CIAC amortization rate?

A. RUCO maintains its direct testimony position that Commission Decision No. 68176 authorized a CIAC amortization rate of 3.3588 percent. The Company utilized a composite rate of all the Company's accounts. RUCO does not believe that is the correct method to determine an amortization rate.

Q. Why do you believe that a total Company composite rate is improper?

A. CIAC consists primarily of mains, services, and meters with 2-3 percent depreciation rates - not higher depreciable plant like transportation equipment at a 20 percent rate and communication equipment at a 10 percent rate. RUCO believes the Commission establishes the CIAC amortization rate in rate case decisions, and that rate will remain constant going forward until the next rate case decision. If the Commission disagrees with that understanding, another way to derive a composite amortization rate for CIAC would be to use only the accounts in which CIAC resides rather than a composite rate for all plant accounts.

Q. Did you do an analysis using just the accounts that CIAC exists in?

A. Yes.

Q. What composite rate did you derive when using only accounts in which CIAC exists?

A. I derived at a 2.96 percent composite CIAC amortization rate.

Q. If the Commission decides to set CIAC amortization rates in rate decisions, what adjustment is RUCO recommending?

A. RUCO recommends increasing CIAC by $1,523 as shown on Schedule TJC-12.

OCRB Adjustment #15 – Treatment of Additional CAP Allocation

Q. Does RUCO maintain its direct testimony position in surrebuttal regarding the 100 percent disallowance of an additional Central Arizona Project ("CAP") water allocation of 1,931 acre-feet?

A. No. RUCO's surrebuttal position regarding the additional CAP allocation has been modified.

Q. Please explain RUCO's surrebuttal position regarding the additional CAP allocation.

A. RUCO is recommending that 50 percent of the cost of the additional CAP allocation be placed in a non-depreciable plant account – Account 303 – Land and Land Rights.

Q. Why is RUCO recommending that 50 percent be placed in a non-depreciable plant account?

A. RUCO recognizes and commends the Company's decision to help reduce and conserve groundwater usage with surface water.

Q. Why is RUCO only allowing 50 percent of the total $1.28 million cost of the additional CAP allocation to be included in UPIS in a non-depreciable plant account?

A. RUCO originally did not regard the CAP allocation as used and useful in the provision of water service. However, in deference to the Company's future source of supply concerns, RUCO now recognizes that some portion of the CAP allocation should be given rate base treatment. Accordingly, RUCO is now recommending that 50 percent of the CAP allocation should be given rate base treatment. For these reasons, RUCO has partially adopted the Staff's position on this issue and is recommending that 50 percent of the CAP allocation be booked into a non-depreciable plant account. RUCO believes that the remaining 50 percent should be included in rate base at a future point in time when it is deemed used and useful (See Bourassa Rebuttal at 29-30, Millsap Direct at 17, and Scott at 11).

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OCRB Adjustment #16 – Working Capital

Q. Did the Company accept RUCO's working capital adjustment and thus its lead/lag study to calculate cash working capital?

A. Yes.

Q. What adjustment did RUCO make for cash working capital?

A. RUCO's adjusted working capital to reflect the cash working capital requirements decrease working capital by $100,122. This number fluctuates as adjustments are made and/or accepted because it is dependent on operating expense levels.

RECONSTRUCTION COST NEW LESS DEPRECIATION RATE BASE ("RCND"):

RCND Adjustment #1 – RCND Factor Rounding

Q. Did the Company address RUCO's adjustment to eliminate the truncation issue for the RCND Factor that is used to trend UPIS up to its reconstruction cost new value?

A. No. The Company did not address this adjustment in its rebuttal testimony.

Q. Would you please explain RUCO's RCND Factor rounding adjustment?

A. Yes. The Company's Schedule B-4, pages 1-7, truncates the RCND Factor. To correct this problem, RUCO inserted a mathematical formula into the RCND Factor cells to carry out the proper multiplication.

Q. Is RUCO proposing the same recommendation in surrebuttal testimony that it did in direct testimony to eliminate the Company's truncating?

A. Yes. RUCO recommends reducing the RCND plant in service by $118 and increasing accumulated depreciation by $1 as shown on Schedule TJC-16.

RCND Adjustment #2 – Correct Account 304 Index Factors

Q. Did the Company accept RUCO's adjustment that corrects the index factor for the three plant line items in Account 304?

A. Yes. The Company accepts RUCO's adjustment and adjusted its RCND plant value downward by $17,805 in its rebuttal testimony.

RCND Adjustment #3 – Remove Wells 8 and 9 – Not In Service

Q. Did the Company agree with RUCO's RCND adjustment #3 to remove Wells 8 and 9 from UPIS?

A. Yes. This adjustment is discussed in RUCO's OCRB section of surrebuttal testimony. Many of the RCND adjustments are mere reflections of the same adjustments in RUCO's OCRB section with the exception being that the RCND adjustments are trended up to a RCND value.

Q. Does RUCO agree with the amount of the Company's adjustment?

A. Yes. RUCO agrees with the Company's adjustment that removes UPIS and accumulated depreciation in the amount of $441,470.

RCND Adjustment #4 – Remove Double Count of RCND Plant Transfers from ACC Decision 68176

Q. Did RUCO reconsider its RCND adjustment #4 that removed what RUCO characterized as a double count of UPIS authorized in Decision No. 68176?

A. Yes. RUCO is now in agreement with the Company regarding this adjustment.

Q. What adjustment was necessary to correct RUCO's direct testimony position on this possible double count of UPIS?

A. RUCO removed its adjustment in the surrebuttal schedules. However, it was necessary to make the same adjustment, an addition, in the OCRB schedules to account for UPIS the Company did not bring forward to its B-1 and B-2 Schedules. This adjustment is shown in RUCO's OCRB adjustment #9, which increased UPIS by $32,536.

RCND Adjustment #5 – Remove Shea Water Treatment Plant 1

Q. Did the Company accept RUCO's adjustment to remove the Shea Water Treatment Plant 1 from RCND rate base?

A. Yes. Again, this adjustment is a mirror reflection of the same adjustment in RUCO's OCRB section. The only difference here is it has been trended up to a RCND value. The adjustment decreases the RCND UPIS and accumulated depreciation by $3,262,891. This plant has not been in service since 2003.

RCND Adjustment #6 – Capitalize Expensed Plant Items

Q. Did the Company accept RUCO's RCND adjustment #6 to capitalize expensed plant items?

A. Yes. This adjustment is explained in RUCO's OCRB section of this testimony.

RCND Adjustment #7 – Intentionally Left Blank

RCND Adjustment #8 - RCND Trended Direct Plant Accumulated Depreciation

Q. Has the Company accepted RUCO's RCND adjustment that reconciles the accumulated depreciation balance to RUCO's recommended level of accumulated depreciation?

A. The Company does not explicitly address this adjustment to accumulated depreciation. After reviewing both the Company's Schedule B-1, page 1 and RUCO's Schedule TJC-2, which provide the same information, RUCO has come to the conclusion that many of the Company's accepted adjustments from both Staff and RUCO has largely accounted for this adjustment. In an effort to eliminate some issues in dispute, RUCO has removed this adjustment.

RCND Adjustment #9 – Intentionally Left Blank

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RCND Adjustment #10 – Correct General Office 4-Factor Plant & Accumulated Depreciation Allocator

Q. Did the Company accept RUCO's adjustment to correct the general office 4-Factor Allocator for plant and accumulated depreciation?

A. Yes. This adjustment was fully explained in RUCO's direct testimony. It is also briefly discussed in this testimony at the OCRB section. This adjustment is merely trended up to a RCND value.

RCND Adjustment #11 – Remove Post-Test Year General Office Plant

Q. Did the Company address RUCO's adjustment to remove post test year general office plant?

A. No. A discussion regarding this adjustment was provided in the OCRB section of this testimony.

Q. What adjustment is necessary to recognize and remove the post-test year general office plant?

A. Since this is post-test year plant, the adjustment is identical in both OCRB and RCND rate base adjustments because there is no RCND trending factor to consider. This adjustment reduces GUPIS by $15,434 and increases accumulated depreciation by $1,404 for both OCRB and RCND rate bases.

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RCND Adjustment #12 – Treatment of the Fountain Hills Sanitary District ("FHSD") Wells Settlement Proceeds

Q. What is RUCO's position regarding the FHSD Settlement proceeds with the Company?

A. RUCO explained its position regarding the FHSD Settlement proceeds in the OCRB section of this testimony.

RCND Adjustment #13 – Advances in Aid of Construction ("AIAC") Adjustment

Q. Did the Company address RUCO's adjustment to AIAC in rebuttal testimony?

A. No.

Q. What is RUCO's position to this adjustment since the Company did not address it in its rebuttal testimony?

A. As explained in RUCO's direct testimony, "any adjustment to plant in service will cause the AIAC factor to change because the AIAC factor is the ratio of the RCND plant in service to the original cost plant in service. All of RUCO's adjustments to either RCND or OCRB plant in service caused a minor modification to the AIAC factor. Thus, RUCO's AIAC factor is slightly larger than the Company's factor."

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Q. Did the Company make any adjustment for AIAC when accepting any of Staff or RUCO's rate base adjustments?

A. Yes. The Company's RCND AIAC balance changed from its direct to rebuttal testimonies. The amount of change authorized by the Commission in this case will be determined by the adjustments approved in its Decision. RUCO's recommended plant levels are different than the Company's resulting in different levels of RCND AIAC balances.

RCND Adjustment #14 - Contributions in Aid of Construction ("CIAC")

Q. Did the Company address RUCO's adjustment to CIAC?

A. No. However, the only difference in this adjustment and the same OCRB CIAC balance adjustment is this adjustment has been trended up to a RCND value. Please see RUCO's OCRB section for its rationale for the adjustment.

RCND Adjustment #15 - Remove the Deferred Asset and Record 50 Percent in a Non-Depreciable Plant Account - Additional CAP Allocation")

Q. Is this the same adjustment that RUCO made in its OCRB section of this testimony?

A. Yes. Please see that section of RUCO's testimony for a complete discussion.

RCND Adjustment #16 – Working Capital

Q. Did the Company accept RUCO's working capital adjustment and thus its lead/lag study to calculate cash working capital?

A. Yes.

Q. What adjustment did RUCO make for cash working capital?

A. RUCO's adjustment to working capital to reflect the cash working capital requirements decreases working capital by $100,122. This number fluctuates as adjustments are made and/or accepted because it is dependent on operating expense levels.

OPERATING INCOME & EXPENSES:

Operating Adjustment #1 – Depreciation & Amortization Expense

Q. What is the difference between RUCO's and the Company's depreciation expense recommendations?

A. The primary difference between RUCO's direct schedules and the Company's rebuttal schedules is that RUCO inadvertently utilized "Test Year Book Results" rather than the adjusted test year depreciation balance as a basis for its adjustment. RUCO has corrected its Depreciation Expense Schedule. That correction alone accounted for approximately $25,000 of the reduction to RUCO's direct testimony schedules. A second reason RUCO's depreciation expense differed from the Company's is because RUCO had not made the plant reclassification adjustment recommended by Staff and adopted by the Company.

RUCO does not object to the reclassification adjustment. The remaining discrepancy results from slight differences in recommended plant balances.

Q. If RUCO doesn't object to the plant reclassification adjustment, why hasn't RUCO made the adjustment in surrebuttal?

A. The primary reason was time. RUCO had not completed any analysis or review of the adjustment. The Company and RUCO are within a $3,000 difference of depreciation expense without having made the reclassification adjustment.

Operating Adjustment #2 – Property Tax Expense

Q. What are the primary difference in RUCO's direct and the Company's direct position regarding property tax expense?

A. RUCO used an alternative methodology rather than three years of historical gross revenues. RUCO's alternative methodology uses two years of historical revenues and one year of RUCO's proposed level of revenue.

Q. Did RUCO provide any empirical evidence in its direct testimony indicating the Company has over-collected on its property tax expense that was last authorized on September 30, 2005?

A. Yes. RUCO obtained the property tax expense for years 2004 through 2006 from the Company's rate application. The actual property tax expense for years 2007 and 2008 was obtained from Arizona Department of Revenue ("ADOR") as shown below:

	2004	2005	2006	2007	2008
Property Tax Expense	$ 280,537	$ 279,529	$ 241,774	$ 207,162	$ 187,214

Commission Decision No. 68176 made an allowance for property tax expense in the amount of $299,495. In none of those years was that level of property tax expense achieved. Actually, the disparity is growing between what was authorized and the property tax expense actually incurred.

Operating Adjustment #3 – Miscellaneous Expense

Q. What is RUCO's adjustment to miscellaneous expense?

A. RUCO adopts Staff's recommended miscellaneous expense adjustment that was accepted by the Company in rebuttal testimony.

Operating Adjustment #4 – Rate Case Expense

Q. Did the Company make any concessions in its rebuttal testimony concerning rate case expense?

A. Yes. The Company decided to forgo any unamortized rate case expense resulting from Decision 68176.

Q. Is RUCO's position the same as in its direct testimony regarding the Appeal and Remand of Decision 68176?

A. Yes. This is discussed in RUCO witness, Mr. Rigsby's testimony.

Operating Adjustment #5 – Purchased Water Expense

Q. Did RUCO accept the Company's rebuttal adjustment to purchased water expense?

A. Yes.

Operating Adjustment #6 – Outside Services Expense

Q. Did the Company address RUCO's adjustment to outside services?

A. No.

Q. What is RUCO's surrebuttal position regarding its outside services adjustment?

A. RUCO's surrebuttal position is the same as in its direct testimony. RUCO's audit of outside service invoices determined that the Company eliminated an outside service person on May 22 of the test year that provided water supply superintendent services for the Company. The Company replaced these services with an employee. The charges in the test year for the outside service person are a nonrecurring expense on a going forward basis. All associated charges for those outside services should be removed from adjusted test year outside services account. This information is provided in Company work paper titled "CCWC Employees – 06." The charge for the services was $3,500 per week. RUCO recommends reducing the outside service expense account by $71,000 to remove the nonrecurring expense as shown on Schedule TJC-37.

Operating Adjustment #7 – Water Revenues

Q. Has RUCO accepted the Company's adjustment to water revenues due to less loss of water sales from the golf courses than the Company originally estimated?

A. Yes. RUCO has accepted the Company's calculated adjustment.

Operating Adjustment #8 – Remove Expenses Charged to Repairs & Maintenance and Outside Services and Capitalize

Q. Has RUCO accepted the Company's adjustment to capitalize expensed plant items?

A. Yes. RUCO had made a portion of the adjustment in its direct testimony, which was accepted by the Company in its rebuttal testimony. The Company accepted another adjustment recommended by Staff, which RUCO adopts in its surrebuttal testimony.

Q. Please identify the total adjustment that RUCO accepts.

A. RUCO initially removed $43,217 from the repairs & maintenance expense account and capitalized it accordingly. Then, RUCO removed $38,049 from outside services and capitalized the expense as recommended by Staff and accepted by the Company.

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Operating Adjustment #9 – Water Testing Expense

Q. Please explain RUCO's adjustment to water testing expense.

A. RUCO adopts Staff's adjustment to water testing expense, which was also accepted by the Company in rebuttal testimony.

Operating Adjustment #10 – Purchased Power

Q. Does RUCO accept the Company's adjustment to purchased power expense?

A. Yes.

Operating Adjustment #11 – Amortization of the Additional CAP Allocation

Q. Please explain RUCO's adjustment that removes the amortization associated with the deferred regulatory asset – Additional CAP Allocation.

A. RUCO agrees with Staff's recommended treatment of the additional CAP allocation. However, RUCO does not believe that the CAP allocation is currently used and useful. As explained in the OCRB section, RUCO recognizes 50 percent of the allocation may be a non-depreciable plant account as suggested by Staff and accepted by the Company in recognition that the CAP allocation may help the Company reduce groundwater usage. Removal of the amortization expense associated with the CAP allocation is consistent with Staff's recommendation and accepted by the Company.

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Operating Adjustment #12 – Income Taxes

Q. Please explain RUCO's adjustment to the Company's Income Tax Expense.

A. This adjustment results from RUCO's recommended level of taxable operating income.

Other Remaining Issues

Low-Income Program ("LIP")

Q. Has the Company presented a LIP in this case?

A. No. However, the Company has proposed to present a LIP prior to the hearing for the parties to review.

Q. What is RUCO's position regarding LIP's?

A. RUCO generally supports LIP's and will review it once it is available. The Company stated that all customers would have to subsidize the program accordingly.

CAP Hook-Up Fee

Q. Has the Company proposed a CAP Hook-up Fee to recover costs associated with the additional CAP allocation?

A. Yes. The Company has proposed a "CAP Hook-up Fee" on new water installations. This is shown on Company Schedule H-3, page 3, line 22 and lines 30 through 32.

Q. Does RUCO believe this is an appropriate hook-up fee to reimburse the Company for its additional CAP allocation?

A. No. Hook-up fees are generally used to fund back-bone plant. RUCO believes that the additional CAP allocation is not back-bone plant. The Company's proposal would allow Chaparral to recover the cost of the allocation when both Staff and RUCO are recommending that the CAP allocation be booked in a non-depreciable account and the Company be permitted to earn a return on it in perpetuity. For this reason, RUCO does not believe that Chaparral should be permitted to recover the CAP allocation costs through the Company-proposed hook-up fee on new water installations.

Q. Did the Company address this hook-up fee issue in either its direct or rebuttal testimonies?

A. No.

Q. What is RUCO's recommendation concerning the Company's proposed CAP hook-up fee?

A. RUCO recommends the Commission deny this hook-up fee and the language be struck on the referenced Company H-3 Schedule.

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GROSSING-UP SERVICE LINE /METER INSTALLATION TAXES

Q. Did the Company propose that service lines and meter installations be grossed-up for taxes?

A. Yes. The Company made this request on Company Schedule H-3, page 4, but was silent on the issue in written testimony.

Q. What recommendation is RUCO making regarding this proposed treatment to gross these service lines and meter installations up for taxes?

A. RUCO recommends the Commission deny the request unless the Company can cite some change in ACC rules and/or Internal Revenue Service Regulations that would allow such treatment.

INTEREST SYNCHRONIZATION

Q. Has RUCO recalculated interest expense based on FVRB rather than OCRB?

A. RUCO has adopted the Company's position on interest synchronization and has multiplied Chaparral's FVRB times RUCO's recommended weighted cost of debt to calculate an appropriate interest expense deduction. The deduction is reflected in RUCO's recommended level of test year adjusted income tax expense.

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RATE DESIGN

Q. Is RUCO filing a new rate design in surrebuttal testimony?

A. Not at this time. As a result of RUCO's modified position and the Company's proposed LIP, it will be filing revised rate design schedules prior to the hearing that reflect RUCO's pre-hearing position revenue recommendation. RUCO's surrebuttal revenue recommendation is approximately 7.4 percent more than its direct testimony recommendation.

Q. Does RUCO believe that its rate design will mirror that filed in its direct schedules?

A. RUCO believes its rate design will be substantially similar with an upward adjustment to account for the additional revenue recommendation.

Q. Does that conclude your surrebuttal testimony at this time?

A. Yes, it does.

CHAPARRAL CITY WATER COMPANY, INC.
DOCKET NO. W-02113A-07-0551
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CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
REVENUE REQUIREMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-1
PAGE 1 OF 2
SURREBUTTAL TESTIMONY

REVENUE REQUIREMENTS

LINE NO.	DESCRIPTION	(A) COMPANY REQUESTED	(B) RUCO RECOMMENDED
1	ADJUSTED FAIR VALUE RATE BASE (FVRB)	$ 28,736,406	$ 27,498,329
2	ADJUSTED OPERATING INCOME	797,271	1,051,686
3	CURRENT RATE OF RETURN (L2 / L1)	2.77%	3.82%
4	REQUIRED RATE OF RETURN ON FVRB	9.32%	6.38%
5	REQUIRED OPERATING INCOME (L4 * L1)	2,678,233	1,754,393
6	OPERATING INCOME DEFICIENCY (L5 - L2)	1,880,962	702,707
7	GROSS REVENUE CONVERSION FACTOR	1.6286	1.6287
8	GROSS REVENUE INCREASE	$ 3,063,335	$ 1,144,478
9	CURRENT REVENUES T/Y ADJUSTED	7,446,700	7,505,010
10	PROPOSED ANNUAL REVENUE (L8 + L9)	10,510,035	8,649,488
11	PERCENTAGE AVERAGE INCREASE	41.14%	15.25%
12	COST OF COMMON EQUIITY	10.50%	6.83%

REFERENCES:
COLUMN (A): COMPANY SCHEDULE A-1
COLUMN (B): SCHEDULE TJC-1, PG. 2, TJC-2, TJC-3, TJC-30 AND TJC-43

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
GROSS REVENUE CONVERSION FACTOR

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-1
PAGE 2 OF 2
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
1	REVENUE	1.0000	
2	UNCOLLECTIBLES	0.00000	COMPANY SCH. C-3
3	SUB-TOTAL	1.0000	LINE 1 - LINE 2
4	LESS: TAX RATE	38.60%	NOTE (a)
5	TOTAL	0.6140	LINE 3 - LINE 4
6	REVENUE CONVERSION FACTOR	1.62867	LINE 1/LINE 5

NOTE (a):
CALCULATION OF EFFECTIVE TAX RATE

OPERATING INCOME BEFORE TAXES	100.00%
LESS: ARIZONA STATE TAX	6.97%
TAXABLE INCOME FEDERAL	93.03%
TIMES: FEDERAL INCOME TAX RATE	34.00%
SUBTOTAL	31.63%
ADD STATE TAX RATE	38.60%
LINE 3 ABOVE	100.00%
EFFECTIVE TAX RATE	38.60%

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RATE BASE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-2
SURREBUTTAL TESTIMONY

Line No.		RUCO Original Cost Rate base	RUCO RCND Rate base	RUCO Fair Value Rate Base (50/50)
1				
2	Gross Utility Plant in Service	$ 50,295,600	$ 77,640,019	$ 63,967,809
3	Less: Accumulated Depreciation	(13,710,454)	(22,122,967)	(17,916,711)
4				
5	Net Utility Plant in Service	$ 36,585,146	$ 55,517,052	$ 46,051,099
6				
7	Less:			
8	Advances in Aid of			
9	Construction	(6,557,243)	(10,122,247)	(8,339,745)
10	Contributions in Aid of			
11	Construction - Net of amortization	(6,120,652)	(9,443,703)	(7,782,178)
12	Customer Meter Deposits	(819,845)	(819,845)	(819,845)
13	Deferred Income Taxes & Credits	(925,896)	(925,896)	(925,896)
14	Investment tax Credits	-	-	-
15	Shared Gain on Well	(1,216,000)	(1,216,000)	(1,216,000)
16				
17	Plus:			
18	Unamortized Debt Issuance			
19	Costs	424,010	424,010	424,010
20	Working Capital	106,884	106,884	106,884
21	Deferred Regulatory Assets	-	-	-
22				
23				
24				
25				
26	Total Rate Base	$ 21,476,403	$ 33,520,255	$ 27,498,329
27				
28				
29				
30	SUPPORTING SCHEDULES:			RECAP SCHEDULES:
31	Schedules TJC-4, pages 1 and 2			Schedule TJC-1
32	Schedules TJC-5			
33	Schedules TJC-6, pages 1, 2, and 3			
34	Schedules TJC-14, pages 1 and 2			
35	Schedule TJC-15			

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE - ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-3
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENTS	(C) RUCO AS ADJUSTED
1	PLANT IN SERVICE	$ 51,771,885	$ (1,476,285)	$ 50,295,600
2	ACCUMULATED DEPRECIATION	(15,877,022)	2,166,568	(13,710,454)
3	NET PLANT IN SERVICE	$ 35,894,863	$ 690,283	$ 36,585,146
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-	-	-
5	TOTAL NET PLANT	$ 35,894,863	$ 690,283	$ 36,585,146
	Less:			
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(6,557,243)	-	(6,557,243)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(6,119,129)	(1,523)	(6,120,652)
8	CUSTOMER METER DEPOSITS	(819,845)	-	(819,845)
9	DEFERRED INCOME TAXES	(925,896)	-	(925,896)
10	INVESTMENT TAX CREDITS	-	-	-
11	SHARED GAIN ON WELL	(646,000)	(570,000)	(1,216,000)
	Plus:			
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010	-	424,010
13	WORKING CAPITAL	207,006	(100,122)	106,884
14	DEFERRED REGULATORY ASSETS	1,280,000	(1,280,000)	-
15	TOTAL RATE BASE	$ 22,737,766	$ (1,261,363)	$ 21,476,403

REFERENCES:
COLUMN (A): COMPANY SCHEDULE B-1
COLUMN (B): SCHEDULE TJC-4, PAGES 1 and 2
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-4
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ #1	(C) ADJ #2	(D) ADJ #3	(E) ADJ #4	(F) ADJ #5	(G) ADJ #6	(H) ADJ #7	(I) ADJ #8
1	PLANT IN SERVICE	$51,771,885			$ (107,412)		$(2,010,923)	$ 80,891	$ -	
2	ACCUMULATED DEPRECIATION	(15,877,022)			107,412		2,010,923	(3,265)		
3	NET PLANT IN SERVICE	$35,894,863	$ -	$ -	$ -	$ -	$ 0	$ 77,626	$ -	$ -
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-								
5	TOTAL NET PLANT	$35,894,863	$ -	$ -	$ -	$ -	$ 0	$ 77,626	$ -	$ -
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(6,557,243)								
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(6,119,129)								
8	CUSTOMER METER DEPOSITS	(819,845)		-		-				
9	DEFERRED INCOME TAXES	(925,896)		-		-				
10	INVESTMENT TAX CREDITS	-								
11	SHARED GAIN ON WELL	(646,000)								
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010					-	-		
13	WORKING CAPITAL	207,006								
14	DEFERRED REGULATORY ASSETS	1,280,000								-
15	TOTAL RATE BASE	$22,737,766	$ -	$ -	$ -	$ -	$ 0	$ 77,626	$ -	$ -

ADJUSTMENT #:	REFERENCE:
1. Intentionally Left Blank	
2. Intentionally Left Blank	
3. Remove Wells 8 & 9 - Out of Sevice	SCHEDULE TJC-7
4. Intentionally Left Blank	
5. Remove Shea Water Treatment Plant 1 - Taken Out of Service	SCHEDULE TJC-8
6. Remove Expensed Plant Items and Capitalize	SCHEDULE TJC-9
7. Intentionally Left Blank	
8. Intentionally Left Blank	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(J) ADJ #9	(K) ADJ #10	(L) ADJ #11	(M) ADJ #12	(N) ADJ #13	(O) ADJ #14	(P) ADJ #15	(Q) ADJ #16	(R) RUCO ADJUSTED
1	PLANT IN SERVICE	32,536	$ (95,944)	$ (15,434)	$ -	$ -	$ -	$ 640,000	$ -	$ 50,295,600
2	ACCUMULATED DEPRECIATION		$ 51,498	-						(13,710,454)
3	NET PLANT IN SERVICE	$ 32,536	$ (44,446)	$ (15,434)	$ -	$ -	$ -	$ 640,000	$ -	$ 36,585,146
4	CONSTRUCTION WORK IN PROGRESS (CWIP)									-
5	TOTAL NET PLANT	$ 32,536	$ (44,446)	$ (15,434)	$ -	$ -	$ -	$ 640,000	$ -	$ 36,585,146
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)									(6,557,243)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET						(1,523)	-	-	(6,120,652)
8	CUSTOMER METER DEPOSITS	-		-						(819,845)
9	DEFERRED INCOME TAXES	-		-						(925,896)
10	INVESTMENT TAX CREDITS									-
11	SHARED GAIN ON WELL				(570,000)					(1,216,000)
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS				-	-				424,010
13	WORKING CAPITAL								(100,122)	106,884
14	DEFERRED REGULATORY ASSETS							(1,280,000)		-
15	TOTAL RATE BASE	$ 32,536	$ (44,446)	$ (15,434)	$ (570,000)	$ -	$ (1,523)	$ (640,000)	$ (100,122)	$ 21,476,403

ADJUSTMENT #:	REFERENCE:
9. To Adjust OCRB Direct Plant to Carry Plant Forward that was not recorded by the Company	SCHEDULE TJC-6
10. Correct 4-Factor General Office Plant & Accumulated Depreciation Allocation Factor	SCHEDULE TJC-10, PAGES 1 and 2
11. Remove Post Test Year GO Plant in Account 303 & 340	SCHEDULE TJC-11
12. FHSD Settlement Proceeds	TJC TESTIMONY
13. Intentionally Left Blank	
14. To correct CIAC amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.	SCHEDULE TJC-12
15. To Remove Deferred Regulatory Asset and Place 1/2 in UPIS - Additional CAP Allocation	TJC TESTIMONY
16. Working Capital	SCHEDULE TJC-29, PAGES 1 thru 15

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RE-COMPUTATION OF TOTAL UTILITY PLANT IN SERVICE (UPIS)
AND ACCUMULATED DEPRECIATION FROM DECISION NO. 68176

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-5
SURREBUTTAL TESTIMONY

Total Chaparral City Water UPIS:

Line No.	Description	Amount
1	Chaparral City Water Direct Plant Per Company	$51,020,714
2	Chaparral City Water Direct Plant Per RUCO	51,053,250
3	RUCO's Direct Plant Adjustment	$ 32,536
4	Chaparral City Water General Office Plant Allocation Per Company	$ 751,171
5	Chaparral City Water General Office Plant Allocation Per RUCO	639,794
6	RUCO's General Office Plant Allocation Adjustment	$ (111,377)
7	Total Chaparral City Water Gross UPIS Per Company	$51,771,885
8	Total Chaparral City Water Gross UPIS Per RUCO	51,693,044
9	Total RUCO Gross UPIS Adjustment	$ (78,841)

Total Chaparral City Water Accumulated Depreciation:

10	Chaparral City Water Direct Plant Accumulated Depreciation Per Company	$15,473,834
11	Chaparral City Water Direct Plant Accumulated Depreciation Per RUCO	15,479,021
12	RUCO's Direct Plant Accumulated Depreciation Adjustment	5,187
13	Chaparral City Water General Office Allocation of Accumulated Depreciation Per Company	403,188
14	Chaparral City Water General Office Allocation of Accumulated Depreciation Per RUCO	351,690
15	RUCO's General Office Allocation of Accumulated Depreciation Adjustment	(51,498)
16	Total Chaparral City Water Accumulated Depreciation Per Company	15,877,022
17	Total Chaparral City Water Accumulated Depreciation Per RUCO	15,830,712
18	Total RUCO Accumulated Depreciation Adjustment	$ (46,310)

Supporting Schedules:
\TJC-4(a)Schedules\Pages1-5\DirectPlant\AZ-CorpPlant\CentralDivisionPlant\
Regarding RUCO's Eastern Div. treatment see Company response to RUCO DR 2.06

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-6
PAGE 1 OF 3
SURREBUTTAL TESTIMONY

December 31, 2004

LINE NO.	ACCT. NO.	ACCOUNT NAME	(A) DEP. RATE Thru Sep-05	(B) DEP. RATE After Sep-05	(C) 12/31/2003 PLANT BALANCE Per DECISION 68176	(D) 12/31/2003 ACCUM. DEPREC. Per DECISION 68176	(E) 2004 PLANT ADDIT'NS	(F) 2004 PLANT RETIRM'TS	(G) 2004 PLANT ADJUSTM'T	(H) TOTAL PLANT VALUE 12/31/2004	(I) 2004 DEPREC'N EXPENSE	(J) ENDING ACCUM. DEPREC. 12/31/2004	(K) NET PLANT VALUE 12/31/2004
1	301	Organization Cost	0.00%	0.00%	-	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	0.00%	0.00%	-	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	0.00%	0.00%	271,857	-	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	2.50%	3.33%	654,407	260,483	331,000	-	-	985,407	20,498	280,981	704,426
5	305	Collecting and Impounding Res.	2.50%	2.50%	6,548	82	-	-	-	6,548	164	246	6,303
6	306	Lake River and Other Intakes	2.50%	2.50%	-	-	-	-	-	-	-	-	-
7	307	Wells and Springs	2.50%	3.33%	332,065	154,900	-	-	-	332,065	8,302	163,202	168,863
8	308	Infiltration Galleries and Tunnels	2.50%	6.67%	-	-	-	-	-	-	-	-	-
9	309	Supply Mains	2.50%	2.00%	-	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	2.50%	5.00%	-	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	2.50%	12.50%	1,291,399	615,457	53,925	-	-	1,345,324	32,959	648,416	696,908
12	320	Water Treatment Equipment	2.50%	3.33%	5,660,573	1,671,920	1,961,851	-	-	7,622,424	166,037	1,837,957	5,784,467
13	330	Distribution Reservoirs & Standpipe	2.50%	2.22%	6,022,014	1,497,474	-	-	(1,296)	6,020,718	150,534	1,648,008	4,372,710
14	331	Transmission and Distribution Mains	2.50%	2.00%	15,991,782	6,020,309	348,845	-	-	16,340,626	404,155	6,424,464	9,916,162
15	333	Services	2.50%	3.33%	4,979,133	501,319	1,423,193	-	-	6,402,326	142,268	643,587	5,758,738
16	334	Meters	2.50%	8.33%	2,163,197	610,611	251,973	-	-	2,415,169	57,230	667,841	1,747,329
17	335	Hydrants	2.50%	2.00%	523,178	183,366	84,716	-	-	607,893	14,138	197,504	410,389
18	336	Backflow Prevention Devices	2.50%	6.67%	-	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	2.50%	6.67%	(0)	-	-	-	-	(0)	(0)	(0)	(0)
20	340	Office Furniture and Fixtures	2.50%	6.67%	182,811	19,192	43,730	-	-	226,540	5,117	24,309	202,232
21	341	Transportation Equipment	2.50%	20.00%	406,775	(1,732)	95,984	(65,224)	-	437,535	10,554	(56,402)	493,938
22	342	Stores Equipment	2.50%	4.00%	-	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	2.50%	5.00%	88,004	21,609	4,936	-	-	92,940	2,262	23,871	69,069
24	344	Laboratory Equipment	2.50%	10.00%	-	25	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	2.50%	5.00%	-	-	-	-	-	-	-	-	-
26	346	Communications Equipment	2.50%	10.00%	39,105	(5,716)	-	-	-	39,105	978	(4,738)	43,843
27	347	Miscellaneous Equipment	2.50%	10.00%	67,303	16,832	16,445	-	-	83,748	1,888	18,720	65,028
28	348	Other Tangible Plant	2.50%	10.00%	-	-	34,063	-	-	34,063	426	426	33,638
29		Plant Held for Future Use	0.00%	0.00%	-	-	-	-	-	-	-	-	-
30													
31		Total Gross Water Plant in Service & Accumulated Depreciation			$ 38,680,149	$ 11,566,130	$ 4,650,659	$ (65,224)	$ (1,296)	$ 43,264,288	$ 1,017,509	$ 12,518,415	$30,745,874

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-6
PAGE 2 OF 3
SURREBUTTAL TESTIMONY

YEAR 2005

LINE NO.	ACCT. NO.	ACCOUNT NAME	BEGINNING PLANT BALANCES ON JAN. 1, 2005	(A) 2005 PLANT ADDIT'NS	(B) 2005 PLANT RETIRM'TS	(C) 2005 PLANT ADJUSTM'T	(D) TOTAL PLANT VALUE 12/31/2005	(E) DEPREC'N EXPENSE	(F) ENDING ACCUM. DEPREC. 12/31/2005	(G) NET PLANT VALUE 12/31/2005
1	301	Organization Cost	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	271,857	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	985,407	468,546	-	-	1,453,952	33,023	314,003	1,139,949
5	305	Collecting and Impounding Res.	6,548	-	-	-	6,548	164	409	6,139
6	306	Lake River and Other Intakes	-	-	-	-	-	-	-	-
7	307	Wells and Springs	332,065	-	-	-	332,065	8,991	172,193	159,873
8	308	Infiltration Galleries and Tunnels	-	-	-	-	-	-	-	-
9	309	Supply Mains	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	1,345,324	106,361	(21,889)	-	1,429,796	69,378	695,905	733,891
12	320	Water Treatment Equipment	7,622,424	130,344	-	-	7,752,767	208,142	2,046,099	5,706,668
13	330	Distribution Reservoirs & Standpipe	6,020,718	2,031,545	(3,000)	-	8,049,263	170,950	1,815,958	6,233,305
14	331	Transmission and Distribution Mains	16,340,626	191,647	-	-	16,532,274	390,366	6,814,830	9,717,444
15	333	Services	6,402,326	536,187	-	-	6,938,513	180,602	824,189	6,114,324
16	334	Meters	2,415,169	215,171	-	-	2,630,341	99,838	767,679	1,862,662
17	335	Hydrants	607,893	263,983	-	-	871,877	17,572	215,077	656,800
18	336	Backflow Prevention Devices	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	(0)	1,610,687	-	-	1,610,687	28,529	28,529	1,582,157
20	340	Office Furniture and Fixtures	226,540	24,735	(4,006)	-	247,269	8,392	28,695	218,574
21	341	Transportation Equipment	437,535	120,595	(23,389)	-	534,742	33,422	(46,369)	581,111
22	342	Stores Equipment	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	92,940	52,874	-	-	145,814	3,731	27,601	118,213
24	344	Laboratory Equipment	-	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	-	-	-	-	-	-	-	-
26	346	Communications Equipment	39,105	-	-	-	39,105	1,711	(3,027)	42,132
27	347	Miscellaneous Equipment	83,748	-	-	-	83,748	3,664	22,384	61,364
28	348	Other Tangible Plant	34,063	-	-	-	34,063	1,490	1,916	32,147
29		Plant Held for Future Use	-	-	-	-	-	-	-	-
30										
31		Total Gross Water Plant in Service & Accumulated Depreciation	43,264,288	$ 5,752,677	$ (52,284)	$ -	$48,964,681	$ 1,259,964	$ 13,726,094	$35,238,586

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #2 - DIRECT PLANT & ACCUM. DEPRE.

YEAR 2006

LINE NO.	ACCT. NO.	ACCOUNT NAME	BEGINNING PLANT BALANCES ON JAN. 1, 2006	(A) 2006 PLANT ADDIT'NS	(B) 2006 PLANT RETIRM'TS	(C) 2006 PLANT ADJUSTM'T	(D) TOTAL PLANT VALUE 12/31/2006	(E) DEPREC'N EXPENSE	(F) ENDING ACCUM. DEPREC. 12/31/2006	(G) NET PLANT VALUE 12/31/2006
1	301	Organization Cost	-	-	-	-	-	-	-	-
2	302	Franchise Cost and Other Intangible Plant	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	271,857	-	-	-	271,857	-	-	271,857
4	304	Structures and Improvements	1,453,952	70,236	(5,540)	-	1,518,648	49,494	357,958	1,160,691
5	305	Collecting and Impounding Res.	6,548	-	-	-	6,548	164	573	5,975
6	306	Lake River and Other Intakes	-	-	-	-	-	-	-	-
7	307	Wells and Springs	332,065	-	-	-	332,065	11,058	183,250	148,815
8	308	Infiltration Galleries and Tunnels	-	-	-	-	-	-	-	-
9	309	Supply Mains	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	-	-	-	-	-	-	-	-
11	311	Electric Pumping Equipment	1,429,796	77,112	-	-	1,506,908	183,544	879,449	627,459
12	320	Water Treatment Equipment	7,752,767	10,733	-	-	7,763,500	258,346	2,304,445	5,459,055
13	330	Distribution Reservoirs & Standpipe	8,049,263	121,156	-	-	8,170,419	180,038	1,995,997	6,174,423
14	331	Transmission and Distribution Mains	16,532,274	918,360	-	-	17,450,634	339,829	7,154,659	10,295,975
15	333	Services	6,938,513	453,417	(2,000)	-	7,389,929	238,569	1,060,758	6,329,172
16	334	Meters	2,630,341	95,332	-	-	2,725,672	223,078	990,757	1,734,916
17	335	Hydrants	871,877	299,756	-	-	1,171,632	20,435	235,512	936,121
18	336	Backflow Prevention Devices	-	-	-	-	-	-	-	-
19	339	Other Plant and Miscellaneous Equipment	1,610,687	-	-	-	1,610,687	107,433	135,962	1,474,725
20	340	Office Furniture and Fixtures	247,269	23,090	-	-	270,359	17,263	45,958	224,401
21	341	Transportation Equipment	534,742	573	-	-	535,315	107,006	60,636	474,679
22	342	Stores Equipment	-	-	-	-	-	-	-	-
23	343	Tools and Work Equipment	145,814	3,551	-	-	149,365	7,379	34,981	114,384
24	344	Laboratory Equipment	-	-	-	-	-	-	25	(25)
25	345	Power Operated Equipment	-	-	-	-	-	-	-	-
26	346	Communications Equipment	39,105	-	-	-	39,105	3,910	883	38,222
27	347	Miscellaneous Equipment	83,748	22,794	-	-	106,542	9,514	31,898	74,644
28	348	Other Tangible Plant	34,063	-	-	-	34,063	3,406	5,322	28,741
29		Plant Held for Future Use	-	-	-	-	-	-	-	-
30										
31		RUCO Total Gross Water Plant in Service & Accumulated Depreciation	48,964,681	$ 2,096,109	$ (7,540)	$ -	$ 51,053,250	$ 1,760,466	$ 15,479,021	$ 35,574,229
32										
33		Company Gross Water Plant in Service & Accumulated Depreciation					51,020,714		15,473,834	
34										
35		RUCO Adjustment					32,536		$ 5,187	

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 3

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-7
SURREBUTTAL TESTIMONY

Line No.		
1	OCRB Direct Plant - Remove Wells 8 & 9 - Out of Service	
2		
3	Company OCRB Direct Plant - Remove Wells 8 & 9 from Account 304	$ -
4	Company OCRB Direct Plant - Remove Wells 8 & 9 from Account 307	-
5	RUCO OCRB Direct Plant - Remove Wells 8 & 9 from Account 304	(596)
6	RUCO OCRB Direct Plant - Remove Wells 8 & 9 from Account 307	(106,816)
7	RUCO Adjustment	(107,412)
8		
9		
10	Increase (Decrease) to OCRB Direct Plant	$ (107,412)
11		
12		
13		
14	Company OCRB Direct Plant Accumulated Depreciation - A/C 304	$ -
15	Company OCRB Direct Plant Accumulated Depreciation - A/C 307	-
16	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 304	(596)
17	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 307	(106,816)
18	RUCO Adjustment	(107,412)
19		
20		
21	Increase (Decrease) to OCRB Accumulated Depreciation	$ (107,412)
22		
23		
24	Net Adjustment	$ -

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 5

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-8
SURREBUTTAL TESTIMONY

Line No.		
1	OCRB Direct Plant - Remove Shea Water Treatment Plant 1 - Out of Service	
2		
3	Company OCRB Direct Plant - Account 320	$ 7,763,500
4	RUCO OCRB Direct Plant - Account 320	5,752,577
5	RUCO Adjustment	(2,010,923)
6		
7		
8	Increase (Decrease) to OCRB Direct Plant	$ (2,010,923)
9		
10		
11	Company OCRB Direct Plant Accumulated Depreciation - A/C 320	$ 2,099,307
12	RUCO OCRB Direct Plant Accumulated Depreciation - A/C 320	88,384
13	RUCO Adjustment	(2,010,923)
14		
15		
16	Increase (Decrease) to OCRB Accumulated Depreciation	$ (2,010,923)
17		
18		
19	Net Adjustment	0
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_Remove Shea Water Treatment Plant 1.xls	
26	ocrb_plant_Remove Shea Water Treatment Plant 1.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 6

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-9
SURREBUTTAL TESTIMONY

Line No.			
1	OCRB Direct Plant - Remove Expensed Items and Capitalize		
2			
3	RUCO OCRB Direct Plant - Account 304	$	11,590
4	RUCO OCRB Direct Plant - Account 311		26,084
5	RUCO OCRB Direct Plant - Account 339		43,217
6	RUCO Adjustment		80,891
7			
8	Increase (Decrease) to OCRB Direct Plant	$	80,891
9			
10			
11	Accept Company's Adjustment to Accumulated Depreciation		3,265
12			
13	Increase (Decrease) to OCRB Accumulated Depreciation	$	3,265
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #10 - GENERAL OFFICE ALLOCATED PLANT
ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-10
PAGE 1 of 2
SURREBUTTAL TESTIMONY

December 31, 2006

Line No.	General Office Plant Allocation - Plant-in-Service		Per Company Orig. Cost	4 Factor Allocation %	4 Factor Allocated Orig. Cost
1	301	Organization Cost	16,452	2.80%	461
2	302	Franchise Cost and Other Intangible Plant	1,089,237	2.80%	30,499
3	303	Land and Land Rights	-	2.80%	-
4	304	Structures and Improvements	5,802,813	2.80%	162,479
5	305	Collecting and Impounding Res.	-	2.80%	-
6	306	Lake River and Other Intakes	-	2.80%	-
7	307	Wells and Springs	-	2.80%	-
8	308	Infiltration Galleries and Tunnels	-	2.80%	-
9	309	Supply Mains	-	2.80%	-
10	310	Power Generation Equipment	-	2.80%	-
11	311	Electric Pumping Equipment	(916)	2.80%	(26)
12	320	Water Treatment Equipment	-	2.80%	-
13	330	Distribution Reservoirs & Standpipe	-	2.80%	-
14	331	Transmission and Distribution Mains	-	2.80%	-
15	333	Services	-	2.80%	-
16	334	Meters	-	2.80%	-
17	335	Hydrants	-	2.80%	-
18	336	Backflow Prevention Devices	-	2.80%	-
19	339	Other Plant and Miscellaneous Equipment	847,382	2.80%	23,727
20	340	Office Furniture and Fixtures	14,268,765	2.80%	399,525
21	341	Transportation Equipment	552,719	2.80%	15,476
22	342	Stores Equipment	-	2.80%	-
23	343	Tools and Work Equipment	405,643	2.80%	11,358
24	344	Laboratory Equipment	4,061	2.80%	114
25	345	Power Operated Equipment	249,261	2.80%	6,979
26	346	Communications Equipment	165,561	2.80%	4,636
27	347	Miscellaneous Equipment	-	2.80%	-
28	348	Other Tangible Plant	-	2.80%	-
29					
30		Company Requested Level of Total General Office Plant	$ 23,400,978		$ 655,227
31					
32		Less:			
33		RUCO OCRB Adjustment #11 - Remove Post Test Year Plant	551,208		
34					
35		RUCO Recommended Level of Total General Office Plant	$ 22,849,770		
36		4 Factor Allocation Factor	2.80%		
37					
38		RUCO Recommended Level of Allocated General Office Plant - See TJC-5	$ 639,794		
39					
40	Company Increase (Decrease) to General Office Plant-in-Service Allocation				$ 751,171
41	RUCO Increase (Decrease) to General Office Plant-in-Service Allocation				$ 655,227
42	RUCO Adjustment				$ (95,944)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJUSTMENT #10 - ACCUMULATED DEPRECIATION
ORIGINAL COST

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-10
PAGE 2 of 2
SURREBUTTAL TESTIMONY

Line No.	General Office Plant Allocation - Accumulated Depreciation		RUCO Accumulated Depreciation	4 Factor Allocation %	Allocated Accumulated Depreciation
1	301	Organization Cost	3,046	2.80%	85
2	302	Franchise Cost and Other Intangible Plant	211,596	2.80%	5,925
3	303	Land and Land Rights	-	2.80%	-
4	304	Structures and Improvements	2,354,430	2.80%	65,924
5	305	Collecting and Impounding Res.	-	2.80%	-
6	306	Lake River and Other Intakes	-	2.80%	-
7	307	Wells and Springs	-	2.80%	-
8	308	Infiltration Galleries and Tunnels	-	2.80%	-
9	309	Supply Mains	-	2.80%	-
10	310	Power Generation Equipment	-	2.80%	-
11	311	Electric Pumping Equipment	-	2.80%	-
12	320	Water Treatment Equipment	-	2.80%	-
13	330	Distribution Reservoirs & Standpipe	-	2.80%	-
14	331	Transmission and Distribution Mains	-	2.80%	-
15	333	Services	-	2.80%	-
16	334	Meters	-	2.80%	-
17	335	Hydrants	-	2.80%	-
18	336	Backflow Prevention Devices	-	2.80%	-
19	339	Other Plant and Miscellaneous Equipment	162,569	2.80%	4,552
20	340	Office Furniture and Fixtures	8,664,647	2.80%	242,610
21	341	Transportation Equipment	552,718	2.80%	15,476
22	342	Stores Equipment	-	2.80%	-
23	343	Tools and Work Equipment	192,488	2.80%	5,390
24	344	Laboratory Equipment	4,062	2.80%	114
25	345	Power Operated Equipment	249,257	2.80%	6,979
26	346	Communications Equipment	165,561	2.80%	4,636
27	347	Miscellaneous Equipment	-	2.80%	-
28	348	Other Tangible Plant	-	2.80%	-
29			$ 12,560,374		$ 351,690
30					
31	Company Increase (Decrease) to General Office Accumulated Depreciation				$ 403,188
32	RUCO Increase (Decrease) to General Office Accumulated Depreciation				$ 351,690
33	RUCO Adjustment to General Office Accumulated Depreciation				$ (51,498)

Chaparral City Water Company
Test Year Ended December 31, 2006
OCRB Rate Base Proforma Adjustments
Adjustment 11

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-11
SURREBUTTAL TESTIMONY

Line No.		
1	OCRB General Office Plant - Remove Post Test Year Plant	
2		
3	Company OCRB 2007 Post Test Year Plant - Account 303	$ 159,087
4	Company OCRB 2007 Post Test Year Plant - Account 340	392,121
5		
6	Total Company Post Test Year - General Office Plant	551,208
7		
8	Chaparral General Office Plant Allocator	2.80%
9		
10	Increase (Decrease) to OCRB General Office Plant	$ (15,434)
11		
12		
13	Company OCRB GO Plant Accumulated Depreciation - A/C	$ 12,560,374
14	RUCO OCRB Direct Plant Accumulated Depreciation	12,560,374
15	RUCO Adjustment	-
16		
17	Chaparral General Office Plant Allocator	2.80%
18		
19		
20	Increase (Decrease) to Accumulated Depreciation	$ -
21		
22		
23	Net Adjustment	$ (15,434)
24		
25		

SUPPORTING SCHEDULE
rcn_go_plant_Remove PTY Plant Adj.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
Original Cost Rate Base Proforma Adjustments
Adjustment 14

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-12
SURREBUTTAL TESTIMONY

Line No.				
1	Computation of CIAC Balances			
2				
3	Balance at 12/31/2003 per Decision		$	273,476
4	Additions 2004			272,024
5	Balance at 12/31/2004			545,500
6	Additions 2005			405,152
7	Balance at 12/31/2005			950,652
8	Additions 2006			5,337,445
9	Balance at 12/31/2006		$	6,288,097
10				
11	Computation of Accumulated Amortization CIAC Balances (Half-year Convention)			
12				
13	Balance at 12/31/2003 per Decision		$	15,334
14	2004 Amortization at composite rate	2.500%		10,237
15	Balance at 12/31/2004			25,571
16	2005 Amortization at composite rate	2.500% (9 months)		14,026
17	2005 Amortization at composite rate	3.3588% (3 months)		6,282
18	Balance at 12/31/2005			45,879
19	2006 Amortization at composite rate	3.3588%		121,568
20	Balance at 12/31/2006		$	167,447
21				
22	A.A. Balance per Computation		$	167,447
23	Balance at End of Test Year			99,136
24	Adjustment to A.A. CIAC			68,311
25				
26				
27	Company Adjustment		$	69,834
28	RUCO Adjustment			68,311
29				
30				
31				
32	Increase (Decrease) to Contributions-in-aid, Net		$	1,523

Reference:
Line 17 and 19 utilizes amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE - RCND

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-13
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) RUCO ADJUSTMENTS	(C) RUCO AS ADJUSTED
1	PLANT IN SERVICE	$ 80,783,568	$ (3,143,549)	$ 77,640,019
2	ACCUMULATED DEPRECIATION	(25,894,686)	3,771,719	(22,122,967)
3	NET PLANT IN SERVICE	$ 54,888,882	$ 628,170	$ 55,517,052
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-	-	-
5	TOTAL NET PLANT	$ 54,888,882	$ 628,170	$ 55,517,052
	Less:			
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(10,231,760)	109,513	(10,122,247)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(9,441,352)	(2,351)	(9,443,703)
8	CUSTOMER METER DEPOSITS	(819,845)	-	(819,845)
9	DEFERRED INCOME TAXES	(925,896)	-	(925,896)
10	INVESTMENT TAX CREDITS	-	-	-
11	SHARED GAIN ON WELL	(646,000)	(570,000)	(1,216,000)
	Plus:			
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010	-	424,010
13	WORKING CAPITAL	207,006	(100,122)	106,884
14	DEFERRED REGULATORY ASSETS	1,280,000	(1,280,000)	-
15	TOTAL RATE BASE	$ 34,735,045	$ (1,214,790)	$ 33,520,255

REFERENCES:
COLUMN (A): COMPANY SCHEDULE B-4 and B-4-A
COLUMN (B): SCHEDULE TJC-14, PAGES 1 and 2
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RCND RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ #1	(C) ADJ #2	(D) ADJ #3	(E) ADJ #4	(F) ADJ #5	(G) ADJ #6	(H) ADJ #7	(I) ADJ #8
1	PLANT IN SERVICE	$80,783,568	$ (118)	$ (17,807)	$ (441,470)	$ -	$(3,262,891)	$ 80,891	$ -	
2	ACCUMULATED DEPRECIATION	(25,894,686)	(1)	4,411	441,470	-	3,262,891	(3,265)		-
3	NET PLANT IN SERVICE	$54,888,882	$ (119)	$ (13,396)	$ (0)	$ -	$ 0	$ 77,626	$ -	$ -
4	CONSTRUCTION WORK IN PROGRESS (CWIP)	-								
5	TOTAL NET PLANT	$54,888,882	$ (119)	$ (13,396)	$ (0)	$ -	$ 0	$ 77,626	$ -	$ -
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)	(10,231,760)								
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET	(9,441,352)								
8	CUSTOMER METER DEPOSITS	(819,845)		-		-				
9	DEFERRED INCOME TAXES	(925,896)		-		-				
10	INVESTMENT TAX CREDITS	-								
11	SHARED GAIN ON WELL	(646,000)								
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS	424,010					-	-		
13	WORKING CAPITAL	207,006								
14	DEFERRED REGULATORY ASSETS	1,280,000								
15	TOTAL RATE BASE	$34,735,045	$ (119)	$ (13,396)	$ (0)	$ -	$ 0	$ 77,626	$ -	$ -

ADJUSTMENT #:		REFERENCE:
Adjustment #1:	RCN Factor Rounding Adjustment	SCHEDULE TJC-16
Adjustment #2:	Correct Account 304 Index Factors on 3 Line Items	SCHEDULE TJC-17
Adjustment #3:	Remove Wells 8 & 9 from Plant-in-Service and Accumulated Depreciation	SCHEDULE TJC-18
Adjustment #4:	Intentionally Left Blank	
Adjustment #5:	Remove Shea Water Treatment Plant - Out of Service	SCHEDULE TJC-19
Adjustment #6:	Remove Expensed Plant Items and Capitalize	SCHEDULE TJC-20
Adjustment #7:	Intentionally Left Blank	
Adjustment #8:	Intentionally Left Blank	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF RCND RATE BASE ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-14
PAGE 2 of 2
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(J) ADJ #9	(K) ADJ #10	(L) ADJ #11	(M) ADJ #12	(N) ADJ #13	(O) ADJ #14	(P) ADJ #15	(Q) ADJ #16	(R) RUCO ADJUSTED
1	PLANT IN SERVICE		$ (126,720)	$ (15,434)	$ -	$ -	$ -	$ 640,000	$ -	$ 77,640,019
2	ACCUMULATED DEPRECIATION		67,617	(1,404)			-			(22,122,967)
3	NET PLANT IN SERVICE	$ -	$ (59,103)	$ (16,837)	$ -	$ -	$ -	$ 640,000	$ -	$ 55,517,052
4	CONSTRUCTION WORK IN PROGRESS (CWIP)									-
5	TOTAL NET PLANT	$ -	$ (59,103)	$ (16,837)	$ -	$ -	$ -	$ 640,000	$ -	$ 55,517,052
	Less:									
6	ADVANCES IN AID OF CONSTRUCTION (AIAC)					109,513				(10,122,247)
7	CONTRIBUTIONS IN AID OF CONSTRUCTION (CIAC) - NET						(2,351)			(9,443,703)
8	CUSTOMER METER DEPOSITS	-		-						(819,845)
9	DEFERRED INCOME TAXES	-		-						(925,896)
10	INVESTMENT TAX CREDITS									-
11	SHARED GAIN ON WELL				(570,000)					(1,216,000)
	Plus:									
12	UNAMORTIZED DEBT ISSUANCE COSTS				-	-		-	-	424,010
13	WORKING CAPITAL								(100,122)	106,884
14	DEFERRED REGULATORY ASSETS							(1,280,000)		-
15	TOTAL RATE BASE	$ -	$ (59,103)	$ (16,837)	$ (570,000)	$ 109,513	$ (2,351)	$ (640,000)	$ (100,122)	$ 33,520,255

ADJUSTMENT #:	REFERENCE:
Adjustment #9: Intentionally Left Blank	
Adjustment #10: Correct 4-Factor General Office Plant & Accumulated Depreciation Allocation Factor	SCHEDULE TJC-24, PAGES 1 and 2
Adjustment #11: Remove Post Test Year GO Plant in Account 303 & 340	SCHEDULE TJC-22
Adjustment #12: Well Settlement Proceeds	
Adjustment #13: AIAC RCN Factor Adjustment	SCHEDULE TJC-23
Adjustment #14: To correct CIAC amortization rate authorized in Decision No. 68176 per Bourassa Rebuttal Schedule C-2, page 2.	SCHEDULE TJC-24
Adjustment #15: To Remove Deferred Regulatory Asset - Additional CAP Allocation	SCHEDULE TJC-25

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #1 - TOTAL RCND UTILITY PLANT IN SERVICE (UPIS)
AND ACCUMULATED DEPRECIATION

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-15
SURREBUTTAL TESTIMONY

Total Chaparral City Water RCND UPIS:

Line No.	Description	Amount
1	Chaparral City Water Direct Plant Per Company	$ 79,791,440
2	Chaparral City Water Direct Plant Per RUCO	76,741,731
3	RUCO's Direct Plant Adjustment	$ (3,049,709)
4	Chaparral City Water General Office Plant Allocation Per Company	$ 992,128
5	Chaparral City Water General Office Plant Allocation Per RUCO	849,978
6	RUCO's General Office Plant Allocation Adjustment	$ (142,150)
7	Total Chaparral City Water Gross RCN UPIS Per Company	$ 80,783,568
8	Total Chaparral City Water Gross UPIS Per RUCO	77,591,709
9	Total RUCO Gross UPIS Adjustment	$ (3,191,859)

Total Chaparral City Water RCND Accumulated Depreciation:

10	Chaparral City Water Direct Plant Accumulated Depreciation Per Company	$ 25,365,293
11	Chaparral City Water Direct Plant Accumulated Depreciation Per RUCO	21,287,651
12	RUCO's Direct Plant Accumulated Depreciation Adjustment	(4,077,642)
13	Chaparral City Water General Office Allocation of Accumulated Depreciation Per Company	529,393
14	Chaparral City Water General Office Allocation of Accumulated Depreciation Per RUCO	463,180
15	RUCO's General Office Allocation of Accumulated Depreciation Adjustment	(66,213)
16	Total Chaparral City Water Accumulated Depreciation Per Company	25,894,686
17	Total Chaparral City Water Accumulated Depreciation Per RUCO	21,750,830
18	Total RUCO Accumulated Depreciation Adjustment	$ (4,143,856)
19	RUCO's Chaparral City Water Plant Adjustment - Net of Accumulated Depreciation	$ 951,996

Supporting Schedules:
\TJC-4(a)Schedules\Pages1-5\DirectPlant\AZ-CorpPlant\CentralDivisionPlant\
Regarding RUCO's Eastern Div. treatment see Company response to RUCO DR 2.06

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 1

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-16
SURREBUTTAL TESTIMONY

Line No.		
1	RCN Direct Plant - Rounding Adjustment	
2		
3	Company RCN Trended Direct Plant	$ 79,791,440
4	RUCO RCN Trended Direct Plant	79,791,322
5	RUCO Adjustment	(118)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (118)
9		
10		
11	Company RCN Trended Direct Plant Accumulated Depreciation	$ 24,502,143
12	RUCO RCN Trended Direct Plant Accumulated Depreciation	24,502,143
13	RUCO Adjustment	1
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ 1
17		
18		
19	Net Adjustment	$ (119)
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_correct_RCN Factor Rounding.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 2

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-17
SURREBUTTAL TESTIMONY

Line No.		
1	RCN Direct Plant - Correct Account 304 Index Factor	
2		
3	Company RCN Trended Direct Plant - Account 304	$ 1,965,394
4	RUCO RCN Trended Direct Plant - Account 304	1,947,587
5	RUCO Adjustment	(17,807)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (17,807)
9		
10		
11	Company RCN Trended Direct Plant Accumulated Depreciation - A/C 304	$ 486,810
12	RUCO RCN Trended Direct Plant Accumulated Depreciation - A/C 304	482,399
13	RUCO Adjustment	(4,411)
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ (4,411)
17		
18		
19	Net Adjustment	$ (13,396)
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_correct_Acct 304_Index.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 3

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-18
SURREBUTTAL TESTIMONY

Line No.			
1	RCN Direct Plant - Remove Wells 8 & 9 - Out of Service		
2			
3	Company RCN Trended Direct Plant - Wells 8 & 9 from Account 307	$	441,470
4	RUCO RCN Trended Direct Plant - Wells 8 & 9 from Account 307		-
5	RUCO Adjustment		(441,470)
6			
7			
8	Increase (Decrease) to RCN Direct Plant	$	(441,470)
9			
10			
11	Company RCN Trended Direct Plant Accumulated Depreciation - A/C 307	$	150,254
12	RUCO RCN Trended Direct Plant Accumulated Depreciation - A/C 307		(291,216)
13	RUCO Adjustment		(441,470)
14			
15			
16	Increase (Decrease) to Accumulated Depreciation	$	(441,470)
17			
18			
19	Net Adjustment	$	(0)
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Well 8_9.xls		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 5

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-19
SURREBUTTAL TESTIMONY

Line No.		
1	RCND Direct Plant - Remove Shea Water Treatment Plant 1 - Out of Service	
2		
3	Company RCN Direct Plant - Account 320	$ 9,969,130
4	RUCO RCN Direct Plant - Account 320	6,706,239
5	RUCO Adjustment	(3,262,891)
6		
7		
8	Increase (Decrease) to RCN Direct Plant	$ (3,262,891)
9		
10		
11	Company RCN Direct Plant Accumulated Depreciation - A/C 320	$ 2,695,725
12	RUCO RCN Direct Plant Accumulated Depreciation - A/C 320	(567,166)
13	RUCO Adjustment	(3,262,891)
14		
15		
16	Increase (Decrease) to Accumulated Depreciation	$ (3,262,891)
17		
18		
19	Net Adjustment	$ 0
20		
21		
22		
23		
24	SUPPORTING SCHEDULE	
25	rcn_plant_Remove Shea Water Treatment Plant 1.xls	

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 6

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-20
SURREBUTTAL TESTIMONY

Line No.			
1	RCRB Direct Plant - Remove Expensed Items and Capitalize		
2			
3	RUCO RCRB Direct Plant - Account 304	$	11,590
4	RUCO RCRB Direct Plant - Account 311		26,084
5	RUCO RCRB Direct Plant - Account 339		43,217
6	RUCO Adjustment		80,891
7			
8	Increase (Decrease) to RCRB Direct Plant	$	80,891
9			
10			
11	Accept Company's Adjustment to Accumulated Depreciation		3,265
12			
13	Increase (Decrease) to RCRB Accumulated Depreciation	$	3,265
14			
15			
16	Net Adjustment	$	77,626
17			
18			
19			
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Expensed Items & Capitalize.xls		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 10

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-21
PAGE 1 of 2
SURREBUTTAL TESTIMONY

Line No.					
1	General Office Plant Allocation - Plant-in-service				RUCO
2			Company Trended	4 Factor	4 Factor Allocated
3	NARUC	NARUC Description	RCN Value	Allocation %	Trended RCN
4	301	Organization Cost	16,452	2.80%	461
5	302	Franchise Cost and Other Intangible Plant	1,089,237	2.80%	30,499
6	303	Land and Land Rights	-	2.80%	-
7	304	Structures and Improvements	9,379,730	2.80%	262,632
8	305	Collecting and Impounding Res.	-	2.80%	-
9	306	Lake River and Other Intakes	-	2.80%	-
10	307	Wells and Springs	-	2.80%	-
11	308	Infiltration Galleries and Tunnels	-	2.80%	-
12	309	Supply Mains	-	2.80%	-
13	310	Power Generation Equipment	-	2.80%	-
14	311	Electric Pumping Equipment	(1,860)	2.80%	(52)
15	320	Water Treatment Equipment	-	2.80%	-
16	330	Distribution Reservoirs & Standpipe	-	2.80%	-
17	331	Transmission and Distribution Mains	-	2.80%	-
18	333	Services	-	2.80%	-
19	334	Meters	-	2.80%	-
20	335	Hydrants	-	2.80%	-
21	336	Backflow Prevention Devices	-	2.80%	-
22	339	Other Plant and Miscellaneous Equipment	1,055,403	2.80%	29,551
23	340	Office Furniture and Fixtures	17,188,237	2.80%	481,271
24	341	Transportation Equipment	606,575	2.80%	16,984
25	342	Stores Equipment	-	2.80%	-
26	343	Tools and Work Equipment	663,298	2.80%	18,572
27	344	Laboratory Equipment	15,358	2.80%	430
28	345	Power Operated Equipment	634,172	2.80%	17,757
29	346	Communications Equipment	260,818	2.80%	7,303
30	347	Miscellaneous Equipment	-	2.80%	-
31	348	Other Tangible Plant	-	2.80%	-
32					
33			$ 30,907,420		$ 865,408
34					
35					
36	Company Computed General Office Plant				$ 992,128
37	RUCO Computed General Office Plant				865,408
38					
39	Increase (Decrease) to Plant -in-service				(126,720)

SUPPORTING SCHEDULE
rcn_plant_correct_RCN Factor Rounding.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 10

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-21
PAGE 2 of 2
SURREBUTTAL TESTIMONY

Line No.

1 General Office Plant Allocation - Accumulated Depreciation

Line No.	NARUC	NARUC Description	Company Trended RCN Value Accum. Depr.	4 Factor Allocation %	4 Factor Allocated Trended RCN Accum. Depr.
6	301	Organization Cost	3,046	2.80%	85
7	302	Franchise Cost and Other Intangible Plant	211,596	2.80%	5,925
8	303	Land and Land Rights	-	2.80%	-
9	304	Structures and Improvements	3,805,726	2.80%	106,560
10	305	Collecting and Impounding Res.	-	2.80%	-
11	306	Lake River and Other Intakes	-	2.80%	-
12	307	Wells and Springs	-	2.80%	-
13	308	Infiltration Galleries and Tunnels	-	2.80%	-
14	309	Supply Mains	-	2.80%	-
15	310	Power Generation Equipment	-	2.80%	-
16	311	Electric Pumping Equipment	-	2.80%	-
17	320	Water Treatment Equipment	-	2.80%	-
18	330	Distribution Reservoirs & Standpipe	-	2.80%	-
19	331	Transmission and Distribution Mains	-	2.80%	-
20	333	Services	-	2.80%	-
21	334	Meters	-	2.80%	-
22	335	Hydrants	-	2.80%	-
23	336	Backflow Prevention Devices	-	2.80%	-
24	339	Other Plant and Miscellaneous Equipment	202,477	2.80%	5,669
25	340	Office Furniture and Fixtures	10,437,484	2.80%	292,250
26	341	Transportation Equipment	606,574	2.80%	16,984
27	342	Stores Equipment	-	2.80%	-
28	343	Tools and Work Equipment	314,752	2.80%	8,813
29	344	Laboratory Equipment	15,362	2.80%	430
30	345	Power Operated Equipment	634,162	2.80%	17,757
31	346	Communications Equipment	260,818	2.80%	7,303
32	347	Miscellaneous Equipment	-	2.80%	-
33	348	Other Tangible Plant	-	2.80%	-
34					
35			$ 16,491,997		$ 461,776

36		
37	Company Computed General Office Accumulated Depreciation	$ 529,393
38	RUCO Computed General Office Accumulated Depreciation	461,776
39		
40	Increase (Decrease) to Accumulated Depreciation	$ (67,617)

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 11

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-22
SURREBUTTAL TESTIMONY

Line No.		
1	RCN General Office Plant - Remove Post Test Year Plant	
2		
3	Company RCN Trended 2007 Post Test Year Plant - Account 303	$ 159,087
4	Company RCN Trended 2007 Post Test Year Plant - Account 340	392,121
5		
6	Total Company Post Test Year - General Office Plant	551,208
7		
8	4-Factor Allocator	2.80%
9		
10	Increase (Decrease) to RCN General Office Plant	$ (15,434)
11		
12		
13	Company RCN Trended GO Plant Accumulated Depreciation	$ 16,491,997
14	RUCO RCN Trended Direct Plant Accumulated Depreciation	16,542,128
15	RUCO Adjustment	50,131
16		
17	Chaparral General Office Plant Allocator	2.80%
18		
19		
20	Increase (Decrease) to Accumulated Depreciation	$ 1,404
21		
22		
23	Net Adjustment	$ (16,837)
24		
25		

SUPPORTING SCHEDULE
rcn_go_plant_Remove PTY Plant Adj.xls

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 13

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-23
SURREBUTTAL TESTIMONY

Line No.		
1	RCN General Office Plant - Adjust AIAC RCN Factor Balance	
2		
3	Company RCN Trended AIAC Balance	$ (10,231,760)
4	RUCO RCN Trended AIAC Balance	(10,122,247)
5		
6	Difference in Accum. Depre. - Line 7 minus Line 4	(109,513)
7		
8		
9	Increase (Decrease) to RCN AIAC Balance	$ (109,513)
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		

SUPPORTING SCHEDULE
SCHEDULE TJC-2

Chaparral City Water Company
Test Year Ended December 31, 2006
RCN Rate Base Proforma Adjustments
Adjustment 14

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-24
SURREBUTTAL TESTIMONY

Line No.			
1	RCN Computation of CIAC Balance		
2			
3	Company CIAC Balance Per OCRB Schedule TJC-2	$	(6,119,129)
4			
5	RUCO CIAC Balance Per OCRB Schedule TJC-2		(6,120,652)
6			
7	Increase (Decrease) to OCRB CIAC Balance	$	1,523
8			
9	RUCO RCN CIAC Trended Factor		1.5437
10			
11	Increase (Decrease) to RCN CIAC Balance	$	2,351
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29	Reference:		
30	SCHEDULE TJC-2		
31	Line 17 and 19 utilizes amortization rate authorized in Decision No. 68176		
32	per Bourassa Rebuttal Schedule C-2, page 2.		

Chaparral City Water Company
Test Year Ended December 31, 2006
RCND Rate Base Proforma Adjustments
Adjustment 15

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-25
SURREBUTTAL TESTIMONY

Line No.		
1	Remove Deferred Regulatory Asset and Place 1/2 in UPIS - Additional CAP Allocation	
2		
3	Company Deferred Regulatory Asset	$ 1,280,000
4		
5	RUCO Adjustment	(1,280,000)
6		
7	Increase (Decrease) to RCN Rate Base	$ (1,280,000)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL ADJUSTMENT
WORKING CAPITAL ADJUSTMENT SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26

SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT
1	Cash Working Capital per Company	$ -
2	Cash Working Capital per RUCO	(100,122)
3	RUCO Adjustment	(100,122)
4	Materials & Supplies Inventories per Company	$ 14,521
5	Materials & Supplies Inventories per RUCO	14,521
6	RUCO Adjustment	-
7	Prepayments per Company	$ 192,485
8	Prepayments per RUCO	192,485
9	RUCO Adjustment	-
10	Total Working Capital Adjustment	$ (100,122)

REFERENCES:
Lines 1, 4, and 7: Company Schedule B-1, Page 1
Line 2: See RUCO Schedule TJC-29, Page 2 of 14
Line 10: Line 3 + Line 6 + Line 9

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL ADJUSTMENT
LEAD/LAG CALCULATION

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
PAGE 2 OF 15
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) EXPENSES PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED EXPENSES		(D) RUCO (LEAD)/LAG DAYS	(E) RUCO $ DAYS
1	SALARIES and WAGES	$ 969,244	$ -	969,244	*	12.00	$ 11,630,928
2	PURCHASED WATER	831,656	(10,186)	821,470	*	(36.88)	(30,295,639)
3	PURCHASED POWER	602,982	11,619	614,601	*	35.05	21,544,177
4	CHEMICALS	127,457	-	127,457	*	(50.91)	(6,488,529)
5	REPAIRS & MAINTENANCE	104,609	(43,217)	61,392	*	30.00	1,841,760
6	OFFICE SUPPLIES & EXPENSE	19,800	-	19,800	*	22.70	449,550
7	OUTSIDE SERVICES	266,544	(109,049)	157,495	*	29.09	4,581,765
8	WATER TESTING	43,458	(17,820)	25,638	*	15.72	402,954
9	TRANSPORTATION EXPENSES	70,430	-	70,430	*	30.00	2,112,900
10	INSURANCE - GENERAL LIABILITY	(1,294)	-	(1,294)	*	30.00	(38,820)
11	RENTS	-	-	-	*	0.00	-
12	MISCELLANEOUS EXPENSE	1,259,948	38,164	1,298,112	*	30.00	38,943,360
13	TAXES OTHER THAN INCOME	47,873	-	47,873	*	75.62	3,620,156
14	PROPERTY TAXES	295,813	(77,724)	218,089	*	212.50	46,343,887
15	STATE INCOME TAXES	48,745	114,912	163,657	*	62.65	10,253,093
16	FEDERAL INCOME TAXES	221,275	521,525	742,800		37.50	27,854,986
17	INTEREST	367,737	(55,249)	312,488	*	90.00	28,123,944
18	TOTAL OPERATING EXPENSES	$ 5,276,277	$ 372,974	$ 5,649,251			$ 160,880,473
19	EXPENSE LAG					28.48	
20	REVENUE LAG					22.01	
21	NET LAG					(6.47)	
22	CASH WORKING CAPITAL	$ (100,122)					

NOTE
* RUCO RECOMMENDED LEVEL OF CASH WORKING CAPITAL EXPENSES

ARIZONA-AMERICAN WATER COMPANY
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
REVENUE LEAD/LAG ANALYSIS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
PAGE 3 OF 15
SURREBUTTAL TESTIMONY

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)
	SERVICE PERIOD									
LINE NO.	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	BILL DATE	BILLING LAG	DUE DATE	PAY LAG	REVENUE LAG DAYS	AMOUNT OF BILL	RUCO $ DAYS
1	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	$ 34.07	$ 647
2	3/1/2006	3/31/2006	15.00	3/21/2006	-10.00	4/11/2006	21.00	26.00	28.57	743
3	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	25.82	491
4	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	25.82	697
5	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	25.82	697
6	3/1/2006	3/31/2006	15.00	3/20/2006	-11.00	4/10/2006	21.00	25.00	31.33	783
7	3/1/2006	3/31/2006	15.00	3/13/2006	-18.00	4/3/2006	21.00	18.00	52.24	940
8	3/1/2006	3/31/2006	15.00	3/13/2006	-18.00	4/3/2006	21.00	18.00	82.49	1,485
9	3/1/2006	3/31/2006	15.00	3/6/2006	-25.00	3/27/2006	21.00	11.00	52.24	575
10	3/1/2006	3/31/2006	15.00	3/14/2006	-17.00	4/4/2006	21.00	19.00	57.74	1,097
11	3/1/2006	3/31/2006	15.00	3/21/2006	-10.00	4/11/2006	21.00	26.00	41.22	1,072
12	3/1/2006	3/31/2006	15.00	3/3/2006	-28.00	3/24/2006	21.00	8.00	63.23	506
13	3/1/2006	3/31/2006	15.00	3/7/2006	-24.00	3/28/2006	21.00	12.00	41.22	495
14	3/1/2006	3/31/2006	15.00	3/15/2006	-16.00	4/5/2006	21.00	20.00	301.83	6,037
15	3/1/2006	3/31/2006	15.00	3/22/2006	-9.00	4/12/2006	21.00	27.00	549.86	14,846
16										
17									$ 1,414	$ 31,110
18										
19										
20	RUCO REVENUE LAG DAYS							22.01		

REFERENCES:
15 Chaparral City Water Bills

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
INTEREST EXPENSE (LEAD)/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Bond due 2007	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	1.75%	$ (0)
					12/31/2006	182.00	1.75%	3
2	Bond due 2011	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	7.28%	(0)
					12/31/2006	182.00	7.28%	13
3	Bond due 2022	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	33.58%	(1)
					12/31/2006	182.00	33.58%	61
4	Bond due 2022	1/1/2006	12/31/2006	7/2/2006	6/30/2006	(2.00)	7.39%	(0)
					12/31/2006	182.00	7.39%	13
5	TOTAL PAYMENTS & DOLLAR DAYS						100.00%	$ 90
6	**INTEREST EXPENSE LAG DAYS**							90.00

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PROPERTY TAX LAG DAYS ANALYSIS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26

SURREBUTTAL TESTIMONY

	(A)	(B)	(C)	(D)	(E)
	SERVICE PERIOD				
LINE NO.	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	DUE DATE	EXPENSE LAG DAYS
1	1/1/2005	12/31/2005	7/1/2005	10/31/2005	61.00
2				4/30/2006	151.50
3	**TOTAL PROPERTY TAX LAG DAYS**				212.50

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF FEDERAL INCOME TAX LAG

LINE NO.	(A) PAYMENT DATE	-	(B) SERVICE PERIOD MIDPOINT	=	(C) (LEAD)/LAG DAYS	X	(D) PAYMENT AMOUNT	=	(E) DOLLAR DAYS
1	04/15/05		07/01/05		(77.00)		25.00%		(19.25)
2	06/15/05		07/01/05		(16.00)		25.00%		(4.00)
3	09/15/05		07/01/05		76.00		25.00%		19.00
4	12/15/05		07/01/05		167.00		25.00%		41.75
5	TOTALS						100.00%		37.50
6	INCOME TAX LAG				37.50				

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF STATE INCOME TAX LAG

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26

SURREBUTTAL TESTIMONY

LINE NO.	(A) PAYMENT DATE	-	(B) SERVICE PERIOD MIDPOINT	=	(C) (LEAD)/LAG DAYS	X	(D) PAYMENT AMOUNT	=	(E) DOLLAR DAYS
1	04/15/99		07/01/99		(77.00)		22.50%		$ (17)
2	06/15/99		07/01/99		(16.00)		22.50%		(4)
3	09/15/99		07/01/99		76.00		22.50%		17
4	12/15/99		07/01/99		167.00		22.50%		38
5	04/15/00		07/01/99		289.00		10.00%		29
6	TOTALS						1.00		62.65
7	INCOME TAX LAG				62.65				

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
OUTSIDE SERVICES EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	TNT Technology Co.	12/18/2006	12/24/2006	12/21/2006	1/25/2007	35.00	$ 1,060	$ 37,100
2	NYE Tru Landscape	11/1/2005	11/30/2005	11/15/2005	12/30/2005	44.50	22,875	1,017,938
3	Quadna	2/6/2006	2/10/2006	2/8/2006	2/23/2006	15.00	35,433	531,495
4	TMV	5/1/2006	5/31/2006	5/16/2006	6/15/2006	30.00	500	15,000
5	Workplace Safety	9/23/2005	9/30/2005	9/26/2005	9/29/2005	2.50	244	610
6	Fennemore Craig	7/1/2006	7/31/2006	7/16/2006	8/21/2006	36.00	21,221	763,956
7	Total						$ 81,333	$ 2,366,099
8	Lead/Lag Days						29.09	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PURCHASED POWER EXPENSE LEAD/LAG ANALYSIS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26

SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION		(A) SERVICE PERIOD BEGINNING	(B) SERVICE PERIOD ENDING	(C) MID-POINT SERVICE PERIOD	(D) PAYMENT DATE	(E) PAYMENT (LEAD)/LAG	(F) PAYMENT AMOUNT	(G) DOLLAR DAYS
	APS:								
1		Jan-08	12/11/2007	1/9/2008	12/25/2007	1/31/2008	36.50	$ 17,136.95	$ 625,499
2		Dec-07	11/8/2007	12/11/2007	11/24/2007	12/31/2007	36.50	22,160.38	808,854
3		Nov-07	10/10/2007	11/8/2007	10/24/2007	11/30/2007	36.50	29,886.99	1,090,875
4		Oct-07	9/11/2007	10/10/2007	9/25/2007	10/29/2007	33.50	30,158.30	1,010,303
5	Total							99,342.62	3,535,530.73
6	Lead/Lag Days							35.59	
	SRP:								
7		Dec-07			15.5	23.5	39.00	$ 18,238.75	$ 711,311
8		Oct-07			15	21	36.00	13,647.95	491,326
9		Sep-07			16.5	16.5	33.00	13,996.67	461,890
10		Aug-07			15	13	28.00	12,379.76	346,633
11	Total							$ 58,263.13	$ 2,011,161
12	Lead/Lag Days							34.52	
13	Average Lead/Lag Days							35.05	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CALCULATION OF STATE INCOME TAX LAG

LINE NO.	(A) SERVICE PERIOD	(B) SERVICE PERIOD MIDPOINT	(C) PAY DATE	(D) LAG DAYS
1	14 Days	7 Days	5	12 Days

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
TAXES OTHER THAN INCOME

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
PAGE 11 OF 15
SURREBUTTAL TESTIMONY

LINE NO.	(A) SERVICE PERIOD	(B) SERVICE PERIOD MIDPOINT	(C) PAY DATE	(D) LAG DAYS
1	91.25 Days	45.62 Days	30	75.62

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
OFFICE SUPPLIES EXPENSE LEAD/LAG ANALYSIS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
PAGE 12 OF 15
SURREBUTTAL TESTIMONY

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Ikon	11/8/2005	2/8/2006	12/24/2005	2/18/2006	56.00	$ 350.98	$ 19,655
2	Ikon	5/8/2006	8/8/2006	6/23/2006	8/18/2006	56.00	336.79	18,860
3	Ikon	8/8/2006	11/8/2006	9/23/2006	11/18/2006	56.00	382.83	21,438
4	Robertson Consulting	7/6/2006	7/24/2006	7/15/2006	7/24/2006	9.00	300.00	2,700
5	Robertson Consulting	8/25/2006	9/22/2006	9/8/2006	9/22/2006	14.00	725.89	10,162
6	Laser Pros	1/23/2006	1/26/2006	1/24/2006	1/26/2006	1.50	160.85	241
7	OPACS	1/9/2006	2/8/2006	1/24/2006	2/8/2006	15.00	395.01	5,925
8	Laser Pros	9/19/2006	9/20/2006	9/19/2006	9/20/2006	0.50	139.26	70
9	OPACS	1/20/2006	2/19/2006	2/4/2006	2/19/2006	15.00	460.07	6,901
10	OPACS	5/12/2006	6/11/2006	5/27/2006	6/11/2006	15.00	178.54	2,678
11	OPACS	7/28/2006	8/27/2006	8/12/2006	8/27/2006	15.00	309.78	4,647
12	OPACS	8/7/2006	9/6/2006	8/22/2006	9/6/2006	15.00	338.59	5,079
13	Pitney Bowes	8/24/2006	8/30/2006	8/27/2006	8/30/2006	3.00	189.99	570
14	OPACS	9/22/2006	10/22/2006	10/7/2006	10/22/2006	15.00	175.70	2,636
15	Network Supply Resource	9/12/2006	10/23/2006	10/2/2006	10/23/2006	20.50	298.00	6,109
5	Total						4,742.28	107,671.29
6	Lead/Lag Days						22.70	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
WATER TESTING EXPENSE LEAD/LAG ANALYSIS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-26
PAGE 13 OF 15
SURREBUTTAL TESTIMONY

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Del Mar Analytical	6/15/2006	7/17/2006	7/1/2006	7/17/2006	16.00	$ 1,800.00	$ 28,800
2	Del Mar Analytical	2/28/2006	3/30/2006	3/15/2006	3/30/2006	15.00	1,800.00	27,000
3	Test America	8/14/2006	9/13/2006	8/29/2006	9/13/2006	15.00	4,450.56	66,758
4	Water Trax	1/17/2006	2/18/2006	2/2/2006	2/18/2006	16.00	4,205.62	67,290
5	MWH Laboratories	1/24/2006	3/1/2006	2/11/2006	3/1/2006	18.00	1,865.00	33,570
6	MWH Laboratories	1/24/2006	2/13/2006	2/3/2006	2/13/2006	10.00	130.00	1,300
7	Test America	8/14/2006	9/13/2006	8/29/2006	9/13/2006	15.00	1,020.00	15,300
5	Total						15,271.18	240,018.33
6	Lead/Lag Days						15.72	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
CHEMICAL EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	Hill Brothers	12/8/2005	1/9/2006	12/24/2005	1/7/2006	14.00	$ 1,513.00	$ 21,182
2	Hill Brothers	1/9/2006	1/19/2006	1/14/2006	2/8/2006	25.00	1,406.00	35,150
3	Hill Brothers	1/19/2006	2/2/2006	1/26/2006	2/18/2006	23.00	1,406.00	32,338
4	Hill Brothers	2/2/2006	2/13/2006	2/7/2006	3/1/2006	21.50	1,406.00	30,229
5	Hill Brothers	2/13/2006	2/24/2006	2/18/2006	3/12/2006	21.50	1,620.00	34,830
6	Hill Brothers	2/24/2006	3/8/2006	3/2/2006	3/23/2006	21.00	1,406.00	29,526
7	Hill Brothers	3/8/2006	3/24/2006	3/16/2006	4/7/2006	22.00	1,406.00	30,932
8	Hill Brothers	3/24/2006	4/6/2006	3/30/2006	4/23/2006	23.50	1,406.00	33,041
9	Hill Brothers	4/6/2006	4/17/2006	4/11/2006	5/5/2006	23.50	1,620.00	38,070
10	Hill Brothers	4/17/2006	5/3/2006	4/25/2006	5/16/2006	21.00	1,620.00	34,020
11	Hill Brothers	5/3/2006	5/10/2006	5/6/2006	6/2/2006	26.50	1,299.00	34,424
12	Hill Brothers	5/10/2006	5/17/2006	5/13/2006	6/9/2006	26.50	1,620.00	42,930
13	Hill Brothers	5/17/2006	5/31/2006	5/24/2006	6/16/2006	23.00	1,620.00	37,260
14	Hill Brothers	5/31/2006	6/6/2006	6/3/2006	6/30/2006	27.00	2,155.00	58,185
15	Hill Brothers	6/6/2006	6/14/2006	6/10/2006	7/5/2006	25.00	2,155.00	53,875
16	Hill Brothers	6/14/2006	6/23/2006	6/18/2006	7/13/2006	24.50	2,155.00	52,798
17	Hill Brothers	6/23/2006	6/30/2006	6/26/2006	7/22/2006	25.50	2,155.00	54,953
18	NTU Technologies	2/23/2006	8/3/2006	5/14/2006	3/22/2006	(53.50)	14,229.60	(761,284)
19	NTU Technologies	8/3/2006	12/14/2006	10/8/2006	9/2/2006	(36.50)	13,261.60	(484,048)
20	Thatcher	1/1/2006	12/31/2006	7/2/2006	1/31/2006	(152.00)	21,066.97	(3,202,179)
21	Engineered Sales	1/1/2006	12/31/2006	7/2/2006	1/31/2006	(152.00)	1,008.91	(153,354)
22	Total						77,535.08	(3,947,124.26)
23	Lead/Lag Days						(50.91)	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
RATE BASE ADJ. #16 - WORKING CAPITAL
PURCHASED WATER EXPENSE LEAD/LAG ANALYSIS

		(A)	(B)	(C)	(D)	(E)	(F)	(G)
		SERVICE PERIOD						
LINE NO.	DESCRIPTION	BEGINNING	ENDING	MID-POINT SERVICE PERIOD	PAYMENT DATE	PAYMENT (LEAD)/LAG	PAYMENT AMOUNT	DOLLAR DAYS
1	CAP - Capital Charge #1	1/1/2008	6/30/2008	3/31/2008	11/20/2007	(132.50)	$ 73,269.00	$ (9,708,143)
2	CAP - M&I	1/1/2008	1/31/2008	1/16/2008	12/20/2007	(27.00)	54,061.58	(1,459,663)
3	CAP - M&I	2/1/2008	2/29/2008	2/15/2008	1/20/2008	(26.00)	54,061.58	(1,405,601)
4	CAP - M&I	3/1/2008	3/31/2008	3/16/2008	2/20/2008	(25.00)	54,061.58	(1,351,540)
5	CAP - M&I	4/1/2008	4/30/2008	4/15/2008	3/20/2008	(26.50)	27,286.58	(723,094)
6	CAP - Capital Charge #2	7/1/2008	12/31/2008	9/30/2008	5/20/2008	(133.50)	93,544.50	(12,488,191)
7	CAP - M&I	5/1/2008	5/31/2008	5/16/2008	4/20/2008	(26.00)	54,061.58	(1,405,601)
8	CAP - M&I	6/1/2008	6/30/2008	6/15/2008	5/20/2008	(26.50)	54,061.58	(1,432,632)
9	CAP - M&I	7/1/2008	7/31/2008	7/16/2008	6/20/2008	(26.00)	54,061.58	(1,405,601)
10	CAP - M&I	8/1/2008	8/31/2008	8/16/2008	7/20/2008	(27.00)	54,061.58	(1,459,663)
11	CAP - M&I	9/1/2008	9/30/2008	9/15/2008	8/20/2008	(26.50)	54,061.58	(1,432,632)
12	CAP - M&I	10/1/2008	10/31/2008	10/16/2008	9/20/2008	(26.00)	54,061.58	(1,405,601)
13	CAP - M&I	11/1/2008	11/30/2008	11/15/2008	10/20/2008	(26.50)	54,061.58	(1,432,632)
14	CAP - M&I	12/1/2008	12/31/2008	12/16/2008	11/20/2008	(26.00)	54,061.58	(1,405,601)
15	CAP - CAGRD	1/1/2007	12/31/2007	7/2/2007	10/15/2008	471.00	18,560.00	8,741,760
16	Total						807,337.46	(29,774,433.45)
17	Lead/Lag Days						(36.88)	

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING INCOME - TEST YEAR AND RUCO PROPOSED

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-27
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY TEST YEAR AS FILED	(B) RUCO TEST YEAR ADJUSTMENTS	(C) RUCO TEST YEAR AS ADJUSTED	(D) RUCO PROPOSED CHANGES	(E) RUCO RECOMMENDED
	REVENUES - WATER:					
1	WATER REVENUES	$ 7,364,411	$ 58,310	$ 7,422,721	$ 1,144,478	$ 8,567,199
2	UNMETERED WATER REVENUES	-	-	-		-
3	OTHER WATER REVENUES	82,289	-	82,289		82,289
4	TOTAL REVENUES	$ 7,446,700	$ 58,310	$ 7,505,010	$ 1,144,478	$ 8,649,488
	OPERATING EXPENSES:					
5	SALARIES AND WAGES	$ 969,244	$ -	$ 969,244	$ -	$ 969,244
6	PURCHASED WATER	831,656	(10,186)	821,470	-	821,470
7	PURCHASED POWER	602,982	11,619	614,601		614,601
8	CHEMICALS	127,457	-	127,457		127,457
9	REPAIRS AND MAINTENANCE	104,609	(43,217)	61,392		61,392
10	OFFICE SUPPLIES AND EXPENSE	19,800	-	19,800		19,800
11	OUTSIDE SERVICES	266,544	(109,049)	157,495		157,495
12	WATER TESTING	43,458	(17,820)	25,638		25,638
13	RENTS	-	-	-		-
14	TRANSPORTATION EXPENSES	70,430	-	70,430		70,430
15	INSURANCE - GENERAL LIABILITY	(1,294)	-	(1,294)		(1,294)
16	INSURANCE - HEALTH AND LIFE	-	-	-		-
17	REG. COMMISSION EXP. - RATE CASE	144,871	(51,538)	93,333		93,333
18	MISCELLANEOUS EXPENSE	1,259,948	38,164	1,298,112		1,298,112
19	DEPRECIATION & AMORTIZATION EXP.	1,608,019	(67,021)	1,540,998		1,540,998
20	AMORT. OF GAIN ON WELL	(76,000)	-	(76,000)		(76,000)
21	AMORT. OF CAP	64,000	(64,000)	-		-
22	TAXES OTHER THAN INCOME	47,873	-	47,873		47,873
23	PROPERTY TAXES	295,813	(77,724)	218,089		218,089
24	INCOME TAXES	270,020	194,666	464,686	441,771	906,456
25	**TOTAL OPERATING EXPENSES**	$ 6,649,430	$ (196,106)	$ 6,453,324	$ 441,771	$ 6,895,094
26	**UTILITY OPERATING INCOME**	$ 797,270	$ 254,416	$ 1,051,686	$ 702,707	$ 1,754,393

REFERENCES:
COLUMN (A): CO. SCH. C-1
COLUMN (B): SCH. TJC-31
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): SCH. TJC-1, PAGE 1 OF 2
COLUMN (E): COLUMN (C) + COLUMN (D)

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
SUMMARY OF OPERATING ADJUSTMENTS

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-28
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	(A) COMPANY PROPOSED	(B) ADJ. #1	(C) ADJ. #2	(D) ADJ. #3	(E) ADJ. #4	(F) ADJ. #5	(G) ADJ. #6	(H) ADJ. #7	(I) ADJ. #8	(J) ADJ. #9	(K) ADJ. #10	(L) ADJ. #11	(M) ADJ. #12	(N) RUCO ADJUSTED
	REVENUES - WATER:														
1	WATER REVENUES	$ 7,364,411	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,422,721
2	UNMETERED WATER REVENUES	-	-	-	-	-	-	-	-	-	-	-	-	-	82,289
3	OTHER WATER REVENUES	82,289	-	-	-	-	-	-	-	-	-	-	-	-	$ 7,505,010
4	TOTAL REVENUES	$ 7,446,700	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
5	OPERATING EXPENSES:														
6	SALARIES AND WAGES	$ 969,244	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	969,244
7	PURCHASED WATER	831,656	-	-	-	-	-	-	-	-	-	-	-	-	821,470
8	PURCHASED POWER	602,982	-	-	-	-	-	-	58,310	-	-	-	-	-	614,601
9	CHEMICALS	127,457	-	-	-	-	-	-	-	-	-	-	-	-	127,457
10	REPAIRS AND MAINTENANCE	104,609	-	-	-	-	-	-	-	-	-	-	-	-	81,392
11	OFFICE SUPPLIES AND EXPENSE	19,800	-	-	-	-	-	-	-	-	-	-	-	-	19,800
12	OUTSIDE SERVICES	266,544	-	-	-	-	(10,186)	-	-	-	-	-	-	-	157,495
13	WATER TESTING	43,458	-	-	-	-	-	-	-	-	-	-	-	-	25,638
14	RENTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	TRANSPORTATION EXPENSES	70,430	-	-	-	-	-	-	-	-	-	-	-	-	70,430
16	INSURANCE - GENERAL LIABILITY	(1,294)	-	-	-	-	-	-	-	-	-	-	-	-	(1,294)
17	INSURANCE - HEALTH AND LIFE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	REG. COMMISSION EXP. - RATE CA	144,871	-	-	-	-	(71,000)	-	(43,217)	-	11,619	-	-	-	93,333
19	MISCELLANEOUS EXPENSE	1,259,948	-	-	-	-	-	-	(38,049)	-	-	-	-	-	1,298,112
20	DEPRECIATION & AMORTIZATION E	1,608,019	-	-	-	-	-	-	-	(17,820)	-	-	-	-	1,540,998
21	AMORT. OF GAIN ON WELL	(76,000)	(67,021)	-	(51,538)	-	-	-	-	-	-	-	-	-	(76,000)
22	AMORT. OF CAP	64,000	-	38,164	-	-	-	-	-	-	-	-	-	-	47,873
23	TAXES OTHER THAN INCOME	47,873	-	-	-	-	-	-	-	-	-	-	-	-	218,089
24	PROPERTY TAXES	295,813	-	-	-	-	-	-	-	-	-	-	-	-	464,686
25	INCOME TAXES	270,020	(77,724)	-	-	-	-	-	-	-	-	-	-	-	$ 6,453,324
26	TOTAL OPERATING EXPENSES	$ 6,649,430	$ (67,021)	$ (77,724)	$ 38,164	$ (51,538)	$ (10,186)	$ (71,000)	$ -	$ (81,266)	$ (17,820)	$ 11,619	$ (64,000)	$ 194,666	$ 1,051,686
	UTILITY OPERATING INCOME	$ 797,270	$ 67,021	$ 77,724	$ (38,164)	$ 51,538	$ 10,186	$ 71,000	$ 58,310	$ 81,266	$ 17,820	$ (11,619)	$ 64,000	$ (194,666)	
		10.71%													

ADJUSTMENT #:
1. Depreciation & Amortization Expense
2. Property Tax Expense
3. Miscellaneous Expense
4. Rate Case Expense
5. Purchased Water
6. Outside Services

REFERENCE:
Schedule TJC-32
Schedule TJC-33
Schedule TJC-34
Schedule TJC-35
Schedule TJC-36
Schedule TJC-37

ADJUSTMENT #:
7. Revenue Annualization
8. Remove Expensed Plant Items and Capitalize
9. Water Testing Expense
10. Purchased Power
11. Remove CAP Amortization
12. Income Taxes

REFERENCE:
Schedule TJC-38, pages 1 thru 31
Schedule TJC-39
Staff Testimony
Schedule TJC-41
Testimony of TJC
Schedule TJC-43

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #1 - DEPRECIATION AND AMORTIZATION EXPENSE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-29
SURREBUTTAL TESTIMONY

LINE NO.	ACCT. NO.	PLANT ACCOUNT NAME	(A) ADJUSTED TEST YEAR BALANCE PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED BALANCE	(D) COMPONENT DEPRECIATION RATES	(E) RUCO RECOMMENDED DEPRECIATION EXPENSE	
1	301	Organization Cost	-	$ -	$ -	0.00%	$ -	
2	302	Franchise Cost and Other Intangible Plant	-	-	-	0.00%	-	
3	303	Land and Land Rights	305,920	605,937	911,857	0.00%	-	
4	304	Structures and Improvements	1,518,648	10,994	1,529,642	3.33%	50,937	
5	305	Collecting and Impounding Res.	6,548	0	6,548	2.50%	164	
6	306	Lake River and Other Intakes	-	-	-	2.50%	-	
7	307	Wells and Springs	332,065	(107,412)	224,653	3.33%	7,481	
8	308	Infiltration Galleries and Tunnels	-	-	-	6.67%	-	
9	309	Supply Mains	-	-	-	2.00%	-	
10	310	Power Generation Equipment	-	-	-	5.00%	-	
11	311	Electric Pumping Equipment	1,506,908	0	1,506,908	12.50%	188,364	
12	320	Water Treatment Equipment	7,763,500	(2,010,923)	5,752,577	3.33%	191,561	
13	330	Distribution Reservoirs & Standpipe	8,170,420	6,547	8,176,967	2.22%	181,529	
14	331	Transmission and Distribution Mains	17,450,634	0	17,450,634	2.00%	349,013	
15	333	Services	7,389,930	(0)	7,389,930	3.33%	246,085	
16	334	Meters	2,725,673	(0)	2,725,673	8.33%	227,049	
17	335	Hydrants	1,171,633	(1)	1,171,633	2.00%	23,433	
18	336	Backflow Prevention Devices	-	-	-	6.67%	-	
19	339	Other Plant and Miscellaneous Equipment	1,610,687	149,760	1,760,447	6.67%	117,422	
20	340	Office Furniture and Fixtures	270,359	(1)	270,358	6.67%	18,033	
21	341	Transportation Equipment	535,315	0	535,315	20.00%	107,063	
22	342	Stores Equipment	-	-	-	4.00%	-	
23	343	Tools and Work Equipment	149,365	0	149,365	5.00%	7,468	
24	344	Laboratory Equipment	-	-	-	10.00%	-	
25	345	Power Operated Equipment	-	-	-	5.00%	-	
26	346	Communications Equipment	39,105	(0)	39,105	10.00%	3,910	
27	347	Miscellaneous Equipment	106,542	(106,542)	-	10.00%	-	
28	348	Other Tangible Plant	-	34,063	34,063	0.00%	-	
29								
30		TOTAL DIRECT PLANT IN SERVICE	$ 51,053,253	$ (1,417,576)	$ 49,635,677		$ 1,719,510	
31								
32								
33				Correct for	RUCO			
34		**General Office Plant Allocated**	**Per Company**	**4 Factor Alloc.**	**Adjusted**			
35	301	Organization Cost	528	(67)	461	0.00%	-	
36	302	Other Intangible Plant	-	26,044 *	26,044	0.00%	-	
37	304	Structures and Improvements	186,270	(23,791)	162,479	3.33%	5,411	
38	311	Electric Pumping Equipment	-	(26)	(26)	12.50%	(3)	
39	339	Other Plant and Miscellaneous Equipment	27,201	(3,474)	23,727	3.33%	790	
40	340	Office Furniture and Fixtures	458,027	(69,481) *	388,546	6.67%	25,916	
41	341	Transportation Equipment	17,742	(2,266)	15,476	20.00%	-	Fully Depreciated
42	343	Tools and Work Equipment	13,021	(1,663)	11,358	5.00%	568	
43	344	Laboratory Equipment	130	(17)	114	10.00%	11	
44	345	Power Operated Equipment	8,001	(1,022)	6,979	5.00%	-	Fully Depreciated
45	346	Communications Equipment	5,315	(679)	4,636	10.00%	-	Fully Depreciated
46								
47		TOTAL GENERAL OFFICE PLANT ALLOCATION	716,236		639,794		$ 32,693	
48								
49		Less: Amortization of Contributions - Year End Bal.	$ 6,288,097			3.3588% 1	$ (211,205)	
50								
51		Total Depreciation Expense					$ 1,540,998	
52								
53		Adjusted Test Year Depreciation Expense					$ 1,608,019	
54								
55		Increase (Decrease) in Depreciation Expense					$ (67,021)	
56								
57		Adjustment to Revenues and\or Expenses					$ (67,021)	

* Note: Column B, line 36 and 40 adjusts for both the 4 Factor Allocator (2.8%) and Removal of $159,087 and $392,121 of Post Test Year Plant in Account 303 and 340 respectively.
1 Amortization Rate approved in Commission Decision No. 68176.

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #2 - PROPERTY TAX EXPENSE

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-30
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
1	REVENUES - 2004	$ 6,544,219	COMPANY SCHEDULE E-1
2	REVENUES - 2005	7,019,051	COMPANY SCHEDULE E-1
3	RUCO PROPOSED REVENUES	8,649,488	SCHEDULE TJC-30
4	TOTAL	$ 22,212,758	SUM LINES 1, 2, & 3
5	3 YEAR AVERAGE	$ 7,404,253	LINE 4/3 YEARS
6	MULTIPLIER FOR REVENUES (2 X LAST 3 YRS. AVERAGE REVENUE)	x 2	ADOR VALUATION FACTOR
7	REVENUES FOR FULL CASH VALUE	$ 14,808,505	LINE 5 X 2 (MULTIPLIER FOR REVENUES)
8	ADD: 10% OF CWIP BALANCE	$ -	COMPANY TRIAL BALANCE
9	LESS: NET BOOK VALUE OF VEHICLES	474,679	SCHEDULE TJC-6, PAGE 3 OF 3
10	FULL CASH VALUE	$ 14,333,826	LINE 7 + LINE 8 MINUS LINE 9
11	ASSESSMENT RATIO	22.0%	PER HOUSE BILL 2779
12	ASSESSED VALUE	$ 3,153,442	LINE 10 X LINE 11
13	PROPERTY TAX RATE	6.9159%	PER TAX BILLS
14	PROPERTY TAXES PAYABLE PER RUCO	$ 218,089	LINE 12 X LINE 13
15	PROPERTY TAXES PER COMPANY	295,813	PER COMPANY
16	RUCO ADJUSTMENT	$ (77,724)	LINE 14 MINUS LINE 15

Chaparral City Water Company
TEST YEAR ENDED DECEMBER 31, 2006
ADJUSTMENTS TO REVENUES AND/OR EXPENSES
Adjustment Number 4

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-31
SURREBUTTAL TESTIMONY

Line No.		
1	Rate Case Expense	
2		
3	Estimated Rate Case Expense	$ 280,000
4	Unrecovered Rate Case Expense (Prior Case)[1]	$ -
5	Rate Case Expense	$ 280,000
6		
7	Estimated Amortization Period (in Years)	3.0
8		
9	Annual Rate Case Expense	$ 93,333
10		
11	Test Year Adjusted Rate Case Expense	$ 144,871
12		
13	Increase(decrease) Rate Case Expense	$ (51,538)
14		
15	Adjustment to Revenue and/or Expense	$ (51,538)
16		
17		
18	[1] Computation of Unrecovered Rate Case Amount	
19	Rate Case Expense	$ 285,000 [1]
20	Amortization Period (yrs)	4 [2]
21	Annual Amortization amount	$ 71,250 [3] = [1] divied by [2]
22	Amortization (years)	1.83 [4]
23	Total Amortization	$ 130,388 [5] = [4] times [3]
24	Remaining Unrecovered Rate Case Expense	$ 154,613 [6] = [1] minus [5]

Chaparral City Water Company
Test Year Ended December 31, 2006
Adjustment to Revenues and Expenses
Adjustment Number 6

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-32
SURREBUTTAL TESTIMONY

Outside Services Expense

1	Weekly Charge	$ 3,500	
2	January 1, 2006 thru May 22, 2006	20.28571	Number of Weeks
3			
4	Increase(decrease) Miscellaneous Expense	$(71,000)	
5			
6	Adjustment to Revenue and/or Expense	$(71,000)	
7			
8			
9			

Chaparral City Water Company
Test Year Ended December 31, 2006
Operating Income & Expense Adjustments
Adjustment 8

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-33
SURREBUTTAL TESTIMONY

Line No.			
1	Remove Expensed Items and Capitalize		
2			
3	Per RUCO Outside Services	$	(11,590)
4	Per RUCO Outside Services		(26,084)
5	Per RUCO Repairs and Maintenance Expense		(43,217)
6	Per RUCO Late Filing Penalty		(45)
7	Per RUCO Outside Services		(330)
8	RUCO Adjustment		(81,266)
9			
10	Increase (Decrease) to Expenses	$	(81,266)
11			
12			
13	Adjustment to Revenue and/or Expense	$	(81,266)
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24	SUPPORTING SCHEDULE		
25	rcn_plant_Remove Expensed Items & Capitalize.xls		

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJUSTMENT 11 - REMOVE CAP AMORTIZATION

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-34
SURREBUTTAL TESTIMONY

See TJC Direct Testimony

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
OPERATING ADJ. #12 - INCOME TAXES

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-35
SURREBUTTAL TESTIMONY

LINE NO.	DESCRIPTION	AMOUNT	REFERENCE
	FEDERAL INCOME TAXES:		
1	OPERATING INCOME BEFORE INCOME TAXES	$ 1,516,372	SCH. TJC-28
	LESS:		
2	ARIZONA STATE TAX	83,887	LINE 11
3	INTEREST EXPENSE	312,488	NOTE (a)
4	FEDERAL TAXABLE INCOME	$ 1,119,997	LINE 1 - LINES 2 & 3
5	FEDERAL INCOME TAX RATE	34.00%	TAX RATE
6	FEDERAL INCOME TAX EXPENSE	$ 380,799	LINE 4 X LINE 5
	STATE INCOME TAXES:		
7	OPERATING INCOME BEFORE INCOME TAXES	$ 1,516,372	LINE 1
	LESS:		
8	INTEREST EXPENSE	312,488	NOTE (A)
9	STATE TAXABLE INCOME	$ 1,203,884	LINE 7 - LINE 8
10	STATE TAX RATE	6.968%	TAX RATE
11	STATE INCOME TAX EXPENSE	$ 83,887	LINE 9 X LINE 10
12	TOTAL INCOME TAX PER RUCO	464,686	LINE 6 + 11
13	INCOME TAXES PER COMPANY FILING	270,020	COMPANY SCHEDULE C-1
14	RUCO INCOME TAX ADJUSTMENT	$ 194,666	

NOTE (a):
INTEREST SYCHRONIZATION

ADJUSTED RATE BASE	$ 27,498,329
WEIGHTED COST OF DEBT	1.14%
	$ 312,488

CHAPARRAL CITY WATER COMPANY, INC.
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE TJC-36
SURREBUTTAL TESTIMONY

OCRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) AMOUNT	(B) RUCO ADJUSTMENT	(C) ADJUSTED BALANCE	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000		$ 1,400,000	4.10%	2.71%	0.11%
2	LONG-TERM DEBT	6,865,000	(280,000)	6,585,000	19.20%	5.34%	1.03%
3	COMMON EQUITY	27,002,476	(640,000)	26,362,476	76.80%	8.83%	6.78%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ (920,000)	$ 34,347,476	100.10%		
5	**OCRB WEIGHTED COST OF CAPITAL**						7.92%

FVRB WEIGHTED COST OF CAPITAL

	DESCRIPTION	(A) AMOUNT	(B) RUCO ADJUSTMENT	(C) ADJUSTED BALANCE	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
6	SHORT-TERM DEBT	$ 1,400,000		$ 1,400,000	4.10%	2.71%	0.11%
7	LONG-TERM DEBT	6,865,000	(280,000)	6,585,000	19.20%	5.34%	1.03%
8	COMMON EQUITY	27,002,476	(640,000)	26,362,476	76.80%	6.83%	5.25%
9	TOTAL CAPITALIZATION	$ 35,267,476	$ (920,000)	$ 34,347,476	100.10%		
10	**FVRB WEIGHTED COST OF CAPITAL**						6.38%

REFERENCES:
COLUMN (A): COMPANY SCH. D - 1
COLUMN (B): TESTIMONY, WAR
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): COLUMN (C) ÷ COLUMN (C), LINE 5
COLUMN (E): TESTIMONY, WAR
COLUMN (F): COLUMN (D) x COLUMN (E)

EXHIBIT
R-10
ADMITTED

CHAPARRAL CITY WATER COMPANY, INC.
2006 RATE CASE
DOCKET NO. W-02113A-07-0551

RESPONSE TO STAFF'S SEVENTH SET OF DATA REQUESTS

February 21, 2008

Response provided by:	Robert Hanford
Title:	District Manager
Company Name:	Chaparral City Water Company
Address:	12021 N. Panorama Drive Fountain Hills, Arizona 85268
Company Response Number:	MEM 7.3

Q. Please provide an explanation of the retirement process used to record the removal from service of Well # 8 and #9 as a result of the Agreement between Chaparral City Water Company and Fountain Hills Sanitary District, dated February 3, 2005, which requires these wells to be capped in accordance with ADWR rules and regulations. Please provide supporting documentation (purchase orders, invoices and/or contracts) for the original cost of Well #8 and Well #9.

RESPONSE: These wells are physically isolated from CCWC's distribution system, but have yet to be retired. While Well # 9 is capped and will never be used as a potable source of supply, it could be used as an aquifer storage and recovery well for non-potable water. Well #8, also currently capped, could be equipped to pump potable water in an emergency. The Company believes that these two wells are appropriately considered plant held for future use. The Company has not yet transferred the well costs to plant held for future use. However, both wells were constructed over 36 years ago and have been fully depreciated and have no impact on the rate base in the instant case.

The Company cannot locate the original documentation of the cost of these wells. After examining the fixed asset listing (previously provided) for the well account, the Company believes that the original cost of Well #8 is $49,329 (item 51834 with in-service year of 1971) and the original cost of Well #9 is $54,139 (item 51835 with in-service year of 1972), as these two amounts are shown to have been recorded in the time period these two wells were originally placed into service. The Company will agree with a proposal to remove this plant from plant-in-service. However, again, the impact on rate base will be zero.

EXHIBIT
R-11
ADMITTED

R-11

completed due to an intervening lawsuit between the U.S. Bureau of Reclamation and the Central Arizona Water Conservation District ("CAWCD") regarding the CAWCD's repayment obligation for the CAP.

In 1999, after a five year delay, the ADWR reinitiated the reallocation process. Using the same basic methodology that was used to generate the 1994 allocation, the ADWR regenerated the proportionate share of the 65,647 acre-feet relative to the population projections and water demand for the year 2040. However, because the total projected needs of the applicants were considerably greater than the supply, the total amount of water that could be allocated to any applicant was limited to 8,206 acre-feet or 12.5% of the total supply of 65,647 acre-feet.

Of the original 26 applicants considered in the reallocation process, some applicants had elected to not participate in the 1999 reallocation process. As a result, the ADWR made a reallocation recommendation for the remaining 20 applicants. The final recommendation regarding the reallocation of the 65,647 acre-feet of M&I CAP water included the Company receiving 1,931 acre-feet of additional CAP water.

Company's Additional CAP Water Allocation

In its rate application filing with a Test Year ending December 31, 2006, the Company stated that it will be purchasing by January 2008 an additional 1,931 acre-feet per year of CAP Water at a cost of $1,280,000. The Company purchased this additional allocation in December 2007. The Company currently has a CAP Water allocation of 6,978 acre-feet per year. According to the Company, the additional CAP Water allocation is needed to, a) improve the long-term security of water supplies for its customers, 2) allow the Company to reinforce and continue its reliance on a renewable supply of surface water, and 3) the additional allocation will act as a drought buffer.

Staff has evaluated the additional CAP Water allocation to determine if the additional allocation is needed and if so, how much of the allocation would be needed. To assist in its evaluation, Staff produced Table I-2 and Figure I-1 to show the CAP Water Allocation and its projected use. The data in Table I-2 was taken from the Company's Annual Reports and used to depict the CAP Water purchased using linear regression analysis. Based on Figure I-1, it appears the current CAP Water allocation was exceeded in 2006 and that additional CAP Water is needed. Figure I-1 also shows that approximately half of the requested allocation (314.6 million gallons or 966 acre-feet per year) would be needed within a five-year period.

In Decision No. 68238, dated October 25, 2005, the Company was granted an Order Preliminary ("OP") for a Certificate of Convenience and Necessity ("CC&N") extension. In order to obtain a Final Order granting this CC&N extension, one of the requirements was for the Company to demonstrate sufficient water source capacity for its water system. The OP compliance requirements are due within a three-year timeframe, with a due date of October 25, 2008.

Based on the above discussion, approximately half of the requested CAP Water allocation of 966 acre-feet per year should be considered used and useful.

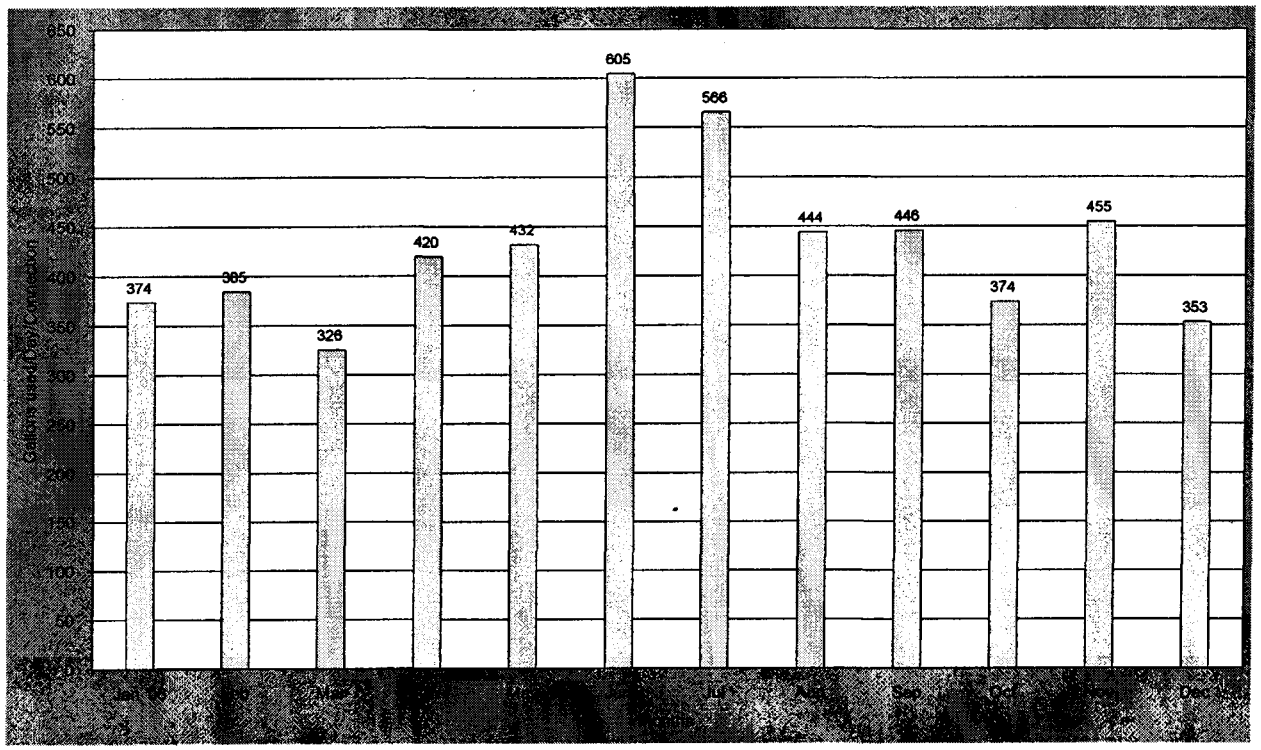


Figure C-1. Water Use

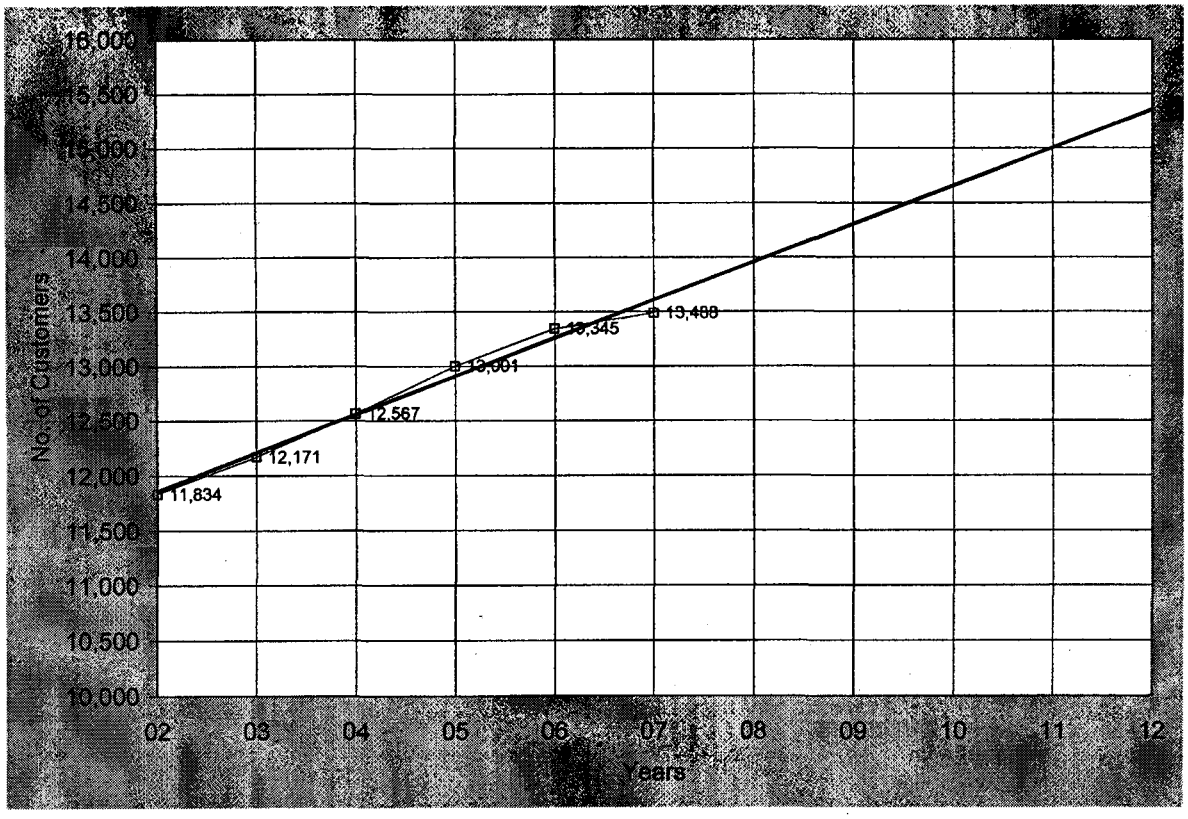


Figure D-1. Growth

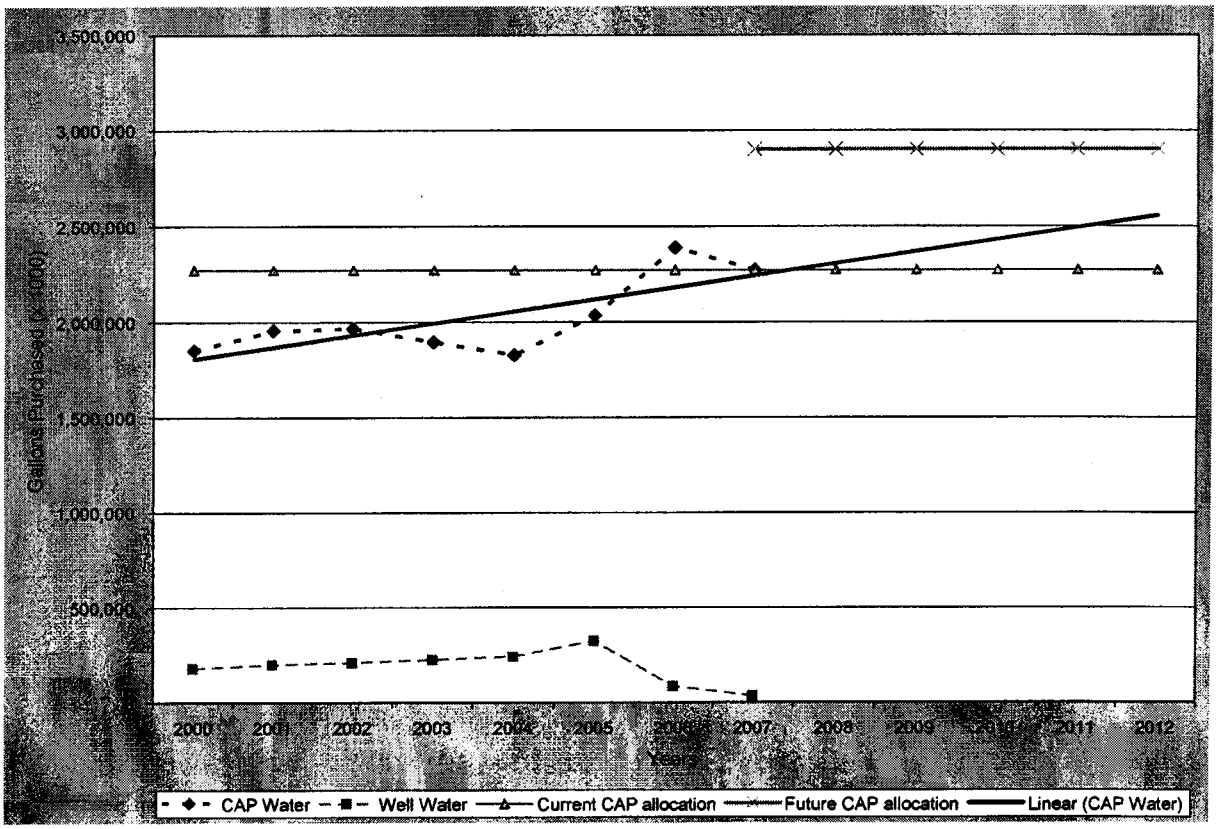


Figure I-1. CAP Water Allocation

Data from Company's Annual Reports							
Year	CAP WTP #1 (x 1000)	CAP WTP #2 (x 1000)	CAP Total (x 1000)	Wells (x 1000)	Total Pumped/ Purchased (x 1000)	Current CAP Allocation (x 1000 Gal.)	Future CAP Allocation (x 1000 Gal.)
2000	695,440	1,158,760	1,854,200	179,924	2,034,124	2,273,633	
2001	753,042	1,204,345	1,957,387	200,486	2,157,873	2,273,633	
2002	781,956	1,186,343	1,968,299	210,625	2,178,924	2,273,633	
2003			*1,898,900	*226,403		2,273,633	
2004	537,110	1,292,390	1,829,500	242,180	2,071,680	2,273,633	
2005		2,037,407	2,037,407	325,400	2,362,807	2,273,633	
2006		2,389,948	2,389,948	84,590	2,474,538	2,273,633	
2007		2,273,633	2,273,633	35,528	2,309,161	2,273,633	2,902,809
2008						2,273,633	2,902,809
2009						2,273,633	2,902,809
2010			* estimate			2,273,633	2,902,809
2011						2,273,633	2,902,809
2012						2,273,633	2,902,809

Table I-2 . Water Pumped & Purchased

EXHIBIT R-12 ADMITTED

INDUSTRY TIMELINESS: 50 (of 99)

The Water Utility Industry has held up relatively well over the past few months. Although the broad market has been sent into a tailspin by growing economic uncertainties and a tightening credit market, water utility stocks have given little, if any, ground, and have thus jumped into the middle of the pack of *The Value Line Investment Survey* for Timeliness. Companies here are enjoying an increasingly favorable regulatory environment, but the primary reason for the share-price strength boils down to their perceived safety. Indeed, because of the steady stream of income these stocks generate and the necessity for water itself, the group provides shelter for investors looking to get out of the treacherous economic waters that have been pulling many under without having to take too conservative a stance. With no end to the volatility in sight, these stocks are likely to continue outpacing the broad market averages over the coming six to 12 months.

The long-term picture is not as rosy, unfortunately. Yes, industry fundamentals are improving, but increasingly stringent infrastructure costs threaten to wipe out most of these gains stemming from regulatory reform. And while some of the larger entities in the group will be able to pick off smaller players incapable of meeting the increasing capital requirements, even many of them do not have the funds to stay afloat and will have to look to outside financiers.

Economic Backdrop

The economy has gone into shock and wild market swings appear to have become commonplace of late. With the federal government's bail out of big banks failing to stimulate the economy as hoped, visibility surrounding a market recovery has been clouded even further. Water utilities will probably benefit from such a market environment, as many on Wall Street look to limit the risk profile of their portfolios.

Regulatory Improvements

Water utility companies have long come up on the short end in regards to regulatory backing. The authorities, put in place in an effort to maintain a balance of power between customers and providers, as well as ensure fair business practices, have tended to side with costumers. But those days may well be coming to an end. Commissions have been handing down more timely and favorable general rate cases in recent months, auguring well for utilities going forward.

Long-Term Limitations

Despite the favorable backdrop current economic conditions and more friendly regulations create, there are some concerns. The costs of maintaining current water systems in the United States continue to climb and do not appear to be slowing down. Many systems are over the century mark and require significant upkeep or even rebuilding. Coupled with increasingly stringent EPA requirements, infrastructure repairs are likely to require hundreds of millions of dollars in maintenance the coming decade. However, many do not have the finances to foot the bill and will have to tap finance and debt markets to do so, or, in the case of smaller operators, close up shop. That said, M&A activity is expected to remain at a feverish pace.

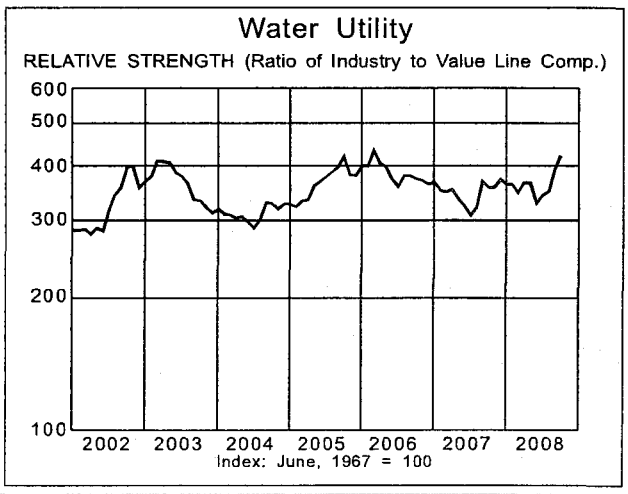
Conclusion

We have reversed course with regard to entry into the Water Utility industry and, for the first time in recent memory, are advising investors to consider establishing a position here. The economic backdrop is likely to remain difficult for the foreseeable future and these stocks stand to be the beneficiaries, as investors look to ride out the rough investment waters in less volatile areas of the market. The industry's healthy dividend yields ought to whet the appetite of anxious participants. That said, the 3- to 5-year prospects of these stock's are not as promising, with the aforementioned infrastructure expenditures and necessary financing hovering over shareholder returns. *American Water Works* is an extremely intriguing play, but its short trading history adds some uncertainty to its future trading patterns. Although *Aqua America's* aggressive acquisition game places it atop our list for appreciation potential, it also increases its risk profile. *American States Water* is now ranked 2 (Above Average) for Timeliness, and it is on our recommended list for the coming six to 12 months.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2004	2005	2006	2007	2008	2009		11-13
1173.6	1256.9	3454.1	3100.0	*3925*	*4300*	Revenues ($mill)	*5275*
127.1	148.2	d5.8	d278.0	*360*	*450*	Net Profit ($mill)	*600*
39.1%	40.5%	NMF	NMF	*38.0%*	*40.0%*	Income Tax Rate	*38.5%*
1.0%	1.1%	3.7%	NMF	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
49.1%	50.4%	54.0%	50.1%	*52.0%*	*53.0%*	Long-Term Debt Ratio	*52.0%*
50.7%	49.5%	45.9%	49.9%	*48.0%*	*47.0%*	Common Equity Ratio	*48.0%*
2782.1	3049.9	12110.2	10790.6	*12950*	*13600*	Total Capital ($mill)	*16225*
3836.9	4200.7	13308.3	11522.4	*15180*	*16125*	Net Plant ($mill)	*18350*
6.0%	6.3%	1.6%	NMF	*5.0%*	*5.5%*	Return on Total Cap'l	*6.0%*
9.0%	9.8%	NMF	NMF	*6.0%*	*7.0%*	Return on Shr. Equity	*7.5%*
9.0%	9.8%	NMF	NMF	*6.0%*	*7.0%*	Return on Com Equity	*7.5%*
3.1%	3.7%	NMF	NMF	*3.0%*	*3.0%*	Retained to Com Eq	*3.5%*
66%	62%	NMF	NMF	*51%*	*57%*	All Div'ds to Net Prof	*56%*
25.4	29.4	NMF	NMF	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
.79	1.57	NMF	NMF			Relative P/E Ratio	*1.20*
6.1%	5.2%	2.0%	2.6%			Avg Ann'l Div'd Yield	*2.4%*



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AMER. STATES WATER NYSE-AWR

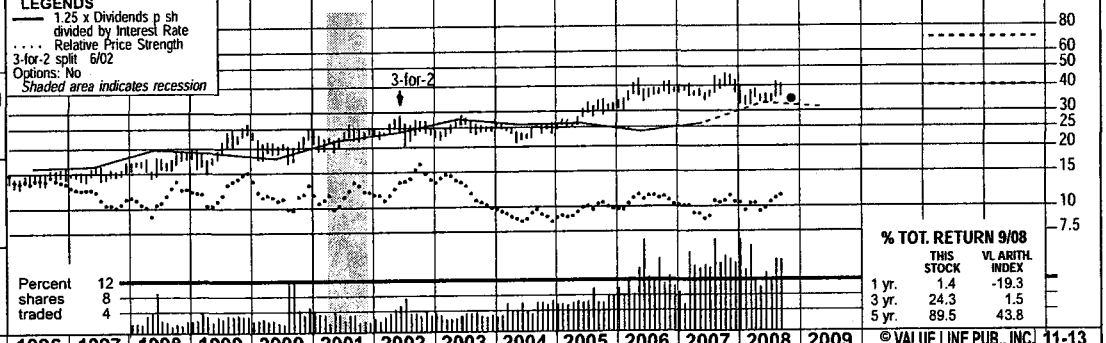
RECENT PRICE **34.38** | P/E RATIO **18.3** (Trailing: 21.2 / Median: 20.0) | RELATIVE P/E RATIO **1.51** | DIV'D YLD **2.9%** | VALUE LINE

TIMELINESS 2 Raised 9/26/08
SAFETY 3 New 2/4/00
TECHNICAL 3 Lowered 10/10/08
BETA .95 (1.00 = Market)

High:	17.1	19.5	26.5	25.3	26.4	29.0	29.0	26.8	34.6	43.8	46.1	42.0
Low:	13.5	14.1	14.8	16.7	19.0	20.3	21.6	20.8	24.3	30.3	33.6	27.2

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.25 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/02
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(+105%)	22%
Low	40	(+15%)	7%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	1	0	0	0	0	0	2	0
Options	4	0	0	0	0	0	1	0	0
to Sell	4	0	0	0	0	0	1	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	63	53	59
to Sell	52	59	50
Hld's(000)	9617	9783	10177

% TOT. RETURN 9/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	1.4	-19.3
3 yr.	24.3	1.5
5 yr.	89.5	43.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.61	14.06	15.76	17.49	*17.60*	*18.10*	Revenues per sh	*21.25*
1.81	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.23	2.64	2.89	3.31	*3.55*	*3.85*	"Cash Flow" per sh	*4.65*
1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.78	1.05	1.32	1.33	1.62	*1.85*	*2.00*	Earnings per sh A	*2.65*
.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.96	*1.00*	*1.08*	Div'd Decl'd per sh B■	*1.24*
2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	5.03	4.24	3.91	2.89	*4.45*	*4.00*	Cap'l Spending per sh	*4.25*
8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	15.01	15.72	16.64	17.53	*18.35*	*18.90*	Book Value per sh	*19.50*
9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	16.80	17.05	17.23	*18.00*	*18.50*	Common Shs Outst'g C	*20.00*
10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	*Bold figures are*		Avg Ann'l P/E Ratio	*22.0*
.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.82	1.23	1.17	1.50	1.26	*Value Line*		Relative P/E Ratio	*1.45*
6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*2.2%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $324.4 mill. **Due in 5 Yrs** $50.0 mill.
LT Debt $267.1 mill. **LT Interest** $22.0 mill.
(LT interest earned: 5.1x: total interest coverage: 4.7x) (46% of Cap'l)

Leases, Uncapitalized: None
Pension Assets-12/07 $70.9 mill.
Oblig. $83.4 mill.
Pfd Stock None.

Common Stock 17,253,910 shs.
MARKET CAP: $600 million (Small Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
148.1	173.4	184.0	197.5	209.2	212.7	228.0	236.2	268.6	301.4	*317*	*335*	Revenues ($mill)	*425*
14.6	16.1	18.0	20.4	20.3	11.9	16.5	22.5	23.1	28.0	*33.0*	*37.5*	Net Profit ($mill)	*53.0*
40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	37.4%	47.0%	40.5%	42.6%	*40.0%*	*40.0%*	Income Tax Rate	*40.0%*
--	--	--	--	--	--	--	--	12.2%	8.5%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*Nil*
43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	47.7%	50.4%	48.6%	46.9%	*45.5%*	*44.0%*	Long-Term Debt Ratio	*44.5%*
55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	52.3%	49.6%	51.4%	53.1%	*54.5%*	*56.0%*	Common Equity Ratio	*55.5%*
277.1	328.2	371.1	447.6	444.4	442.3	480.4	532.5	551.6	569.4	*605*	*625*	Total Capital ($mill)	*700*
414.8	449.6	509.1	539.8	563.3	602.3	664.2	713.2	750.6	776.4	*825*	*865*	Net Plant ($mill)	*980*
7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	5.2%	5.4%	6.0%	6.7%	*7.0%*	*7.5%*	Return on Total Cap'l	*9.0%*
9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	*10.0%*	*10.5%*	Return on Shr. Equity	*13.5%*
9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	*10.0%*	*10.5%*	Return on Com Equity	*13.5%*
2.1%	2.9%	3.0%	3.6%	3.3%	NMF	1.0%	2.8%	2.7%	3.9%	*4.5%*	*5.5%*	Retained to Com Eq	*7.5%*
78%	72%	68%	65%	65%	113%	84%	67%	67%	58%	*55%*	*53%*	All Div'ds to Net Prof	*47%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	3.2	1.7	.4
Receivables	14.8	16.1	26.2
Inventory (Avg Cst)	1.6	1.6	1.7
Other	44.8	43.7	41.7
Current Assets	64.4	63.1	70.0
Accts Payable	24.0	29.1	34.9
Debt Due	32.6	37.8	57.3
Other	29.3	27.4	27.1
Current Liab.	85.9	94.3	119.3
Fix. Chg. Cov.	268%	314%	300%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	3.5%	4.0%	*5.0%*
"Cash Flow"	5.0%	4.0%	*8.0%*
Earnings	3.0%	1.5%	*11.0%*
Dividends	1.0%	1.5%	*5.0%*
Book Value	4.5%	4.5%	*2.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	49.8	60.5	68.1	57.8	236.2
2006	64.3	63.0	75.0	66.3	268.6
2007	72.3	79.3	75.8	74.0	301.4
2008	68.9	*80.3*	*85.8*	*82.0*	*317*
2009	*74.0*	*86.0*	*89.0*	*86.0*	*335*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	.22	.34	.47	.29	1.32
2006	.35	.36	.32	.30	1.33
2007	.40	.42	.44	.35	1.62
2008	.30	.53	*.60*	*.42*	*1.85*
2009	*.33*	*.55*	*.65*	*.47*	*2.00*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.221	.221	.221	.225	.89
2005	.225	.225	.225	.225	.90
2006	.225	.225	.225	.235	.91
2007	.235	.235	.235	.250	.96
2008	.250	.250	.250		

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 250,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00). Has roughly 572 employees. Officers & directors own 4.4% of common stock (4/08 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Inc: CA. Addr.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tele.: 909-394-3600. Internet: www.aswater.com.

Improvements on the regulatory front are helping American States Water. With more favorable backing from the California Public Utilities Commission (CPUC) in place, the utility provider was able to overcome the difficult backdrop that conservation efforts (related to the federally proclaimed June 5th state wide drought) created, posting a 26% earnings growth in the second quarter. Indeed, approved rate increases added roughly $5.5 million to the top line and boosted water margins by $3.0 million. Recently filed general rate cases for Region II and III should result in meaningful annual rate increases effective the beginning of 2009.

There may be additional support on the horizon. Now that more timely and company-friendly rulings seem to have become more commonplace, the revamped CPUC can work on implementing some of the regulatory mechanisms laid out in the California Water Action Plan of 2005. If so, the company stands to benefit from the adoption of the water revenue adjustment mechanism, which attempts to limit the effects of weather conditions and generate more-stable earnings patterns. Consequently, we've bumped up our 2008 and 2009 earnings estimates by 12% and 8%, to $1.85 and $2.00, respectively.

These shares have moved up a couple of notches on our Timeliness system and are now ranked 2 (Above Average). They've inched up a bit since our July review, despite the difficulties of the overall market. We think this issue will likely continue to better the broad market over the coming six to 12 months, benefiting from the continued regulatory improvements mentioned above, as well as the issue's more conservative bent, namely the healthy income stream it provides.

Still, the stock does not stand out for 3- to 5-year appreciation potential. The financial cupboard is barren, meaning that the lofty infrastructure costs that we suspect to persist will have to be funded by outside financiers. The troubles of the debt markets make share offerings a bit more likely, but either method would dilute the future shareholder gains we envision, as well as limit the company's ability to take advantage of a highly fragmented industry landscape.

Andre J. Costanza *October 24, 2008*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '92, 13¢; '04, 14¢; '05, 25¢; '06, 6¢. Next earnings report due early November. May not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	B++
Stock's Price Stability	80
Price Growth Persistence	75
Earnings Predictability	60

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CALIFORNIA WATER NYSE-CWT

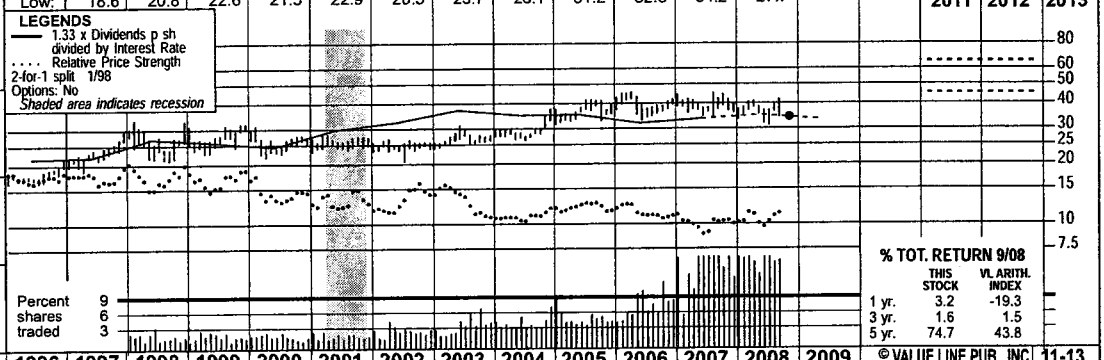
RECENT PRICE 34.34 | P/E RATIO 19.0 (Trailing: 22.2 / Median: 22.0) | RELATIVE P/E RATIO 1.57 | DIV'D YLD 3.4% | VALUE LINE

TIMELINESS 3 Raised 3/7/08
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Lowered 9/12/08
BETA 1.10 (1.00 = Market)

High:	29.6	33.8	32.0	31.4	28.6	26.9	31.4	37.9	42.1	45.8	45.4	42.0
Low:	18.6	20.8	22.6	21.5	22.9	20.5	23.7	26.1	31.2	32.8	34.2	27.7

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 1/98
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+90%)	20%
Low	45	(+30%)	10%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	1	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	62	60	65
to Sell	49	40	45
Hld's(000)	9554	10255	9849

Percent shares traded 9 6 3

% TOT. RETURN 9/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	3.2	-19.3
3 yr.	1.6	1.5
5 yr.	74.7	43.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
12.29	13.34	12.59	13.17	14.48	15.48	14.76	15.96	16.16	16.26	17.33	16.37	17.18	17.44	16.20	17.76	*18.60*	*19.55*	Revenues per sh	*21.30*
1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	2.83	3.03	2.71	3.12	*3.45*	*3.75*	"Cash Flow" per sh	*4.50*
1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.46	1.47	1.34	1.50	*1.70*	*1.95*	Earnings per sh A	*2.55*
.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.14	1.15	1.16	*1.17*	*1.18*	Div'd Decl'd per sh B ■	*1.30*
3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.73	4.01	4.28	3.68	*3.90*	*3.95*	Cap'l Spending per sh	*4.75*
10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.66	15.79	18.15	18.50	*19.30*	*20.00*	Book Value per sh C	*21.90*
11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.18	16.93	18.37	18.39	20.66	20.67	*21.25*	*22.00*	Common Shs Outst'g D	*23.50*
14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	*Bold figures are*		Avg Ann'l P/E Ratio	*22.0*
.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.37	*Value Line*		Relative P/E Ratio	*1.45*
6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $314.0 mill. Due in 5 Yrs $25.0 mill.
LT Debt $288.3 mill. LT Interest $20.5 mill.

(LT interest earned: 2.7x; total int. cov.: 2.6x)

Pension Assets-12/07 $85.3 mill. Oblig. $105.8 mill.
Pfd Stock $3.5 mill. Pfd Div'd $.15 mill.
139,000 shares, 4.4% cumulative ($25 par).

Common Stock 20,716,702 shs. as of 8/1/08
MARKET CAP: $700 million (Small Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
186.3	206.4	244.8	246.8	263.2	277.1	315.6	320.7	334.7	367.1	*395*	*430*	Revenues ($mill)	*500*
18.4	19.9	20.0	14.4	19.1	19.4	26.0	27.2	25.6	31.2	*36.0*	*43.0*	Net Profit ($mill)	*60.0*
36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	39.6%	42.4%	37.4%	39.9%	*40.0%*	*40.0%*	Income Tax Rate	*40.0%*
--	--	--	--	--	10.3%	3.2%	3.3%	10.6%	8.3%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
44.2%	46.9%	48.9%	50.3%	55.3%	50.2%	48.6%	48.3%	43.5%	42.9%	*42.0%*	*41.0%*	Long-Term Debt Ratio	*43.0%*
54.7%	52.0%	50.2%	48.8%	44.0%	49.1%	50.8%	51.1%	55.9%	56.6%	*57.5%*	*58.5%*	Common Equity Ratio	*57.0%*
308.6	333.8	388.8	402.7	453.1	498.4	565.9	568.1	670.1	674.9	*710*	*750*	Total Capital ($mill)	*900*
478.3	515.4	582.0	624.3	697.0	759.5	800.3	862.7	941.5	1010.2	*1055*	*1100*	Net Plant ($mill)	*1250*
7.8%	7.8%	6.8%	5.3%	5.9%	5.6%	6.1%	6.3%	5.2%	5.9%	*6.5%*	*7.0%*	Return on Total Cap'l	*8.0%*
10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	8.9%	9.3%	6.8%	8.1%	*9.0%*	*10.0%*	Return on Shr. Equity	*11.5%*
10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	9.0%	9.3%	6.8%	8.1%	*9.0%*	*10.0%*	Return on Com Equity	*11.5%*
2.8%	3.5%	1.8%	NMF	1.0%	.7%	2.1%	2.1%	1.0%	1.8%	*2.5%*	*4.0%*	Retained to Com Eq	*5.5%*
74%	70%	82%	119%	90%	91%	77%	78%	86%	77%	*69%*	*60%*	All Div'ds to Net Prof	*51%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	60.3	6.7	6.1
Other	49.3	53.3	63.0
Current Assets	109.6	60.0	69.1
Accts Payable	33.1	36.7	46.9
Debt Due	1.8	2.7	25.7
Other	35.3	30.3	40.3
Current Liab.	70.2	69.7	112.9
Fix. Chg. Cov.	317%	365%	400%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	2.0%	0.5%	*3.5%*
"Cash Flow"	1.5%	4.0%	*7.0%*
Earnings	-0.5%	4.5%	*10.0%*
Dividends	1.0%	0.5%	*2.0%*
Book Value	3.5%	6.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	60.3	81.5	101.1	77.8	320.7
2006	65.2	81.1	107.8	80.6	334.7
2007	71.6	95.8	113.8	85.9	367.1
2008	72.9	105.6	*124.5*	*92.0*	*395*
2009	*80.0*	*115*	*135*	*100*	*430*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.03	.41	.71	.32	1.47
2006	.04	.31	.68	.31	1.34
2007	.07	.37	.67	.39	1.50
2008	.01	.48	*.78*	*.43*	*1.70*
2009	*.12*	*.54*	*.83*	*.46*	*1.95*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.283	.283	.283	.283	1.13
2005	.285	.285	.285	.285	1.14
2006	.2875	.2875	.2875	.2875	1.15
2007	.290	.290	.290	.290	1.16
2008	.293	.293	.293		

BUSINESS: California Water Service Group provides regulated and nonregulated water service to roughly 463,600 customers in 83 communities in California, Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '07: residential, 69%; business, 18%; public authorities, 5%; industrial, 5%; other, 3%. '07 reported depreciation rate: 2.2%. Has roughly 890 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson (4/08 Proxy). Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group has been the beneficiary of vast changes in the Californian regulatory infrastructure. The company reported second-quarter earnings of $0.48, 30% better than the year before. More impressive was the fact that California, where the company does the bulk of its business, was under conservation guidelines, due to drought-like conditions. Revenues surged 10%, to $105.6 million, in the period, with rate increases responsible for nearly two-thirds of the jump. The California Public Utilities Commission (CPUC) has undergone a significant change in methodology of late, creating a more favorable backdrop for utility providers.

We suspect that things will continue to improve. Shortly after the second quarter ended, the CPUC approved a settlement between its Division of Ratepayer Advocates and CWT, authorizing rate increases totaling $33.4 million, as well as authoring additional requests in the remaining districts. Meanwhile, as per an earlier agreement, several new regulatory decisions went into effect July 1st. The implementation of a water revenue adjustment mechanism ought to better allow the company to recover incurred costs and make for a smoother earnings stream going forward. Consequently, we've raised our 2008 and 2009 share-earning estimates by a dime a piece, to $1.70 and $1.95, respectively.

We like the diversification strategy that is being employed. Management has completed the acquisition of Waikoloa Water and Wastewater Systems, which provides services to resort areas in Hawaii. This is its second purchase there this year and should limit geographic-specific weather constraints.

These shares do not stand out . . . They are ranked 3 (Average) for Timeliness and offer below-average 3- to 5-year appreciation potential, due to the high infrastructure costs we envision persisting.

. . . but may whet the appetite of risk-averse investors. CWT has not given much ground since our July review, a novelty in such a tumultuous market environment. Investors may favor the stock's steady returns and healthy dividend yield until there is evidence of market recovery.

Andre J. Costanza *October 24, 2008*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; 02, 8¢. Next earnings report due late Oct.
(B) Dividends historically paid in mid-Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '07: $69.7 mill., $3.37/sh.
(D) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	65
Price Growth Persistence	65
Earnings Predictability	75

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SOUTHWEST WATER NDQ-SWWC

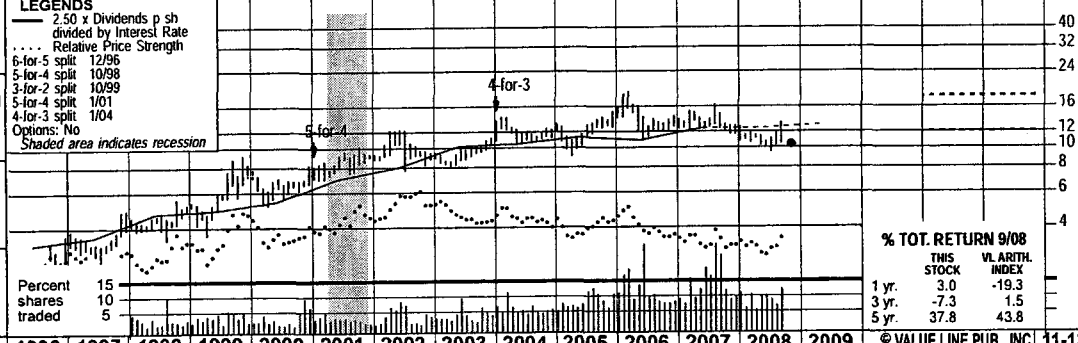
RECENT PRICE 10.41 | P/E RATIO 33.6 (Trailing: 47.3 Median: 25.0) | RELATIVE P/E RATIO 2.78 | DIV'D YLD 2.3% | VALUE LINE

TIMELINESS 3 Raised 10/10/08
SAFETY 3 New 10/28/05
TECHNICAL 3 Raised 7/11/08
BETA 1.00 (1.00 = Market)

High:	5.0	5.6	9.2	8.3	10.2	12.4	11.2	14.3	15.2	19.1	16.4	13.4
Low:	2.6	3.5	3.6	5.1	6.9	7.6	8.1	10.3	9.0	10.8	11.5	8.2

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 2.50 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
6-for-5 split 12/96
5-for-4 split 10/98
3-for-2 split 10/99
5-for-4 split 1/01
4-for-3 split 1/04
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	18	(+75%)	18%
Low	12	(+15%)	7%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	1	3	0	0
to Sell	1	1	1	0	0	0	2	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	31	41	45
to Sell	26	23	24
Hld's(000)	11090	12145	13228

% TOT. RETURN 9/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	3.0	-19.3
3 yr.	-7.3	1.5
5 yr.	37.8	43.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
3.77	4.03	4.20	4.84	5.31	5.61	5.63	6.16	7.49	8.15	9.12	10.70	9.23	9.10	9.42	8.96	9.00	9.25	Revenues per sh	10.00
.44	.38	.38	.44	.46	.53	.59	.65	.76	.87	.86	.91	.67	.78	.85	.86	.95	1.10	"Cash Flow" per sh	1.55
.19	.08	.09	.12	.15	.21	.25	.31	.38	.42	.39	.44	.23	.34	.40	.31	.25	.40	Earnings per sh A	.60
.18	.14	.08	.08	.09	.09	.10	.11	.13	.14	.15	.16	.18	.20	.21	.23	.24	.24	Div'd Decl'd per sh B	.30
.42	.60	.72	.84	.95	.74	.79	.53	.55	1.06	1.78	1.14	1.26	1.66	1.87	1.70	1.60	1.60	Cap'l Spending per sh	1.70
2.42	2.31	2.31	2.45	2.40	2.52	2.70	3.05	3.44	3.84	4.27	4.90	6.17	6.49	6.98	5.98	6.60	6.70	Book Value per sh D	7.10
11.80	11.97	12.13	11.74	12.45	12.65	12.83	13.12	13.99	14.17	14.35	16.17	20.36	22.33	23.80	24.27	25.00	26.00	Common Shs Outst'g C	29.00
14.5	35.8	22.3	14.6	16.5	16.9	17.2	19.6	17.0	19.8	24.8	21.2	51.6	35.5	34.8	--	Bold figures are		Avg Ann'l P/E Ratio	25.0
.88	2.11	1.46	.98	1.03	.97	.89	1.12	1.11	1.01	1.35	1.21	2.73	1.89	1.88	--	Value Line		Relative P/E Ratio	1.65
6.6%	4.7%	4.2%	4.7%	3.4%	2.7%	2.3%	1.8%	2.0%	1.7%	1.5%	1.7%	1.5%	1.6%	1.5%	1.8%	estimates		Avg Ann'l Div'd Yield	1.7%
						72.2	80.9	104.7	115.5	130.8	173.0	188.0	203.2	224.2	217.3	225	240	Revenues ($mill)	290
						3.4	4.2	5.4	6.2	6.0	7.2	4.5	7.3	9.3	5.0	6.2	9.1	Net Profit ($mill)	17.5
						39.5%	39.0%	37.0%	36.0%	34.9%	35.9%	36.1%	36.0%	35.0%	NMF	35.0%	35.0%	Income Tax Rate	36.0%
						--	--	--	14.4%	3.2%	--	11.0%	9.5%	12.5%	11.0%	13.0%	13.2%	AFUDC % to Net Profit	16.8%
						48.7%	45.2%	48.8%	51.4%	56.7%	47.9%	47.9%	44.7%	43.6%	50.0%	53.5%	51.0%	Long-Term Debt Ratio	42.0%
						50.5%	54.1%	50.7%	48.2%	42.9%	51.8%	52.0%	55.1%	56.3%	50.0%	46.5%	49.0%	Common Equity Ratio	58.0%
						68.5	73.9	95.0	113.0	142.8	152.8	242.0	262.9	295.2	290.0	355	355	Total Capital ($mill)	355
						109.2	113.7	157.8	171.1	203.9	219.5	302.6	344.8	389.6	410.3	440	460	Net Plant ($mill)	525
						7.1%	7.6%	7.6%	7.6%	5.8%	6.2%	3.1%	4.1%	4.5%	3.0%	3.0%	4.0%	Return on Total Cap'l	6.0%
						9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	3.6%	5.0%	5.6%	3.5%	3.5%	5.0%	Return on Shr. Equity	8.5%
						9.6%	10.4%	11.1%	11.4%	9.7%	9.1%	3.6%	5.0%	5.6%	3.5%	3.5%	5.0%	Return on Com Equity	8.5%
						6.0%	7.0%	7.8%	7.8%	6.3%	5.8%	.8%	2.1%	2.6%	NMF	0.5%	1.5%	Retained to Com Eq	4.5%
						38%	33%	31%	32%	36%	36%	78%	58%	54%	NMF	NMF	74%	All Div'ds to Net Prof	51%

CAPITAL STRUCTURE as of 6/30/08
Total Debt $193.3 mill. Due in 5 Yrs $60.5 mill.
LT Debt $191.4 mill. LT Interest $9.0 mill.
(Total interest coverage: 2.7x) (48% of Cap'l)

Leases, Uncapitalized: Annual rentals $6.7 mill.
Pension Liability None

Pfd Stock $.458 mill. **Pfd Div'd** $.020 mill.
Common Stock 24,592,039 shs.
as of 8/1/08

MARKET CAP: $250 million (Small Cap)

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	4.3	2.9	3.9
Receivables	27.5	26.0	30.2
Inventory (Avg Cst)	--	--	--
Other	16.5	32.7	30.7
Current Assets	48.3	61.6	64.8
Accts Payable	12.7	14.9	8.1
Debt Due	1.4	1.9	1.9
Other	21.7	29.4	25.6
Current Liab.	35.8	46.2	35.6

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	5.5%	2.0%	1.5%
"Cash Flow"	2.0%	-6.5%	12.5%
Earnings	-1.5%	-19.5%	9.5%
Dividends	9.5%	9.0%	6.0%
Book Value	10.5%	11.5%	1.0%

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	45.2	51.3	54.7	52.0	203.2
2006	50.8	55.4	60.1	57.9	224.2
2007	48.1	55.0	57.4	56.8	217.3
2008	50.8	57.1	59.0	58.1	225
2009	55.0	62.0	63.0	60.0	240

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	d.01	.15	.14	.06	.34
2006	.03	.08	.16	.13	.40
2007	.03	.09	.09	.11	.31E
2008	d.01	.04	.10	.12	.25
2009	.05	.09	.12	.14	.40

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.044	.044	.044	.048	.18
2005	.048	.048	.048	.052	.20
2006	.052	.052	.052	.058	.21
2007	.058	.058	.058	.058	.23
2008	.06	.06	.06	.06	

BUSINESS: Southwest Water Company provides a broad range of services including water production, treatment and distribution; wastewater collection and treatment; utility billing and collection; utility infrastructure construction management; and public works services. It operates out of two groups, Utility (43% of 2007 revenues) and Services (57%). Utility owns and manages rate-regulated public water utilities in California, New Mexico, Oklahoma, and Texas. Services does mostly maintenance work on a contract basis. Off. & dir. own 6.4% of com. shs.; Stein Roe Investment Council, 9.2% (4/08 proxy). CEO and Chairman: Mark Swatek. Inc.: DE. Addr.: One Wilshire Building, 624 S. Grand Ave. Ste. 2900, Los Angeles, CA 90017. Tel.: 213-929-1800. Internet: www.swwc.com.

Profits may likely dry up this year for Southwest Water. Revenues for the second quarter showed a slight 4% increase from the prior year. However, the bottom line did not fare as well, dropping 55%, year over year. The top line benefited from higher contributions from the utility segment, which showed growth of 17%. This was a result of the rate increase that was approved in Texas late last year, as well as the acquisition of a wastewater treatment plant in Birmingham, Alabama, a $23.3 million purchase that was completed in the beginning of the year. The Services division business was down 6%, year over year, but investors should note that comparisons are distorted by the shift of capital project work to the Utilities divisions. Other factors that impacted the top line included weakness in the housing market, the loss of revenues from the electrical contracting department that was shut down late last year, and loss of customer accounts in an increasingly competitive marketplace. The bottom line suffered from rising costs of repair and maintenance, and greater depreciation costs applied to the Texas utility.

A number of outstanding petitions in the courts may lead to an earnings recovery over the next few years. In California, a rate increase case has been filed, and if approved, will add up to $6.8 million in annualized revenues. The price hike would begin to be implemented in the first quarter of 2009. Also, an application has been accepted by the New Mexico Public Regulation Commission for a rate hike to cover rising costs of sewage treatment, and a rate increase case will likely be entered with the Albuquerque Bernalillo County Water Utility Authority once an ongoing litigation is concluded. Overall, higher prices from rate increases should support top-and bottom-line improvements out to 2011–2013.

This stock is ranked to mirror the broader market in the coming six- to 12-month period. Also, the earnings recovery we foresee over the approaching 3 to 5 years has already been discounted in the current share price, limiting SWWC's price appreciation potential over this period. As a result, this stock does not have much appeal at this juncture.

John D. Burke *October 24, 2008*

(A) Diluted earnings. Excludes nonrecurring gains (losses): '00, (3¢); '01, (5¢); '02, 1¢; '05, (23¢); '07, (54¢). Next earnings report due mid-December.
(B) Dividends historically paid in late January, April, July, and October.
(C) In millions, adjusted for splits.
(D) Includes intangibles. In 2007: $19.9 million, $0.83/share.
(E) Earnings may not add due to rounding.

Company's Financial Strength	B
Stock's Price Stability	60
Price Growth Persistence	50
Earnings Predictability	55

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AQUA AMERICA NYSE-WTR

RECENT PRICE	17.32	P/E RATIO	21.9 (Trailing: 23.4 / Median: 24.0)	RELATIVE P/E RATIO	1.81	DIV'D YLD	3.1%	VALUE LINE

TIMELINESS 4 Raised 8/15/08
SAFETY 3 Lowered 8/1/03
TECHNICAL 3 Raised 8/1/08
BETA 1.00 (1.00 = Market)

High:	8.5	11.5	11.5	12.0	14.8	15.0	16.8	18.5	29.2	29.8	26.6	22.0
Low:	4.4	7.2	7.6	6.3	9.4	9.6	11.8	14.2	17.5	20.1	18.9	12.2

Target Price Range 2011 | 2012 | 2013

2011-13 PROJECTIONS

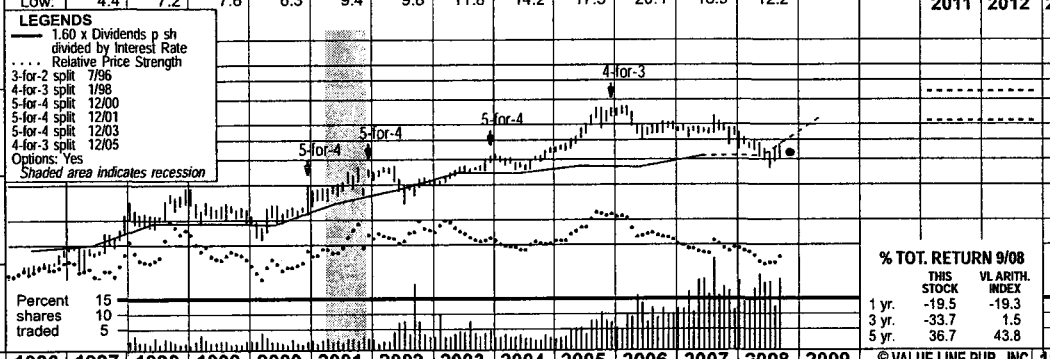
	Price	Gain	Ann'l Total Return
High	35	(+100%)	22%
Low	20	(+15%)	4%

Insider Decisions

	N	D	J	F	M	A	M	J	J
to Buy	0	0	0	0	0	0	0	0	0
Options	1	0	0	1	0	0	1	0	0
to Sell	1	0	0	0	0	0	1	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	115	99	115
to Sell	88	111	111
Hld's(000)	59091	62485	66368



% TOT. RETURN 9/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	-19.5	-19.3
3 yr.	-33.7	1.5
5 yr.	36.7	43.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
1.82	1.70	1.82	1.84	1.86	2.02	2.09	2.41	2.46	2.70	2.85	2.97	3.48	3.85	4.03	4.52	*4.60*	*4.80*	Revenues per sh	*5.40*
.39	.42	.42	.47	.50	.56	.61	.72	.76	.86	.94	.96	1.09	1.21	1.26	1.37	*1.55*	*1.75*	"Cash Flow" per sh	*2.25*
.24	.24	.26	.29	.30	.34	.40	.42	.47	.51	.54	.57	.64	.71	.70	.71	*.75*	*.85*	Earnings per sh A	*1.10*
.20	.21	.21	.22	.23	.24	.26	.27	.28	.30	.32	.35	.37	.40	.44	.48	*.51*	*.54*	Div'd Decl'd per sh B■	*.60*
.60	.47	.46	.52	.48	.58	.82	.90	1.16	1.09	1.20	1.32	1.54	1.84	2.05	1.79	*1.85*	*1.90*	Cap'l Spending per sh	*2.15*
2.09	2.29	2.41	2.46	2.69	2.84	3.21	3.42	3.85	4.15	4.36	5.34	5.89	6.30	6.96	7.32	*7.55*	*7.95*	Book Value per sh	*9.50*
51.20	59.40	59.77	63.74	65.75	67.47	72.20	106.80	111.82	113.97	113.19	123.45	127.18	128.97	132.33	133.40	*135.00*	*136.00*	Common Shs Outst'g C	*139.00*
12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	*Bold figures are*		Avg Ann'l P/E Ratio	*25.0*
.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	*Value Line*		Relative P/E Ratio	*1.65*
6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	*estimates*		Avg Ann'l Div'd Yield	*2.7%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $1219.4 mill. **Due in 5 Yrs** $210.0 mill.
LT Debt $1212.4 mill. **LT Interest** $65.0 mill.
(LT interest earned: 3.3x; total interest coverage: 3.1x) (55% of Cap'l)

Pension Assets-12/07 $147.8 mill. **Oblig.** $194.5 mill.

Pfd Stock None
Common Stock 134,860,178 shares as of 7/23/08

MARKET CAP: $2.3 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
151.0	257.3	275.5	307.3	322.0	367.2	442.0	496.8	533.5	602.5	*620*	*650*	Revenues ($mill)	*750*
28.8	45.0	50.7	58.5	62.7	67.3	80.0	91.2	92.0	95.0	*100*	*115*	Net Profit ($mill)	*155*
40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	39.4%	38.4%	39.6%	38.9%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
--	--	--	--	--	--	--	--	2.9%	3.1%	*2.8%*	*2.8%*	AFUDC % to Net Profit	*2.1%*
52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	50.0%	52.0%	51.6%	55.4%	*55.0%*	*54.5%*	Long-Term Debt Ratio	*52.4%*
46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	50.0%	48.0%	48.4%	44.6%	*45.0%*	*45.5%*	Common Equity Ratio	*47.6%*
496.6	782.7	901.1	990.4	1076.2	1355.7	1497.3	1690.4	1904.4	2191.4	*2275*	*2380*	Total Capital ($mill)	*2770*
609.8	1135.4	1251.4	1368.1	1490.8	1824.3	2069.8	2280.0	2506.0	2792.8	*3000*	*3150*	Net Plant ($mill)	*3600*
7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.7%	6.9%	6.4%	5.9%	*5.9%*	*6.2%*	Return on Total Cap'l	*6.6%*
12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	10.7%	11.2%	10.0%	9.7%	*10.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	10.7%	11.2%	10.0%	9.7%	*10.0%*	*11.0%*	Return on Com Equity	*11.5%*
4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	4.6%	4.9%	3.7%	3.2%	*3.0%*	*3.5%*	Retained to Com Eq	*4.0%*
64%	65%	60%	59%	59%	59%	57%	56%	63%	67%	*69%*	*66%*	All Div'ds to Net Prof	*55%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	44.0	14.5	14.8
Receivables	72.1	82.9	81.9
Inventory (AvgCst)	10.2	8.8	10.9
Other	8.4	9.3	12.3
Current Assets	134.7	115.5	119.9
Accts Payable	49.4	45.8	108.0
Debt Due	150.4	80.8	7.0
Other	55.8	56.6	48.6
Current Liab.	255.6	183.2	163.6
Fix. Chg. Cov.	352%	323%	*305%*

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.0%	9.0%	*4.5%*
"Cash Flow"	9.5%	8.5%	*10.0%*
Earnings	8.5%	7.0%	*7.5%*
Dividends	7.0%	7.5%	*5.5%*
Book Value	10.0%	10.5%	*5.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	114.0	123.1	136.8	122.9	496.8
2006	117.9	131.7	147.0	136.9	533.5
2007	137.3	150.6	165.5	149.1	602.5
2008	139.3	150.8	*175*	*154.9*	*620*
2009	*145*	*160*	*185*	*160*	*650*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.15	.17	.22	.17	.71
2006	.13	.17	.21	.19	.70
2007	.13	.17	.22	.19	.71
2008	.11	.17	*.24*	*.23*	*.75*
2009	*.13*	*.19*	*.26*	*.27*	*.85*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.09	.09	.09	.098	.37
2005	.098	.098	.098	.107	.40
2006	.107	.107	.115	.115	.44
2007	.115	.115	.125	.125	.48
2008	.125	.125	.125	.135	

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.8 million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '07: residential, 60%; commercial, 14%; industrial & other, 26%. Officers and directors own 1.4% of the common stock (4/08 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America is halfway through what looks to be a difficult year. For the second quarter, both the top and bottom lines were flat on a year-over-year basis. Revenue growth was halted by unfavorable weather conditions and the loss of customers from the land seized in Fort Wayne, Indiana earlier in the year.

But the company may be able to build some momentum over the next few quarters. A number of rate cases are in various stages of the regulatory process. The approval of these rate increases would undoubtedly benefit the top and bottom lines. However, the current difficulties in the housing industry that have hampered earnings recently may continue to present a challenge. As a result, we have lowered our share-net tally for 2008 and 2009 by a dime each from our July report, to $0.75 and $0.85 per share, respectively.

Aqua America has been actively expanding its operations through acquisitions. In order to expand its business, the company spent approximately $6.7 million to purchase Honesdale Consolidated Water Company, which is located in Pennsylvania and serves about 6,000 customers. Aqua bought another wastewater service company recently that should add the 12,000 residents in South Haven Indiana to Aqua's customer base. Further acquisitions are likely over the coming years.

The company has increased its quarterly dividend. The board of directors has approved a higher dividend payment of $0.135 per share, and further increases will probably occur, as shown by its historical rise in dividend payouts over the last decade.

These shares are ranked below average (4) for Timeliness. Macroeconomic conditions have slowed down the company's earnings momentum. However, to offset these difficulties, as well as the uncertainties from weather conditions, Aqua will probably continue to purchase smaller companies as a way to bolster its geographical footprint in strategic locations. But, the gains that we expect out to 2011–2013 are discounted in the current stock price, giving these shares average appreciation potential. As such, Aqua may only appeal to income-oriented investors who are attracted to its dividend yield.

John D. Burke *October 24, 2008*

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. May not sum due to rounding. Next earnings report due early November.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	70
Earnings Predictability	100

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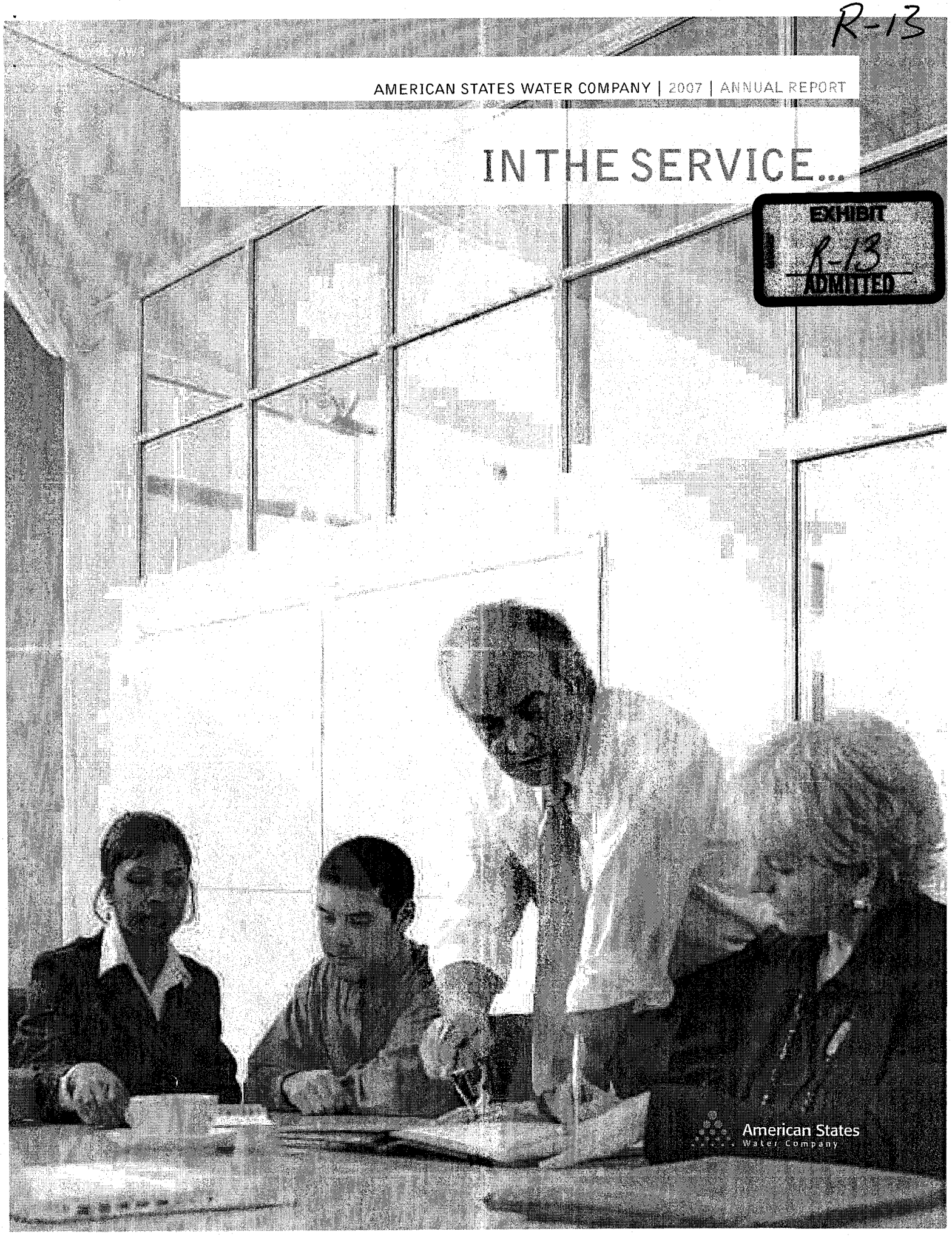
R-13

AMERICAN STATES WATER COMPANY | 2007 | ANNUAL REPORT

IN THE SERVICE...

EXHIBIT
R-13
ADMITTED



American States
Water Company

...TO DELIVER QUALITY

ON THE COVER

- NAME: CHRISTINE SADIPE – HCM CONSULTANT, COMPENSATION & BENEFITS
- NAME: JUAN MIGUEL GUTIERREZ – HCM INTERN, NAVY RESERVES & 2ND GENERATION EMPLOYEE
- NAME: FLOYD E. WICKS – PRESIDENT AND CHIEF EXECUTIVE OFFICER
- NAME: PEGGY PATRICK – HCM ASSOCIATE, ADMINISTRATION

Yes, it's our job. But the service we provide is so much more than a job, more than the utilities we provide to our customers, more than the work we perform on thousands of miles of pipe and related infrastructure. At American States Water Company, parent company of Golden State Water Company (GSWC), Chaparral City Water Company (CCWC) and American States Utility Services, Inc. (ASUS) the service we provide is our people—quality people. They're utility workers and maintenance technicians, electricians and water supply operators, civil engineers and project engineers, accountants—and of course,—customer service representatives.

Together, we provide "Best-in-Class" utility service to over one million people in California and Arizona—and to the United States Armed Forces in Texas, New Mexico, Maryland, Virginia, South Carolina and North Carolina. We are the people of American States Water Company and we're in the service of delivering—water that meets all federal and state standards, reliable power and, of course, so much more.

NAME: CINDY MEDINA

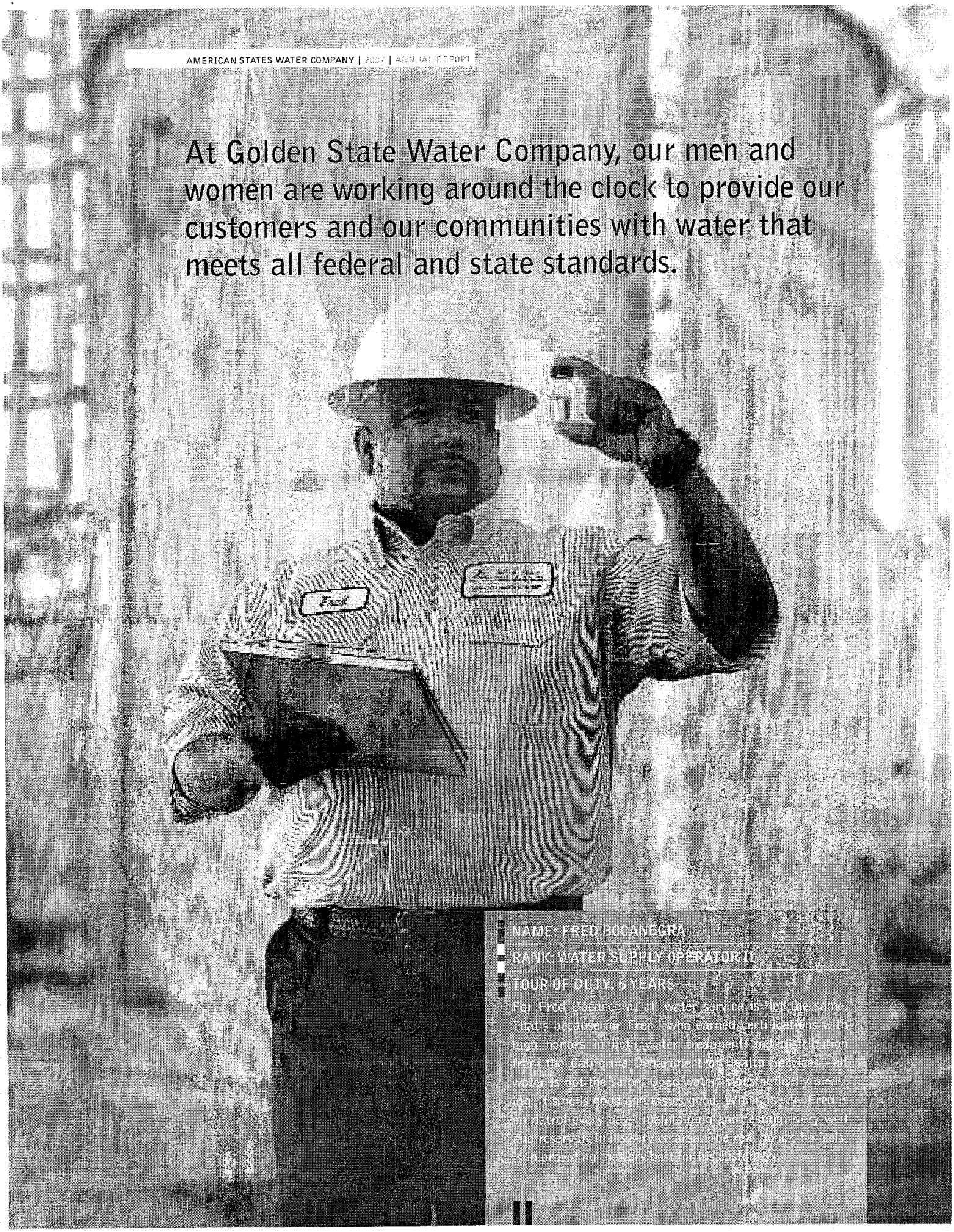
RANK: CUSTOMER SERVICE REPRESENTATIVE

TOUR OF DUTY: 11 MONTHS

Before joining our ranks, Cindy had been that voice of assistance with another company. She knows customer service. And yet, at Golden State, Cindy feels that she's been given the best tools for the job—including a real understanding of water, as well as great water service. Together with her colleagues, they were the first call center of their kind dedicated to exceptional service, 24 hours a day, 7 days a week.

...TO OUR CUSTOMERS

At Golden State Water Company, our men and women are working around the clock to provide our customers and our communities with water that meets all federal and state standards.

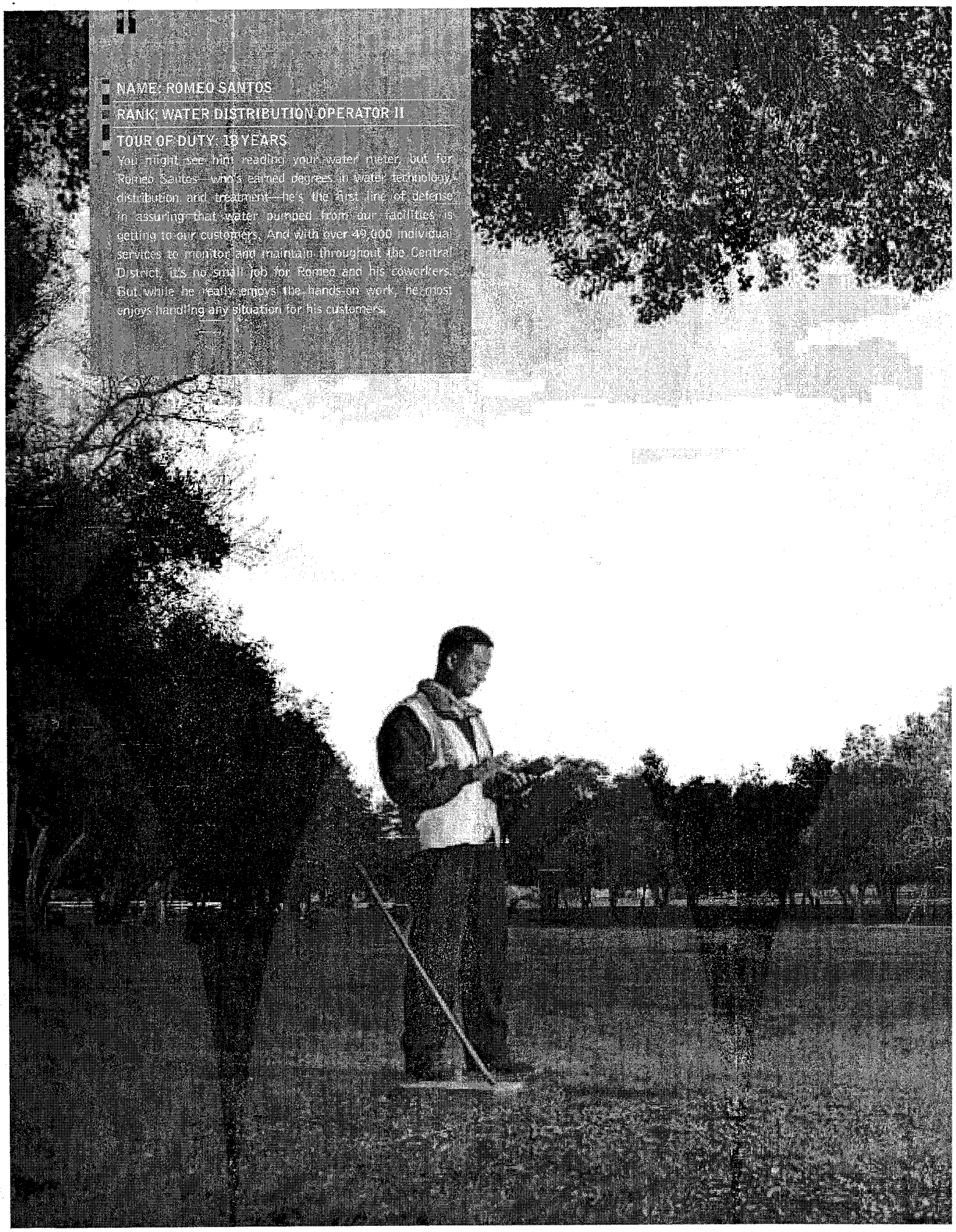


NAME: FRED BOCANEGRA

RANK: WATER SUPPLY OPERATOR II

TOUR OF DUTY: 6 YEARS

For Fred Bocanegra, all water service is not the same. That's because for Fred – who earned certifications with high honors in both water treatment and distribution from the California Department of Health Services – all water is not the same. Good water is aesthetically pleasing, it smells good and tastes good. And that's why Fred is on patrol every day – maintaining and testing every well and reservoir in his service area. The real honor he feels is in providing the very best for his customers.

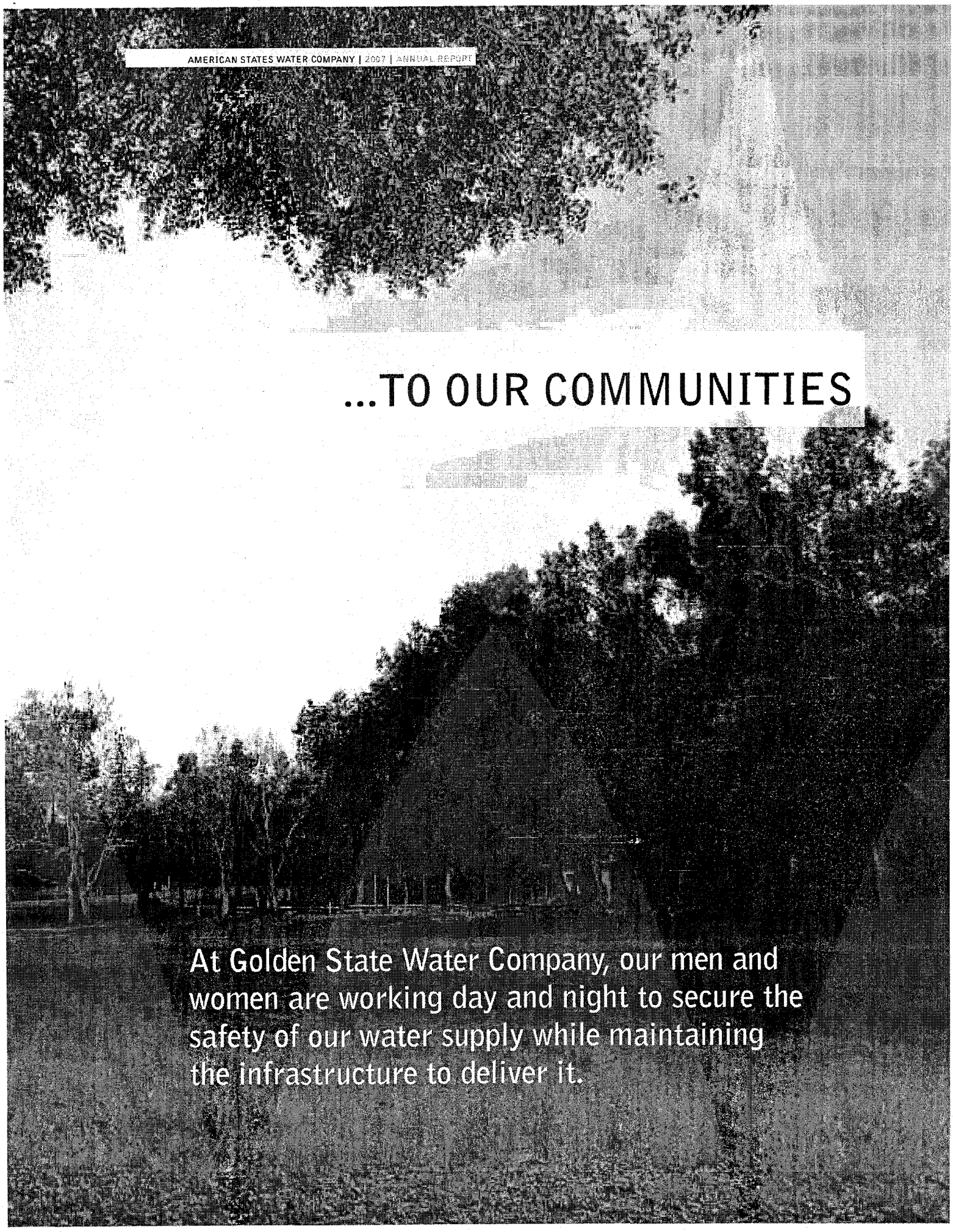


NAME: ROMEO SANTOS

RANK: WATER DISTRIBUTION OPERATOR II

TOUR OF DUTY: 18 YEARS

You might see him reading your water meter, but for Romeo Santos—who's earned degrees in water technology, distribution and treatment—he's the first line of defense in assuring that water pumped from our facilities is getting to our customers. And with over 49,000 individual services to monitor and maintain throughout the Central District, it's no small job for Romeo and his coworkers. But while he really enjoys the hands-on work, he most enjoys handling any situation for his customers.



...TO OUR COMMUNITIES

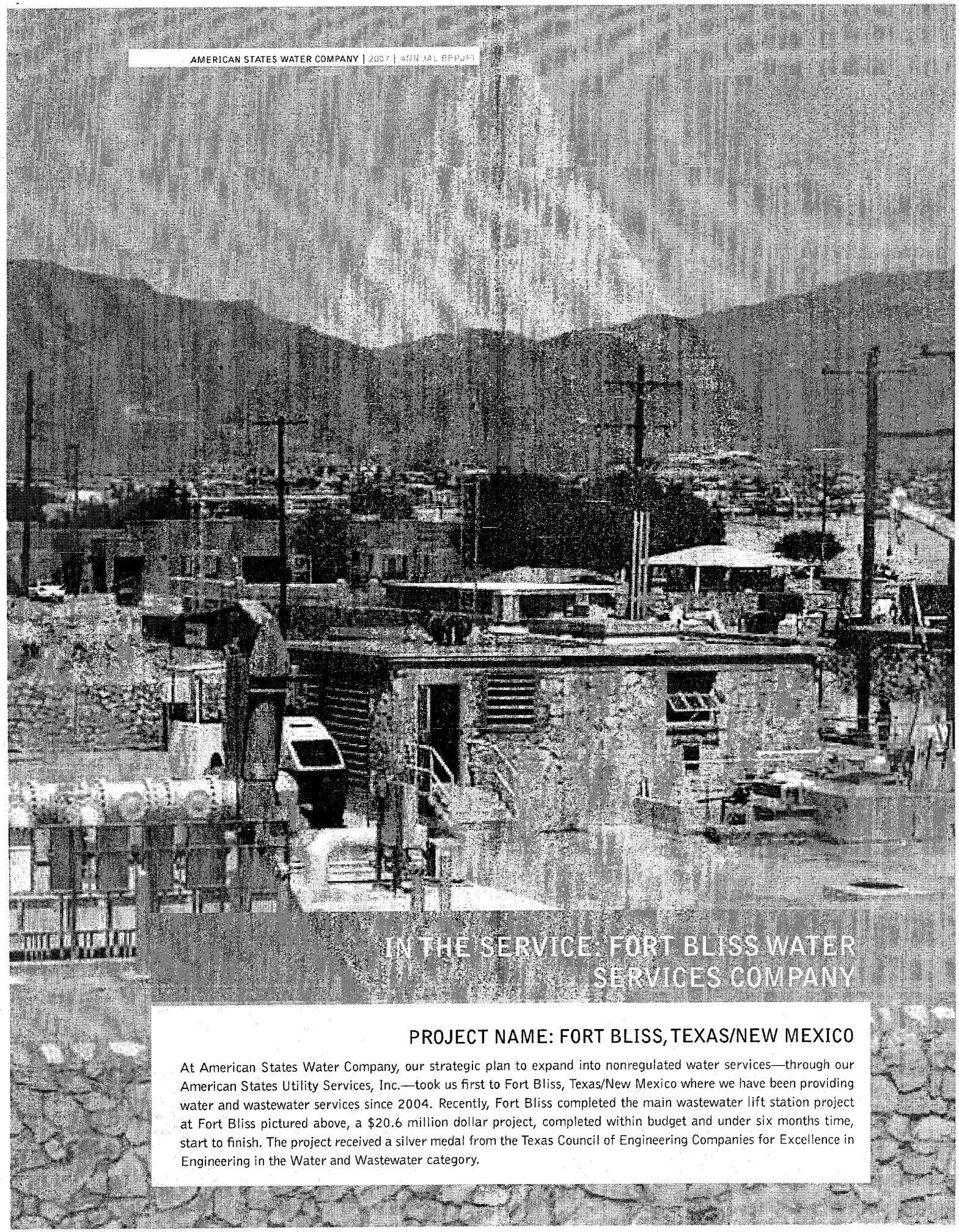
At Golden State Water Company, our men and women are working day and night to secure the safety of our water supply while maintaining the infrastructure to deliver it.

NAME: MANNY CERVANTES

RANK: UTILITY WORKER I

TOUR OF DUTY: 2 MONTHS

Although he's a new recruit to Fort Bliss, Manny Cervantes is anything but raw—having served in water and wastewater operations for the past 16 years. Still, at FBWSC, he continues to train and sharpen his skills in order to deploy the very latest, most efficient technologies for Fort Bliss—technologies that can repair and provide preventative maintenance at the same time. Knowledge, communication and follow-through—it's how Manny Cervantes does his part to keep this base running smoothly.



IN THE SERVICE: FORT BLISS WATER SERVICES COMPANY

PROJECT NAME: FORT BLISS, TEXAS/NEW MEXICO

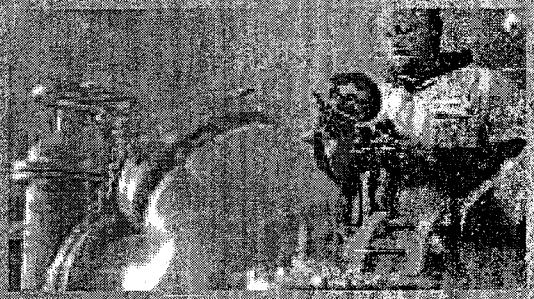
At American States Water Company, our strategic plan to expand into nonregulated water services—through our American States Utility Services, Inc.—took us first to Fort Bliss, Texas/New Mexico where we have been providing water and wastewater services since 2004. Recently, Fort Bliss completed the main wastewater lift station project at Fort Bliss pictured above, a $20.6 million dollar project, completed within budget and under six months time, start to finish. The project received a silver medal from the Texas Council of Engineering Companies for Excellence in Engineering in the Water and Wastewater category.

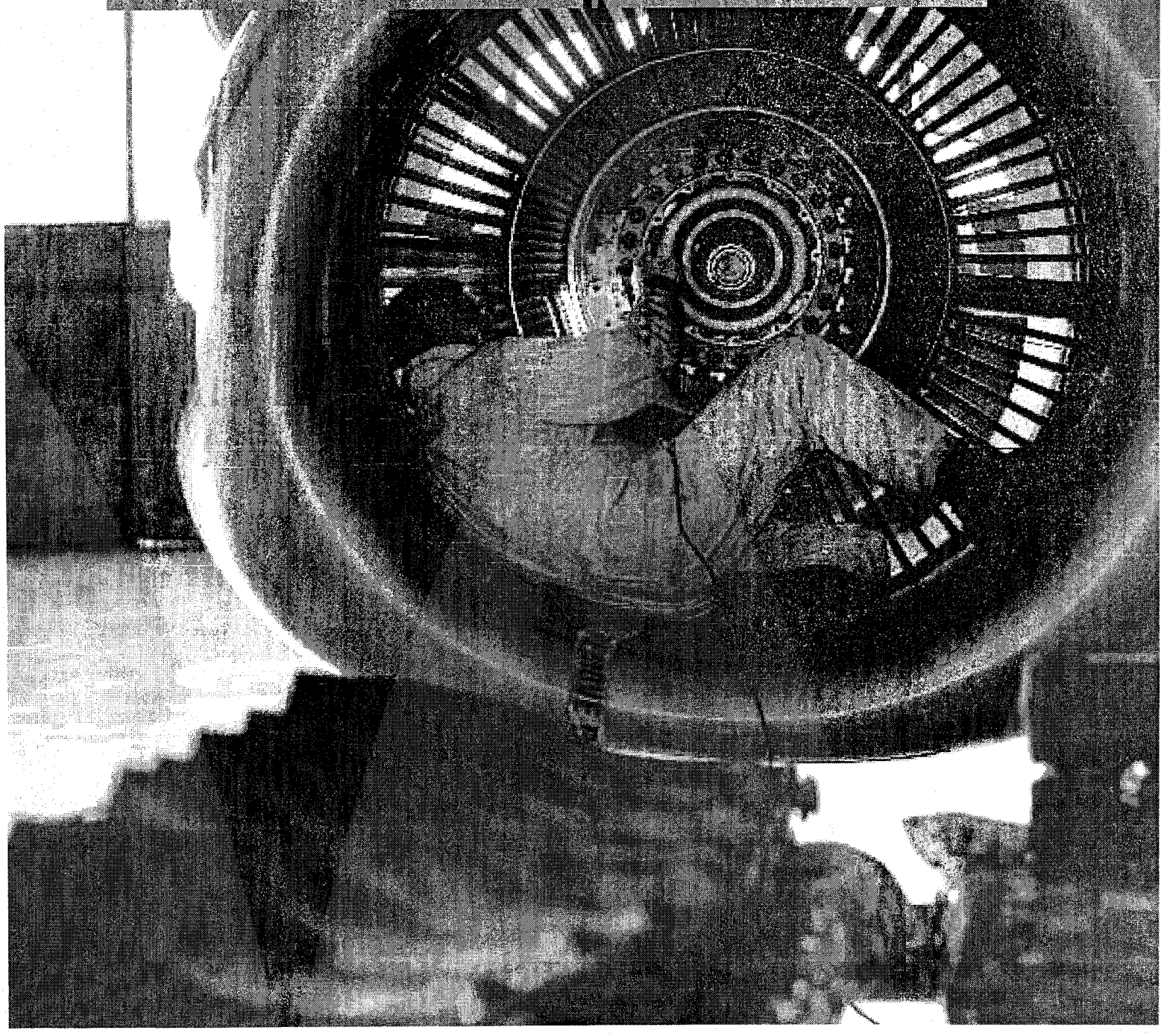
NAME: MELVIN BROOKS

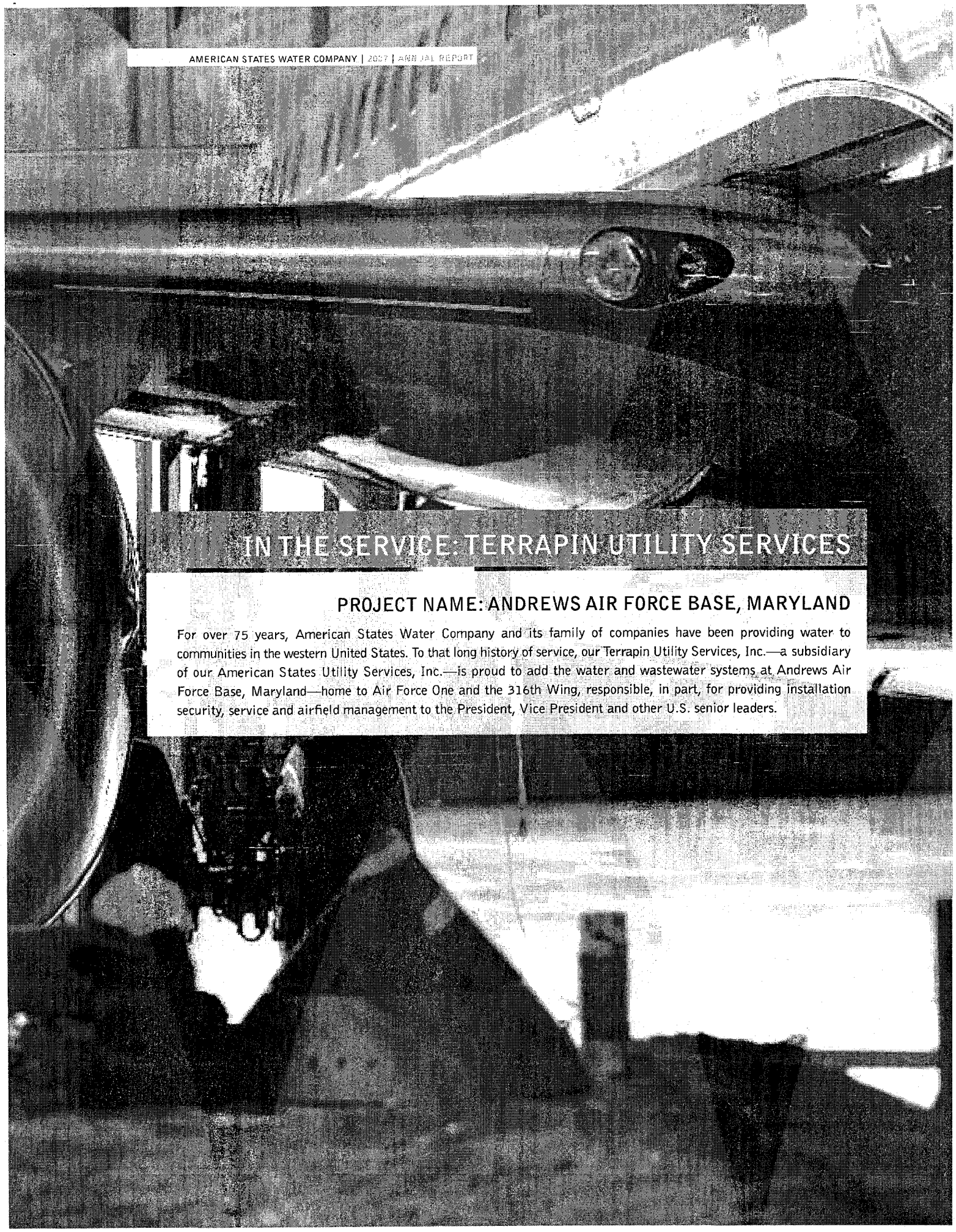
RANK: UTILITY WORKER

TOUR OF DUTY: 2 YEARS

Melvin Brooks is a busy man. In fact—as a virtual one-man army in charge of all water and wastewater lines here at Andrews AFB—he was unable to break for even a minute to share his story of service. Granted, he's assisted by a team of utility workers stationed here at the base, but with daily maintenance to perform, problems to troubleshoot, and emergencies to handle, Melvin's actions on his customers' behalf can speak in his stead.







IN THE SERVICE: TERRAPIN UTILITY SERVICES

PROJECT NAME: ANDREWS AIR FORCE BASE, MARYLAND

For over 75 years, American States Water Company and its family of companies have been providing water to communities in the western United States. To that long history of service, our Terrapin Utility Services, Inc.—a subsidiary of our American States Utility Services, Inc.—is proud to add the water and wastewater systems at Andrews Air Force Base, Maryland—home to Air Force One and the 316th Wing, responsible, in part, for providing installation security, service and airfield management to the President, Vice President and other U.S. senior leaders.

NAME: THOMAS CHAPMAN

RANK: UTILITY WORKER

TOUR OF DUTY: 2 YEARS

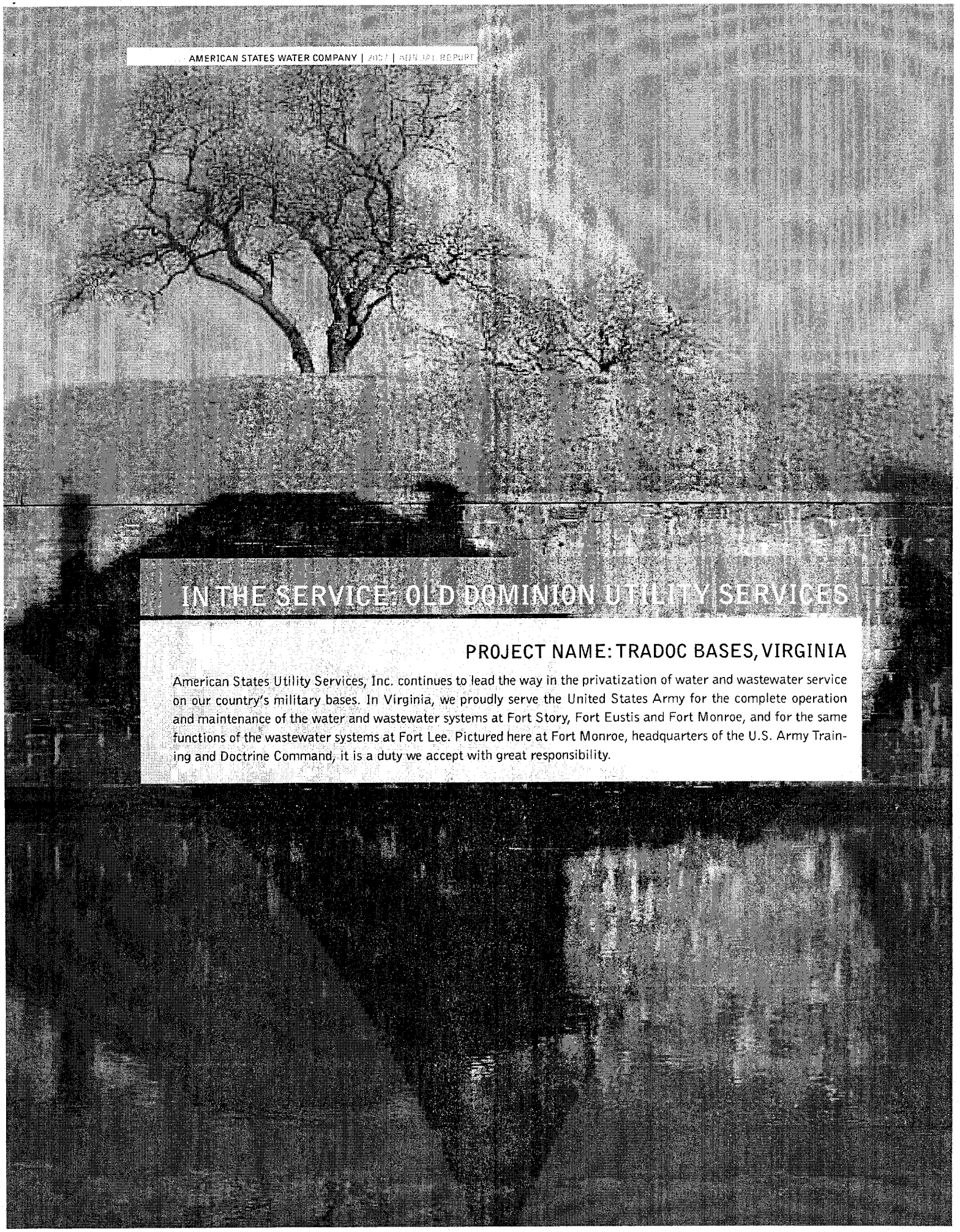
A Vietnam War veteran, Thomas Chapman fully understands service. It's giving of yourself for the betterment of your community and your nation. And he continues to give of himself, bringing his 40 years of utility experience to the service of our country's military bases. Whether his day calls for him to troubleshoot problems at a waste water lift station or test water quality, for Thomas, it's all in the line of duty.

NAME: KARL VON SCHMIDT-PAULI

RANK: UTILITY WORKER

TOUR OF DUTY: 18 MONTHS

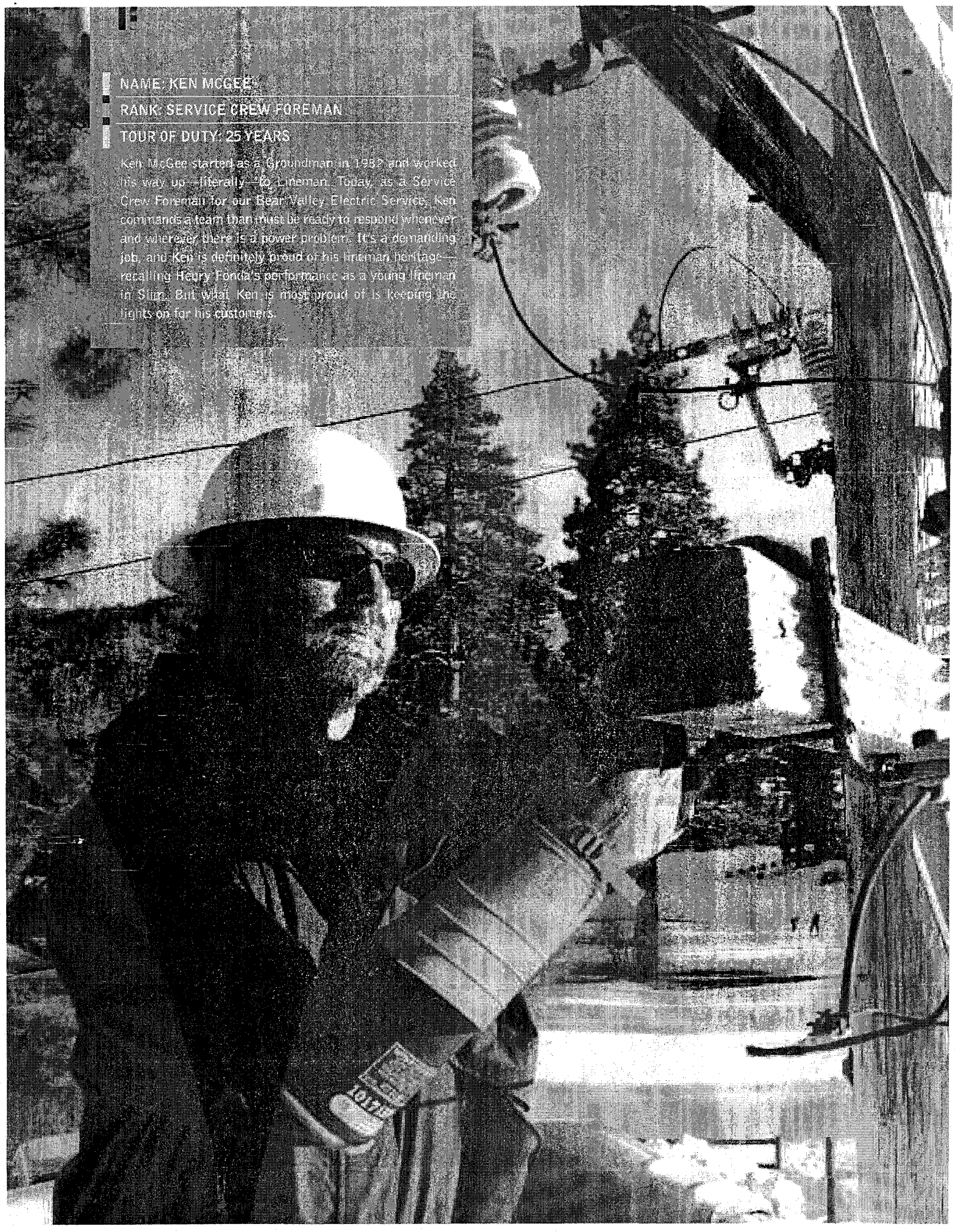
With years of experience in water services to his name, Karl von Schmidt-Pauli was recruited to assist in our mission for the U.S. Army at Fort Eustis, Fort Monroe and Fort Story. As a Utility Worker for Old Dominion Utility Services, Inc., he performs a myriad of critical tasks — from testing and flushing fire hydrants to putting new pumps into service. For Karl, however, he's doing more than providing a service — he's providing a quality service.



IN THE SERVICE: OLD DOMINION UTILITY SERVICES

PROJECT NAME: TRADOC BASES, VIRGINIA

American States Utility Services, Inc. continues to lead the way in the privatization of water and wastewater service on our country's military bases. In Virginia, we proudly serve the United States Army for the complete operation and maintenance of the water and wastewater systems at Fort Story, Fort Eustis and Fort Monroe, and for the same functions of the wastewater systems at Fort Lee. Pictured here at Fort Monroe, headquarters of the U.S. Army Training and Doctrine Command, it is a duty we accept with great responsibility.



NAME: KEN MCGEE

RANK: SERVICE CREW FOREMAN

TOUR OF DUTY: 25 YEARS

Ken McGee started as a Groundman in 1982 and worked his way up—literally—to Lineman. Today, as a Service Crew Foreman for our Bear Valley Electric Service, Ken commands a team than must be ready to respond whenever and wherever there is a power problem. It's a demanding job, and Ken is definitely proud of his lineman heritage—recalling Henry Fonda's performance as a young lineman in Slim. But what Ken is most proud of is keeping the lights on for his customers.

BRANCH SERVICES

At American States Water Company, we're working together to get the job done.

GROUP: ACCOUNTING AND FINANCE

The accounting and finance department is responsible for the preparation and integrity of the Company's financial statements, and the effectiveness of its disclosure controls and procedures. The department also aggressively manages the Company's cash and secures external funding sources to support the Company's operating and capital expenditures.

GROUP: HUMAN CAPITAL MANAGEMENT

Our Human Capital Management program seeks to sustain and strengthen efforts for engagement, development, retention, performance management and workforce planning with greater emphasis on accountability and metrics. The program builds upon the Company's Strategic Plan and aligns with our overall mission that the heart of our Company is service to our customers, our shareholders and our employees.

GROUP: REGULATORY AFFAIRS

Working with the California Public Utilities Commission and Arizona Corporation Commission in providing our investors with a reasonable return while providing our customer with a reliable supply at a reasonable price.

GROUP: ENVIRONMENTAL QUALITY

The Environmental Quality Group works together as an innovative team and industry leader focused on compliance with current regulations, future water quality and environmental issues and providing service and value to our stakeholders.

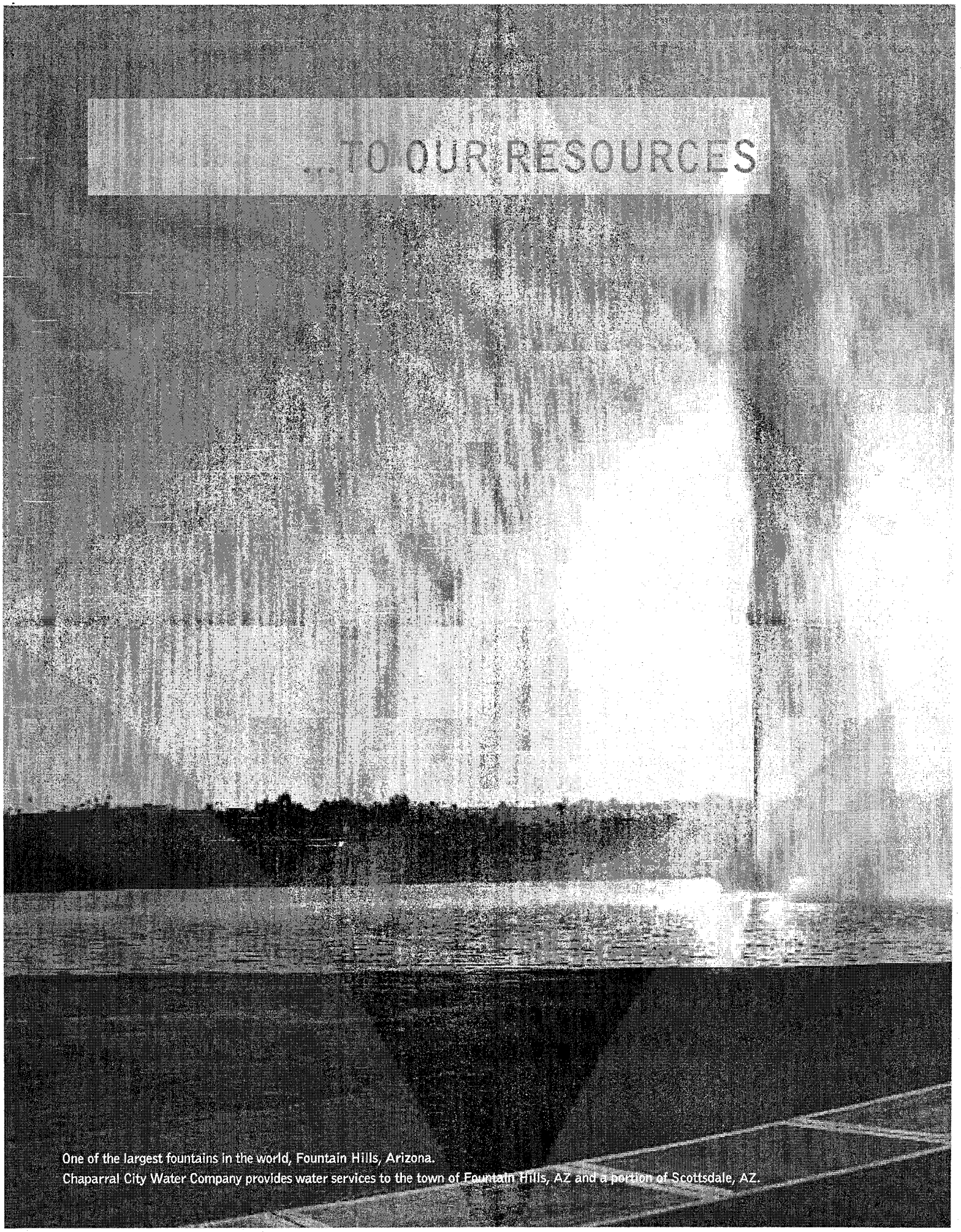
GROUP: WATER OPERATIONS

At the very core of our business, GSWC and CCWC operate 39 water systems throughout California and Arizona. For the 300+ water operations team, the daily mission is to provide exceptional customer service, to operate and maintain water distribution systems and water supply facilities, and to ensure water quality standards.

We are committed to maintaining positive relationships with the cities, counties and communities we serve, as well as a safe work environment.

GROUP: ASSET MANAGEMENT

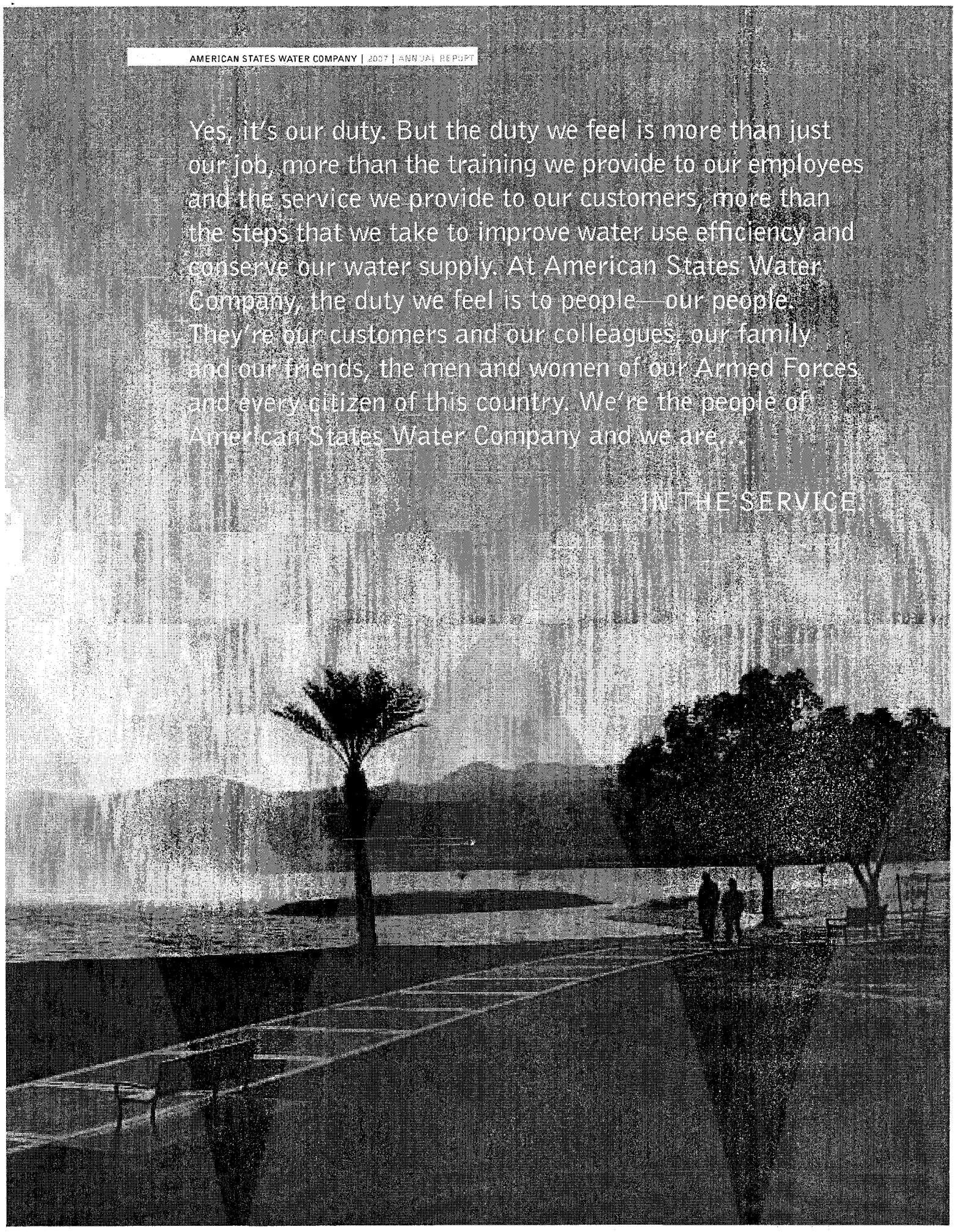
The Asset Management group will allow GSWC to focus upon efficient management of new capital projects and infrastructure replacement projects as well as efficient operation and maintenance of existing infrastructure utilities (assets). The overall goal is to provide and maintain the necessary assets to operations so that we can continue to deliver high quality and essential services to our customers.



One of the largest fountains in the world, Fountain Hills, Arizona.
Chaparral City Water Company provides water services to the town of Fountain Hills, AZ and a portion of Scottsdale, AZ.

Yes, it's our duty. But the duty we feel is more than just our job, more than the training we provide to our employees and the service we provide to our customers, more than the steps that we take to improve water use efficiency and conserve our water supply. At American States Water Company, the duty we feel is to people—our people. They're our customers and our colleagues, our family and our friends, the men and women of our Armed Forces and every citizen of this country. We're the people of American States Water Company and we are,

IN THE SERVICE.



TO OUR SHAREHOLDERS

2007 was another successful year for American States Water Company (AWR) as the strategies we employed in the past, and continue to employ today, are paying off.

We manage the Company with a long-term view and believe many of the key objectives achieved in 2007, listed immediately below, position the Company for a bright future.

- Higher reported and adjusted earnings for 2007 as compared to 2006 (incorporated within this Annual Report is the SEC Form 10-K)
- Improved credit ratings at both AWR and Golden State Water Company (GSWC), as Standard & Poor's revised the ratings during August 2007 for both companies from "A-" with a "positive" outlook to "A" with a "stable" outlook
- Increased the quarterly common dividend from $0.235 per share to $0.25 per share in October 2007, a 6.4% increase, the largest increase in the AWR quarterly common dividend in the last ten years; the Company has increased dividends on an aggregate annual basis for more than 53 consecutive years, while maintaining one of the lowest payout ratios in the water industry
- A favorable decision by the California Public Utilities Commission (CPUC) on the Region II/General Office rate case at the GSWC subsidiary
- A favorable CPUC decision on GSWC's Region I rate case
- A California Court of Appeal Order affirmed dismissal of court cases alleging that GSWC and other water utilities delivered unsafe water to their customers in the San Gabriel and Pomona valleys (for a detailed description of this matter, please see page 118 of the attached SEC Form 10-K)
- Increased operating income at non-regulated subsidiary American States Utility Services, Inc. (ASUS) in 2007 primarily due to successful management by ASUS of a $20.6 million wastewater expansion project at Fort Bliss, Texas
- Notified during the fall 2007 that ASUS won bids to provide water and wastewater services to Fort Jackson, South Carolina and Fort Bragg, North Carolina

Despite such key achievements, we were very disappointed by the performance of the stock market generally and the Company's common stock price toward the end of the year, as it declined from $38.62 at year-end 2006 to $37.68 at year-end 2007. Due to a continued general weakening in the stock market, AWR's stock price declined further, during the first two months of 2008. However, as a result of the annual dividend, total return to shareholders was still marginally positive for calendar 2007. AWR's compounded annual return to shareholders for the period 2003-2007 was 13.7% compared to 12.8% for the S&P 500.

EARNINGS PERFORMANCE

Basic earnings were $1.62 per share for 2007 and fully diluted earnings were $1.61 per share, compared to reported earnings per share of $1.34 and $1.33 on a basic and fully diluted basis, respectively, for 2006. Because the Company is subject to accounting adjustments each year, an investor should look beyond the current year's reported earnings to determine whether financial performance has improved. We have presented a comparison of earnings in the table on the following page, after removing two significant accounting adjustments for the years shown. A more thorough description of the two adjustments is presented in the paragraphs below the following table.

	2007	2006
Diluted EPS as reported	$ 1.61	$ 1.33
Adjusted by:		
Unrealized (gain) loss on purchased power contracts	(0.07)	.24
Water rights lease revenues from the City of Folsom recognized for prior years	0	(0.08)
Diluted EPS after removing the effects on earnings of these 2 items	$ 1.54	$ 1.49

In 2002, the Company's Bear Valley Electric Division entered into a purchased power contract that qualifies as a derivative under generally accepted accounting principles and, as a result, each month the Company has to mark to market the remaining amounts to be purchased under the contract, which expires at the end of 2008. As the contract is marked to market, an unrealized gain or loss is recognized on the income statement. The power we purchase under the derivative contract is only used to service our electric customers' demand and the Company does not engage in trading activities of purchased power. Although the unrealized gains and losses may result in significant fluctuations to our income statement, they have no effect on our cash flows. When analyzing the financial performance of the Company, we exclude the effects of derivative gains and losses as they are not reflective of day-to-day operations. For a discussion of power contracts, please see pages 29 and 50 of the attached SEC Form 10-K.

As a result of a favorable CPUC decision in 2006, GSWC recognized as a benefit to shareholders $2.3 million of revenues collected from the City of Folsom for the lease of water rights for 2004 and 2005. We have removed the associated earnings per share impact from the reported earnings in the table above. However, reported earnings for 2007 and 2006 include ongoing revenues of $1.3 million and $1.2 million, respectively, from the Folsom water rights lease.

As shown in the above table, an improvement in financial performance was indeed achieved for 2007 as compared to 2006, after removing the two significant accounting adjustments. Financial performance was bolstered in 2007 by water rate increases, higher water sales, an improved supply mix, and a significant improvement in performance at ASUS. A detailed discussion of the improved AWR performance is presented on pages 21 thru 32 of the SEC Form 10-K. Increased earnings, coupled with $51 million in cash flows generated from operations during 2007, illustrate the financial strength of the Company.

Though we are pleased that we were able to grow earnings in 2007 from the 2006 level, the Company is not without its challenges. Please see Note 13 – Contingencies beginning on page 118 of the attached SEC Form 10-K for a discussion of outstanding legal issues. In addition to the items listed under Note 13, on February 15, 2007, the CPUC issued a subpoena to GSWC in connection with an investigation of certain work orders and charges paid to a specific contractor used by GSWC for numerous construction projects. Please see page 58 of the attached SEC Form 10-K for a further discussion of this matter.

HUMAN CAPITAL MANAGEMENT

We have always been a Company that has recognized the importance of our employees to the success of the Company. In 2007, increased emphasis was placed on planning for and managing the needs of our people. The former Human Resources department was combined with our in-house Employee Development University under one umbrella, which is now named Human Capital Management. To prepare our organization for the future, we need to continue to recruit, educate, and retain some of the best and brightest in the utility industry.

GOLDEN STATE WATER COMPANY CONTINUES THE KEY TENETS OF ITS STRATEGY

Golden State Water Company continues to be the flagship of AWR representing 86% and 96% of AWR's revenues and net income, respectively, for 2007 and accounting for 92% of AWR's assets at the end of 2007. The Company has spent a great deal of time and effort in formulating a strategy that will enable GSWC to succeed well into the future. The key tenets of GSWC's strategy include: (1) timely filing for rate recovery, (2) a well-managed infrastructure replacement program, (3) a customer service culture, (4) maintaining a strong water supply portfolio and (5) establishing a rate structure that provides the right customer incentives for conservation of precious water resources.

TIMELY FILING FOR RATE RECOVERY

Timely recovery of operating expenses and capital expenditures in rates charged to customers is the life-blood of regulated utilities. We understand the importance of this and we are focused on it. In November 2007, GSWC received a favorable final decision on its Region II and General Office rate case. Though this decision was nearly one year late, GSWC was allowed to implement interim rates, with the final rates retroactive to January 1, 2007. The Company received another favorable rate decision in January 2008 on GSWC's Region I case. The financial implications of these decisions are described in detail on pages 53 thru 54 of the attached SEC Form 10-K. In 2008, we will be filing general rate cases (GRCs) for all our regulated water regions, except for Region I. This represents the largest general rate case filing in the Company's history. The new consolidated GRC is expected to have an eighteen-month processing schedule. We must also file a separate application to determine the rate of return to be authorized by the CPUC.

A WELL-MANAGED INFRASTRUCTURE REPLACEMENT PROGRAM

Managing the replacement of aging infrastructure is one of the Company's major challenges. During 2007, GSWC spent $46.7 million on capital expenditures, nearly double the Company's depreciation and in 2008 we plan to invest $53-$58 million in capital expenditures to upgrade our water supply and distribution facilities. We have hired additional people in our Asset Management area to help administer the capital expenditure process. It is also necessary to stage our capital expenditures in order to avoid rate shock to our customers.

A CUSTOMER SERVICE CULTURE

GSWC has been in business since 1929 because of our customer service culture. This is a tradition of doing "whatever it takes" to satisfy customers. We were one of the first publicly traded water companies to have a call center that was open seven days per week, twenty-four hours per day. We are currently in the process of evaluating the replacement of our Customer Information System in an effort to provide even better service. Though the system will take several years to replace, this step exhibits our desire to maintain the high service quality for which we have become known.

MAINTAINING A STRONG WATER SUPPLY PORTFOLIO

On page 13 of the attached SEC Form 10-K, one can notice that the Company has listed it groundwater rights for the first time. With all the concern about diminishing water supplies in the western states, it is imperative that the Company maintain a strong position to protect its rights to pump approximately 55% of the water supplied to customers, from company-owned production wells. Rounding out the portfolio are 46 connections to a network of pipelines owned and operated by the Metropolitan Water District of Southern California, which provide imported water supplies for 32 of the Company's 39 systems in California, representing approximately 44% of the water supplied to customers.

A RATE STRUCTURE THAT PROVIDES THE RIGHT INCENTIVES

We continue our efforts to be good stewards of the Company's valuable water resources. To that end, we have been active in sending messages to our customers to conserve water and have proposed water rates to the CPUC that encourage conservation. In February 2007, the CPUC opened an Order Instituting Investigation (Conservation OII) to consider policies designed to achieve conservation objectives. On October 19, 2007, GSWC and the Division of Ratepayers Advocates of the CPUC filed a settlement agreement regarding a conservation rate design and a water revenue adjustment mechanism (WRAM) to essentially de-couple volume of sales from GSWC's revenues. If the settlement is approved by the CPUC, GSWC would implement an increasing block rate design as a means to encourage water conservation. GSWC would also establish a WRAM balancing account to track actual revenues compared to those which are forecasted in the rate case. WRAMs have already been approved by the CPUC for use by other California water companies.

In May 2007, the CPUC issued a ruling in the Conservation OII which directed the parties in the proceeding, including GSWC, to address the issue of whether the adoption of a revenue adjustment mechanism should affect the authorized rate of return. We anticipate that the CPUC will issue a decision on this issue in the second quarter of 2008.

BEAR VALLEY ELECTRIC DIVISION OF GOLDEN STATE WATER COMPANY

GSWC provides electric service to more than 23,000 customers in the Big Bear recreational area of California through its Bear Valley Electric Division (BVE). Some of BVE's key strategies for 2008 include timely filing for rate recovery, the establishment of a new purchased-power contract for beyond 2008 and continued efforts to provide exceptional service to its customers. BVE plans to file a rate case during May 2008 that, when approved, should increase its contribution to AWR's profitability. We are currently working with a power supplier on a new purchased power contract for 2009 and beyond and are discussing with the staff of the CPUC the appropriate rate treatment for such a commitment.

AMERICAN STATES UTILITY SERVICES, INC.

2007 represented a year of growth and solid execution at this growing subsidiary. ASUS was established by AWR in 1998 to provide the Company with: 1) a relatively low-risk, growth investment that would allow us to capitalize on our competencies in operating water systems and offering related services; 2) a vehicle to diversify regulatory risk by investing in other high growth states; and 3) a footprint in other parts of the country to enable us to make other acquisitions in the water industry. 2007 was an exciting year for ASUS as it successfully completed a $20.6 million wastewater expansion project at Fort Bliss, improved its financial performance by recording pretax operating income of $2.0 million for 2007 as compared to $100,000 in 2006, and landed the water and wastewater privatizations at Fort Jackson, South Carolina and Fort Bragg, North Carolina. With the additions of Fort Jackson and Fort Bragg, ASUS is now managing water facilities at seven military bases and wastewater facilities at eight bases.

ASUS' strategy includes timely filing for request for equitable adjustments and price redeterminations at its current bases, competing for additional bases, successfully assimilating Fort Jackson and Fort Bragg, and selectively hiring staff to enhance the business. Under the privatization contracts, ASUS is allowed to obtain price adjustments (redeterminations) two years after commencing operation at a military base and every three years thereafter. We consider the price redetermination process similar to a rate case on the utility side of our business. To be successful, we need to be able to charge prices that reflect our costs of serving the military bases and we are dedicated to completing these processes in 2008.

We continue to seek new bases to manage and believe spreading the administrative costs of operating ASUS across more bases will add to profitability. The military has been slow to award bases and a number of the RFPs it has issued are stale and will be reissued. However, it is believed that the RFP responses can be updated at a relatively low cost. Operation of the water and wastewater facilities at Fort Jackson and Fort Bragg commenced on January 2, 2008 and March 1, 2008, respectively. These are significant undertakings, particularly given the size of Fort Bragg. It has been exciting to watch ASUS' growth in revenues and profitability. Such growth is managed properly through the addition of qualified people, i.e., "human capital management". We will continue to implement our high standards and be selective in whom we hire.

CHAPARRAL CITY WATER COMPANY

Chaparral City Water Company (CCWC) provides water service to approximately 13,500 customers in the Fountain Hills area of Arizona. In October 2007, CCWC filed for a rate increase with the Arizona Corporation Commission (ACC) and expects to receive a decision sometime in 2009. Providing excellent customer service and ensuring an adequate water supply continue to be two of CCWC's main goals. To that end, during 2007 CCWC entered into a commitment with the Central Arizona Conservation District to purchase 1,931 acre-feet of Central Arizona Project water rights.

CLOSING

Our board of directors, management, and all the Company's employees remain dedicated and committed to providing superior service to customers and maximizing shareholder value. In light of the increased focus on human capital management, we have designed this year's annual report around the people of American States Water. On behalf of the men and women of the Company, we would like to thank you for your continued support.

NAME: LLOYD E. ROSS

RANK: CHAIRMAN OF THE BOARD

SIGNATURE:

NAME: FLOYD E. WICKS

RANK: PRESIDENT AND CHIEF EXECUTIVE OFFICER

SIGNATURE:

WHO WE ARE

American States Water Company (AWR) is the parent of Golden State Water Company (GSWC), Chaparral City Water Company (CCWC), and American States Utility Services, Inc. (ASUS).

GSWC is a public utility company regulated by the California Public Utilities Commission (CPUC). GSWC engages principally in the reliable delivery of water. GSWC operates 89 separate water systems within 76 communities in 10 counties in the state of California and provides water service to over 1 million people, or 1 out of every 30 Californians. In addition, GSWC provides electric service to over 23,000 customers in the Big Bear recreational area in California.

CCWC, an Arizona public utility regulated by the Arizona Corporation Commission (ACC), provides water service to approximately 13,500 customers located in the town of Fountain Hills and small portion of Scottsdale.

ASUS is a nonregulated company, and through its wholly-owned subsidiaries Fort Bliss Water Services Company, Texarkana Utility Services, Inc., Old Dominion Utility Services, Inc., Pautuxent State Utility Services, Inc. and Old North Utility Services, Inc. provides full-service contracts to operate and maintain water and wastewater systems for the United States Army and Air Force in Texas, New Mexico, Maryland, Virginia, South Carolina, and North Carolina, respectively.

AWR continues to offer its investors the opportunity to invest with a company whose track record is historically indicative of stability and growth. AWR has paid dividends to shareholders every year since 1931 and has increased the dividend payout received by shareholders annually since 1953.

EXHIBIT
R-14
ADMITTED

CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-07-0551

DIRECT TESTIMONY
ON COST OF CAPITAL

OF

WILLIAM A. RIGSBY, CRRA

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

SEPTEMBER 30, 2008

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INTRODUCTION

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

A. My Name is William A. Rigsby. I am a Public Utilities Analyst V employed by the Residential Utility Consumer Office ("RUCO") located at 1110 W. Washington, Suite 220, Phoenix, Arizona 85007.

Q. Please describe your qualifications in the field of utilities regulation and your educational background.

A. I have been involved with utilities regulation in Arizona since 1994. During that period of time I have worked as a utilities rate analyst for both the Arizona Corporation Commission ("ACC" or "Commission") and for RUCO. I hold a Bachelor of Science degree in the field of finance from Arizona State University and a Master of Business Administration degree, with an emphasis in accounting, from the University of Phoenix. I have been awarded the professional designation, Certified Rate of Return Analyst ("CRRA") by the Society of Utility and Regulatory Financial Analysts ("SURFA"). The CRRA designation is awarded based upon experience and the successful completion of a written examination. Appendix I, which is attached to this testimony, further describes my educational background and also includes a list of the rate cases and regulatory matters that I have been involved with.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present recommendations that are based on my analysis of Chaparral City Water Company Inc.'s ("Chaparral" or "Company") application for a permanent rate increase ("Application") for the Company's Water operations in eastern Maricopa County. Chaparral filed the Application with the ACC on September 26, 2007. Chaparral has chosen the operating period ended December 31, 2006 for the test year ("Test Year") in this proceeding.

Q. Briefly describe Chaparral's operations in Arizona.

A. According to Chaparral's Application, and the Direct Testimony of the Company's District Manager, Mr. Robert N. Hanford, Chaparral provided water service to approximately 13,500 customers in the Town of Fountain Hills and a small portion of the City of Scottsdale during the Test Year. Chaparral is a wholly owned subsidiary of American States Water Company ("American States"), a utility holding company based in San Dimas, California, which is publicly traded on the New York Stock Exchange ("NYSE"). American States acquired 100 percent of Chaparral's common stock from MCO Properties., Inc. during October 2000[1].

...

[1] ACC Decision No. 62909 Dated September 18, 2000

Q. Please explain your role in RUCO's analysis of Chaparral's Application.

A. I reviewed Chaparral's Application and performed a cost of capital analysis to determine a fair rate of return on the Company's invested capital. In addition to my recommended capital structure, my direct testimony will present my recommended costs of common equity and my recommended costs of short-term and long-term debt (Chaparral has no preferred stock). The recommendations contained in this testimony are based on information obtained from Company responses to data requests, the Company's Application and from market-based research that I conducted during my analysis.

Q. Is this your first case involving Chaparral?

A. No. I was the ACC Staff member who recommended Commission approval of American State's proposed acquisition of Chaparral in 2000. Later, as an analyst for RUCO, I testified on the cost of capital issues in Chaparral's prior rate case that was filed with the Commission in August of 2004.

Q. Were you also responsible for conducting an analysis on the Company's proposed revenue level, rate base and rate design?

A. No. RUCO witness Timothy J. Coley handled those aspects of the Company's Application.

Q. What areas will you address in your testimony?

A. I will address the cost of capital issues associated with the case. I am also filing, under separate cover, testimony on Chaparral's request to recover legal expenses associated with the Company's appeal of Decision No. 68176.

Q. Please identify the exhibits that you are sponsoring.

A. I am sponsoring Schedules WAR-1 through WAR-9.

SUMMARY OF TESTIMONY AND RECOMMENDATIONS

Q. Briefly summarize how your cost of capital testimony is organized.

A. My cost of capital testimony is organized into seven sections. First, the introduction I have just presented and second, the summary of my testimony that I am about to give. Third, I will present the findings of my cost of equity capital analysis, which utilized both the discounted cash flow ("DCF") method, and the capital asset pricing model ("CAPM"). These are the two methods that RUCO and ACC Staff have consistently used for calculating the cost of equity capital in rate case proceedings in the past, and are the methodologies that the ACC has given the most weight to in setting allowed rates of returns for utilities that operate in the Arizona jurisdiction. In this third section I will also provide a brief overview of the current economic climate that Chaparral is operating in. Fourth, I will discuss my recommended cost of debt. Fifth, I will compare my

recommended capital structure with the Company-proposed capital structure. Sixth, I will explain my weighted cost of capital recommendation and seventh, I will comment on Chaparral's cost of capital testimony. Schedules WAR-1 through WAR-9 will provide support for my cost of capital analysis.

Q. Please summarize the recommendations and adjustments that you will address in your testimony.

A. Based on the results of my analysis of Chaparral, I am making the following recommendations:

Cost of Equity Capital – I am recommending a 6.38 percent cost of equity capital to be applied to the Company's fair value rate base ("FVRB"). This 6.38 percent figure is based on the results that I obtained in my cost of equity analysis, which employed both the DCF and CAPM methodologies. My recommended FVRB cost of common equity includes a 200 basis point inflation factor adjustment that was calculated using the same method adopted by the Commission in Decision No. 70441.

Cost of Short-Term Debt – I am recommending a 3.13 percent cost of short-term debt. This is based on my review of the (London Interbank Offered Rate ("LIBOR") assigned to inter-company debt that exists between Chaparral and its parent, American States.

Cost of Long-Term Debt – I am recommending a 5.34 percent cost of long-term debt. This is based on my review of the costs associated with Chaparral's various bond issuances.

Capital Structure – I am recommending a capital structure which is comprised of 4.10 percent short-term debt, 20.20 percent long-term debt and 75.70 percent common equity, be adopted by the Commission.

Weighted Average Cost of Capital – Based on the results of my recommended capital structure, cost of common equity, and debt analyses, I am recommending a 6.38 percent FVRB cost of capital for Chaparral. This figure represents the weighted cost of my recommended costs of short-term debt, long-term debt and FVRB cost of common equity (which includes a 200 basis point inflation factor adjustment).

Q. Why do you believe that your recommended 6.38 percent cost of capital is an appropriate rate of return for Chaparral to earn on its invested capital?

A. The 6.38 percent cost of capital figure that I have recommended meets the criteria established in the landmark Supreme Court cases of Bluefield Water Works & Improvement Co. v. Public Service Commission of West Virginia (262 U.S. 679, 1923) and Federal Power Commission v. Hope Natural Gas Company (320 U.S. 391, 1944). Simply stated, these two

cases affirmed that a public utility that is efficiently and economically managed is entitled to a return on investment that instills confidence in its financial soundness, allows the utility to attract capital, and also allows the utility to perform its duty to provide service to ratepayers. The rate of return adopted for the utility should also be comparable to a return that investors would expect to receive from investments with similar risk.

The Hope decision allows for the rate of return to cover both the operating expenses and the "capital costs of the business" which includes interest on debt and dividend payment to shareholders. This is predicated on the belief that, in the long run, a company that cannot meet its debt obligations and provide its shareholders with an adequate rate of return will not continue to supply adequate public utility service to ratepayers.

Q. Do the Bluefield and Hope decisions indicate that a rate of return sufficient to cover all operating and capital costs is guaranteed?

A. No. Neither case *guarantees* a rate of return on utility investment. What the Bluefield and Hope decisions *do allow*, is for a utility to be provided with the *opportunity* to earn a reasonable rate of return on its investment. That is to say that a utility, such as Chaparral, is provided with the opportunity to earn an appropriate rate of return if the Company's management exercises good judgment and manages its assets and resources in a manner that is both prudent and economically efficient.

COST OF EQUITY CAPITAL

Q. What is your final recommended cost of equity capital for Chaparral?

A. I am recommending a FVRB cost of equity of 6.83 percent. My recommended 6.83 percent FVRB cost of equity figure represents the 8.83 percent mean average of the results of my DCF and CAPM analyses, which utilized both a sample of publicly traded water providers and a sample of publicly traded natural gas local distribution companies ("LDC") to calculate an original cost rate base ("OCRB") cost of equity capital, and a 200 basis point inflation factor adjustment (Schedule WAR-1 page 4 of 5). My 200 basis point inflation factor adjustment was calculated using the same method adopted by the Commission in Decision No. 70441.

Discounted Cash Flow (DCF) Method

Q. Please explain the DCF method that you used to estimate Chaparral's cost of equity capital.

A. The DCF method employs a stock valuation model known as the constant growth valuation model, that bears the name of Dr. Myron J. Gordon (i.e. the Gordon model), the professor of finance who was responsible for its development. Simply stated, the DCF model is based on the premise that the current price of a given share of common stock is determined by the present value of all of the future cash flows that will be generated by that share of common stock. The rate that is used to discount these cash flows back to their present value is often referred to as the investor's cost

of capital (i.e. the cost at which an investor is willing to forego other investments in favor of the one that he or she has chosen).

Another way of looking at the investor's cost of capital is to consider it from the standpoint of a company that is offering its shares of stock to the investing public. In order to raise capital, through the sale of common stock, a company must provide a required rate of return on its stock that will attract investors to commit funds to that particular investment. In this respect, the terms "cost of capital" and "investor's required return" are one in the same. For common stock, this required return is a function of the dividend that is paid on the stock. The investor's required rate of return can be expressed as the percentage of the dividend that is paid on the stock (dividend yield) plus an expected rate of future dividend growth. This is illustrated in mathematical terms by the following formula:

$$k = \frac{D_1}{P_0} + g$$

where: k = the required return (cost of equity, equity capitalization rate),

$\frac{D_1}{P_0}$ = the dividend yield of a given share of stock calculated by dividing the expected dividend by the current market price of the given share of stock, and

g = the expected rate of future dividend growth

This formula is the basis for the standard growth valuation model that I used to determine Chaparral's cost of equity capital.

Q. In determining the rate of future dividend growth for Chaparral, what assumptions did you make?

A. There are two primary assumptions regarding dividend growth that must be made when using the DCF method. First, dividends will grow by a constant rate into perpetuity, and second, the dividend payout ratio will remain at a constant rate. Both of these assumptions are predicated on the traditional DCF model's basic underlying assumption that a company's earnings, dividends, book value and share growth all increase at the same constant rate of growth into infinity. Given these assumptions, if the dividend payout ratio remains constant, so does the earnings retention ratio (the percentage of earnings that are retained by the company as opposed to being paid out in dividends). This being the case, a company's dividend growth can be measured by multiplying its retention ratio (1 - dividend payout ratio) by its book return on equity. This can be stated as $g = b \times r$.

...

Q. Would you please provide an example that will illustrate the relationship that earnings, the dividend payout ratio and book value have with dividend growth?

A. RUCO consultant Stephen Hill illustrated this relationship in a Citizens Utilities Company 1993 rate case by using a hypothetical utility.[2]

Table I

	Year 1	Year 2	Year 3	Year 4	Year 5	Growth
Book Value	$10.00	$10.40	$10.82	$11.25	$11.70	4.00%
Equity Return	10%	10%	10%	10%	10%	N/A
Earnings/Sh.	$1.00	$1.04	$1.082	$1.125	$1.170	4.00%
Payout Ratio	0.60	0.60	0.60	0.60	0.60	N/A
Dividend/Sh	$0.60	$0.624	$0.649	$0.675	$0.702	4.00%

Table I of Mr. Hill's illustration presents data for a five-year period on his hypothetical utility. In Year 1, the utility had a common equity or book value of $10.00 per share, an investor-expected equity return of ten percent, and a dividend payout ratio of sixty percent. This results in earnings per share of $1.00 ($10.00 book value x 10 percent equity return) and a dividend of $0.60 ($1.00 earnings/sh. x 0.60 payout ratio) during Year 1. Because forty percent (1 - 0.60 payout ratio) of the utility's earnings are retained as opposed to being paid out to investors, book value increases to $10.40 in Year 2 of Mr. Hill's illustration. Table I

[2] Citizens Utilities Company, Arizona Gas Division, Docket No. E-1032-93-111, Prepared Testimony, dated December 10, 1993, p. 25.

presents the results of this continuing scenario over the remaining five-year period.

The results displayed in Table I demonstrate that under "steady-state" (i.e. constant) conditions, book value, earnings and dividends all grow at the same constant rate. The table further illustrates that the dividend growth rate, as discussed earlier, is a function of (1) the internally generated funds or earnings that are retained by a company to become new equity, and (2) the return that an investor earns on that new equity. The DCF dividend growth rate, expressed as g = b x r, is also referred to as the internal or sustainable growth rate.

Q. If earnings and dividends both grow at the same rate as book value, shouldn't that rate be the sole factor in determining the DCF growth rate?

A. No. Possible changes in the expected rate of return on either common equity or the dividend payout ratio make earnings and dividend growth by themselves unreliable. This can be seen in the continuation of Mr. Hill's illustration on a hypothetical utility.

Table II

	Year 1	Year 2	Year 3	Year 4	Year 5	Growth
Book Value	$10.00	$10.40	$10.82	$11.47	$12.158	5.00%
Equity Return	10%	10%	15%	15%	15%	10.67%
Earnings/Sh	$1.00	$1.04	$1.623	$1.720	$1.824	16.20%
Payout Ratio	0.60	0.60	0.60	0.60	0.60	N/A
Dividend/Sh	$0.60	$0.624	$0.974	$1.032	$1.094	16.20%

In the example displayed in Table II, a sustainable growth rate of four percent[3] exists in Year 1 and Year 2 (as in the prior example). In Year 3, Year 4 and Year 5, however, the sustainable growth rate increases to six percent.[4] If the hypothetical utility in Mr. Hill's illustration were expected to earn a fifteen-percent return on common equity on a continuing basis, then a six percent long-term rate of growth would be reasonable. However, the compound growth rates for earnings and dividends, displayed in the last column, are 16.20 percent. If this rate were to be used in the DCF model, the utility's return on common equity would be expected to increase by fifty percent every five years, [(15 percent ÷ 10 percent) – 1]. This is clearly an unrealistic expectation.

Although it is not illustrated in Mr. Hill's hypothetical example, a change in only the dividend payout ratio will eventually result in a utility paying out more in dividends than it earns. While it is not uncommon for a utility in the real world to have a dividend payout ratio that exceeds one hundred percent on occasion, it would be unrealistic to expect the practice to continue over a sustained long-term period of time.

...

[3] [(Year 2 Earnings/Sh – Year 1 Earnings/Sh) ÷ Year 1 Earnings/Sh] = [($1.04 - $1.00) ÷ $1.00] = [$0.04 ÷ $1.00] = 4.00%

[4] [(1 – Payout Ratio) x Rate of Return] = [(1 - 0.60) x 15.00%] = 0.40 x 15.00% = 6.00%

Q. Other than the retention of internally generated funds, as illustrated in Mr. Hill's hypothetical example, are there any other sources of new equity capital that can influence an investor's growth expectations for a given company?

A. Yes, a company can raise new equity capital externally. The best example of external funding would be the sale of new shares of common stock. This would create additional equity for the issuer and is often the case with utilities that are either in the process of acquiring smaller systems or providing service to rapidly growing areas.

Q. How does external equity financing influence the growth expectations held by investors?

A. Rational investors will put their available funds into investments that will either meet or exceed their given cost of capital (i.e. the return earned on their investment). In the case of a utility, the book value of a company's stock usually mirrors the equity portion of its rate base (the utility's earning base). Because regulators allow utilities the opportunity to earn a reasonable rate of return on rate base, an investor would take into consideration the effect that a change in book value would have on the rate of return that he or she would expect the utility to earn. If an investor believes that a utility's book value (i.e. the utility's earning base) will increase, then he or she would expect the return on the utility's common stock to increase. If this positive trend in book value continues over an

extended period of time, an investor would have a reasonable expectation for sustained long-term growth.

Q. Please provide an example of how external financing affects a utility's book value of equity.

A. As I explained earlier, one way that a utility can increase its equity is by selling new shares of common stock on the open market. If these new shares are purchased at prices that are higher than those shares sold previously, the utility's book value per share will increase in value. This would increase both the earnings base of the utility and the earnings expectations of investors. However, if new shares sold at a price below the pre-sale book value per share, the after-sale book value per share declines in value. If this downward trend continues over time, investors might view this as a decline in the utility's sustainable growth rate and will have lower expectations regarding growth. Using this same logic, if a new stock issue sells at a price per share that is the same as the pre-sale book value per share, there would be no impact on either the utility's earnings base or investor expectations.

...

Q. Please explain how the external component of the DCF growth rate is determined.

A. In his book, The Cost of Capital to a Public Utility,[5] Dr. Gordon (the individual responsible for the development of the DCF or constant growth model) identified a growth rate that includes both expected internal and external financing components. The mathematical expression for Dr. Gordon's growth rate is as follows:

$$g = (br) + (sv)$$

where:	g	=	DCF expected growth rate,
	b	=	the earnings retention ratio,
	r	=	the return on common equity,
	s	=	the fraction of new common stock sold that accrues to a current shareholder, and
	v	=	funds raised from the sale of stock as a fraction of existing equity.
and	v	=	$1 - [(BV) \div (MP)]$
where:	BV	=	book value per share of common stock, and
	MP	=	the market price per share of common stock.

[5] Gordon, M.J., The Cost of Capital to a Public Utility, East Lansing, MI: Michigan State University, 1974, pp. 30-33.

Q. Did you include the effect of external equity financing on long-term growth rate expectations in your analysis of expected dividend growth for the DCF model?

A. Yes. The external growth rate estimate (sv) is displayed on Page 1 of Schedule WAR-4, where it is added to the internal growth rate estimate (br) to arrive at a final sustainable growth rate estimate.

Q. Please explain why your calculation of external growth on page 2 of Schedule WAR-4, is the current market-to-book ratio averaged with 1.0 in the equation [(M ÷ B) + 1] ÷ 2.

A. The market price of a utility's common stock will tend to move toward book value, or a market-to-book ratio of 1.0, if regulators allow a rate of return that is equal to the cost of capital (one of the desired effects of regulation). As a result of this situation, I used [(M ÷ B) + 1] ÷ 2 as opposed to the current market-to-book ratio by itself to represent investor's expectations that, in the future, a given utility will achieve a market-to-book ratio of 1.0.

Q. Has the Commission ever adopted a cost of capital estimate that included this assumption?

A. Yes. In a prior Southwest Gas Corporation rate case[6], the Commission adopted the recommendations of ACC Staff's cost of capital witness, Stephen Hill, who I noted earlier in my testimony. In that case, Mr. Hill

[6] Decision No. 68487, Dated February 23, 2006 (Docket No. G-01551A-04-0876)

used the same methods that I have used in arriving at the inputs for the DCF model. His final recommendation for Southwest Gas Corporation was largely based on the results of his DCF analysis, which incorporated the same valid market-to-book ratio assumption that I have used consistently in the DCF model as a cost of capital witness for RUCO.

Q. How did you develop your dividend growth rate estimate?

A. I analyzed data on two separate proxy groups. A water company proxy group comprised of four publicly traded water companies and a natural gas proxy group consisting of ten natural gas local distribution companies ("LDC") which have similar operating characteristics to water providers.

Q. Why did you use a proxy group methodology as opposed to a direct analysis of Chaparral?

A. One of the problems in performing this type of analysis is that the utility applying for a rate increase is not always a publicly traded company, as is the case with Chaparral itself. Although shares of Chaparral's parent, American States, are publicly traded, there is no financial data available on dividends paid on *publicly held* shares of Chaparral itself. Consequently it was necessary to create a proxy by analyzing publicly traded water companies and LDC's with similar risk characteristics.

Q. Are there any other advantages to the use of a proxy?

A. Yes. As I noted earlier, the U.S. Supreme Court ruled in the Hope decision that a utility is entitled to earn a rate of return that is commensurate with the returns on investments of other firms with comparable risk. The proxy technique that I have used derives that rate of return. One other advantage to using a sample of companies is that it reduces the possible impact that any undetected biases, anomalies, or measurement errors may have on the DCF growth estimate.

Q. What criteria did you use in selecting the companies that make up your water company proxy for Chaparral?

A. Three of the four water companies used in the proxy are publicly traded on the New York Stock Exchange ("NYSE"), and one of them, Southwest Water Company is traded over the counter through the National Association of Securities Dealers Automated Quotation System ("NASDAQ"). All four water companies are followed by The Value Line Investment Survey ("Value Line") and are the same companies that comprise Value Line's large capitalization Water Utility Industry segment of the U.S. economy (Attachment A contains Value Line's July 25, 2008 update of the water utility industry and evaluations of the four water companies used in my proxy).

Q. What companies comprise your water company proxy group?

A. My water company proxy group includes Chaparral's parent company, American States (stock ticker symbol "AWR"), Aqua America, Inc. ("WTR"), formerly known as Philadelphia Suburban Corporation, California Water Service Group ("CWT") and Southwest Water Company ("SWWC"). Each of these water companies face the same types of risk that Chaparral faces. For the sake of brevity, I will refer to each of these companies, with the exception of American States, by their appropriate stock ticker symbols henceforth.

Q. Briefly describe the areas served by the companies in your water company sample proxy.

A. In addition to providing water service to residents of Fountain Hills through its wholly owned subsidiary Chaparral, American States also serves communities located in Los Angeles, Orange and San Bernardino counties in California. CWT provides service to customers in seventy-five communities in California, New Mexico and Washington. CWT's principal service areas are located in the San Francisco Bay area, the Sacramento, Salinas and San Joaquin Valleys and parts of Los Angeles. SWWC owns and manages regulated systems in California, New Mexico, Oklahoma and Texas. WTR is a holding company for a large number of water and wastewater utilities operating in nine different states including

Pennsylvania, Ohio, New Jersey, Illinois, Maine, North Carolina, Texas, Florida and Kentucky.

Q. Are these the same water companies that Chaparral used in its application?

A. Chaparral's cost of equity witness, Mr. Thomas Bourassa, used the same water companies included in my proxy with the exception of SWWC. Mr. Bourassa also used three other water companies in his cost of capital analysis[7] which are included in Value Line's Small and Mid Cap Edition.

Q. Why did you exclude the water companies that are followed in Value Line's Small and Mid Cap Edition?

A. Value Line does not provide the same type of forward-looking information (i.e. long-term estimates on return on common equity and share growth) on small and mid-cap companies that it provides on the four water companies that I used in my proxy. Consequently, these water companies are not as suitable as the ones that I have used in my analysis.

Q. What criteria did you use in selecting the natural gas LDC's included in your proxy for Chaparral?

A. As are the water companies that I just described, each of the natural gas LDC's used in the proxy are publicly traded on a major stock exchange (all

[7] Connecticut Water Service, Inc., Middlesex Water Company and SJW Corp.

ten trade on the NYSE) and are followed by Value Line. Each of the ten LDC's in my sample are tracked in Value Line's natural gas Utility industry segment. All of the companies in the proxy are engaged in the provision of regulated natural gas distribution services. Attachment B of my testimony contains Value Line's most recent evaluation of the natural gas proxy group that I used for my cost of common equity analysis.

Q. What companies are included your natural gas proxy?

A. The ten natural gas LDC's included in my proxy (and their NYSE ticker symbols) are AGL Resources, Inc. ("ATG"), Atmos Energy Corp. ("ATO"), Laclede Group, Inc. ("LG"), New Jersey Resources Corporation ("NJR"), Nicor, Inc. ("GAS"), Northwest Natural Gas Co. ("NWN"), Piedmont Natural Gas Company ("PNY"), South Jersey Industries, Inc. ("SJI") Southwest Gas Corporation ("SWX"), which is the dominant natural gas provider in Arizona, and WGL Holdings, Inc. ("WGL"). These are the same ten LDC's that I analyzed recently in the UNS Gas, Inc. proceeding.[8]

Q. Briefly describe the regions of the U.S. served by the ten natural gas LDC's that make up your sample proxy.

A. The ten LDC's listed above provide natural gas service to customers in the Middle Atlantic region (i.e. NJI which serves portions of northern New Jersey, SJI which serves southern New Jersey and WGL which serves the

[8] Docket No. G-04204A-06-0463

Washington D.C. metro area), the Southeast and South Central portions of the U.S. (i.e. ATG which serves Virginia, southern Tennessee and the Atlanta, Georgia area and PNY which serves customers in North Carolina, South Carolina and Tennessee), the South, deep South and Midwest (i.e. ATO which serves customers in Kentucky, Mississippi, Louisiana, Texas, Colorado and Kansas, GAS which provides service to northern and western Illinois, and LG which serves the St. Louis area), and the Pacific Northwest (i.e. NWN which serves Washington state and Oregon). Portions of Arizona, Nevada and California are served by SWX.

Q. Did the Company's witness also perform a similar analysis using natural gas LDC's?

A. No, he did not.

Q. Please explain your DCF growth rate calculations for the sample companies used in your proxy.

A. Schedule WAR-5 provides retention ratios, returns on book equity, internal growth rates, book values per share, numbers of shares outstanding, and the compounded share growth for each of the utilities included in the sample for the historical observation period 2003 to 2007 for both the water and LDC industries. Schedule WAR-5 also includes Value Line's projected 2008, 2009 and 2011-13 values for the retention ratio, equity

return, book value per share growth rate, and number of shares outstanding for both the water utilities and the LDC's.

Q. Please describe how you used the information displayed in Schedule WAR-5 to estimate each comparable utility's dividend growth rate.

A. In explaining my analysis, I will use Chaparral's parent, American States as an example. The first dividend growth component that I evaluated was the internal growth rate. I used the "b x r" formula (described on pages 12 and 13) to multiply AWR's earned return on common equity by its earnings retention ratio for each year in the 2003 to 2007 observation period to derive the utility's annual internal growth rates. I used the mean average of this five-year period as a benchmark against which I compared the projected growth rate trends provided by Value Line. Because an investor is more likely to be influenced by recent growth trends, as opposed to historical averages, the five-year mean noted earlier was used only as a benchmark figure. As shown on Schedule WAR-5, Page 1, American States had sustainable internal growth that averaged 2.51 percent over the course of the 2003 to 2007 observation period. This reflects an upward trend that began during the 2004 operating period. American States rebounded from negative growth of 0.72 percent in 2003 to 1.01 percent in 2004. Internal growth climbed from 1.01 percent in 2004 to 3.79 percent during 2007. Value Line is predicting a slight decrease to 3.74 percent during 2008 but then sees increased growth through the

2011-13 time frame. After weighing Value Line's projections on earnings, dividends and book value, I believe that a 6.50% rate of growth is reasonable for AWR.

Q. Please continue with the external growth rate component portion of your analysis.

A. Schedule WAR-5 demonstrates that the pattern of shares outstanding for American States increased from 15.21 million to 17.23 million from 2003 to 2007. Value Line is predicting that this level will increase from 17.75 million in 2008 to 19.00 million by the end of 2013. Based on this data, I believe that a 2.50 percent growth in shares is not unreasonable for American States. My final dividend growth rate estimate for AWR is 7.93 percent (6.50 percent internal + 1.43 percent external) and is shown on Page 1 of Schedule WAR-4.

Q. What is your average dividend growth rate estimate using the DCF model for the sample water utilities?

A. Based on the DCF model, my average dividend growth rate estimate is 6.30 percent as displayed on page 1 of Schedule WAR-4.

Q. Did you use the same approach to determine an average dividend growth rate for the proxy comprised of natural gas LDC's?

A. Yes.

Q. What is your average dividend growth rate estimate using the DCF model for the sample natural gas utilities?

A. Based on the DCF model, my average dividend growth rate estimate is 5.97 percent, which is also displayed on page 1 of Schedule WAR-4.

Q. How does your average dividend growth rate estimates on water companies compare to the growth rate data published by Value Line and other analysts?

A. Schedule WAR-6 compares my sustainable growth estimates with the five-year projections of analysts at both Investment Research, Inc. ("Zacks") (Attachment C) and Value Line. In the case of the water companies, my 6.30 percent estimate falls between Zacks' average long-term EPS projection of 9.15 percent and Value Line's growth projection of 5.94 percent (which is an average of EPS, DPS and BVPS). My 6.30 percent estimate is also 86 basis points higher than the 5.44 percent average of Value Line's historical and projected data and the consensus opinions published by Zacks. Furthermore, my 6.30 percent estimate is 54 basis points higher than the Value Line 5-year compound historical average also displayed in Schedule WAR-6. The estimates of analysts at both Value Line and Zacks indicate that investors are expecting increased performance from water utilities in the future. On balance, I would say my 6.30 percent estimate is a good representation of the growth projections that are available to the investing public.

Q. How do your average dividend growth rate estimates on natural gas LDC's compare to the growth rate data published by Value Line and other analysts?

A. In regard to the natural gas LDC's, my 5.97 percent estimate also falls between the average 6.94 percent long-term consensus projections published by Zacks, and the 4.70 percent Value Line projected estimate (which is an average of EPS, DPS and BVPS). As can also be seen on Schedule WAR-6, the 5.97 percent estimate that I have calculated is 41 basis points higher than the 5.56 percent average of the 5-year historic EPS, DPS and BVPS means of Value Line and 23 basis points higher than the 5.74 percent five-year compound historical average of Value Line data (on EPS, DPS and BVPS). In fact, my 5.97 percent estimate is 55 basis points higher than the combined 5.42 percent Value Line and Zacks averages displayed in Schedule WAR-6. As with the water companies, the estimates of both Value Line's and Zacks' analysts indicate that investors are expecting increased performance from natural gas distribution companies in the future. In the case of the LDC's I would say that my 5.97 percent estimate, which is lower than Zack's projections but higher than Value Line's forecasts, is a fair representation of the growth projections presented by securities analysts at this point in time.

...

Q. How did you calculate the dividend yields displayed in Schedule WAR-3?

A. For both the water companies and the natural gas LDC's I used the estimated annual dividends, for the next twelve-month period, that appeared in Value Line's July 25, 2008 Ratings and Reports water services industry update and Value Line's September 12, 2008 Ratings and Reports natural gas utility update. I then divided those figures by the eight-week average price per share of the appropriate utility's common stock. The eight-week average price is based on the daily closing stock prices for each of the companies in my proxies for the period July 21, 2008 to September 12, 2008.

Q. Based on the results of your DCF analysis, what is your cost of equity capital estimate for the water and natural gas utilities included in your sample?

A. As shown in Schedule WAR-2, the cost of equity capital derived from my DCF analysis is 9.00 percent for the water utilities and 9.79 percent for the natural gas LDC's.

Capital Asset Pricing Model (CAPM) Method

Q. Please explain the theory behind CAPM and why you decided to use it as an equity capital valuation method in this proceeding.

A. CAPM is a mathematical tool that was developed during the early 1960's by William F. Sharpe[9], the Timken Professor Emeritus of Finance at Stanford University, who shared the 1990 Nobel Prize in Economics for research that eventually resulted in the CAPM model. CAPM is used to analyze the relationships between rates of return on various assets and risk as measured by beta.[10] In this regard, CAPM can help an investor to determine how much risk is associated with a given investment so that he or she can decide if that investment meets their individual preferences. Finance theory has always held that as the risk associated with a given investment increases, so should the expected rate of return on that investment and vice versa. According to CAPM theory, risk can be classified into two specific forms: nonsystematic or diversifiable risk, and systematic or non-diversifiable risk. While nonsystematic risk can be virtually eliminated through diversification (i.e. by including stocks of various companies in various industries in a portfolio of securities), systematic risk, on the other hand, cannot be eliminated by diversification.

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[9] William F. Sharpe, "A Simplified Model of Portfolio Analysis," Management Science, Vol. 9, No. 2 (January 1963), pp. 277-93.

[10] Beta is defined as an index of volatility, or risk, in the return of an asset relative to the return of a market portfolio of assets. It is a measure of systematic or non-diversifiable risk. The returns on a stock with a beta of 1.0 will mirror the returns of the overall stock market. The returns on stocks with betas greater than 1.0 are more volatile or riskier than those of the overall stock market; and if a stock's beta is less than 1.0, its returns are less volatile or riskier than the overall stock market.

Thus, systematic risk is the only risk of importance to investors. Simply stated, the underlying theory behind CAPM states that the expected return on a given investment is the sum of a risk-free rate of return plus a market risk premium that is proportional to the systematic (non-diversifiable risk) associated with that investment. In mathematical terms, the formula is as follows:

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

where:

k	=	the expected return of a given security,
r_f	=	risk-free rate of return,
$ß$	=	beta coefficient, a statistical measurement of a security's systematic risk,
r_m	=	average market return (e.g. S&P 500), and
$r_m - r_f$	=	market risk premium.

Q. What types of financial instruments are generally used as a proxy for the risk-free rate of return in the CAPM model?

A. Generally speaking, the yields of U.S. Treasury instruments are used by analysts as a proxy for the risk-free rate of return component.

...

Q. Please explain why U.S. Treasury instruments are regarded as a suitable proxy for the risk-free rate of return?

A. As citizens and investors, we would like to believe that U.S. Treasury securities (which are backed by the full faith and credit of the United States Government) pose no threat of default no matter what their maturity dates are. However, a comparison of various Treasury instruments will reveal that those with longer maturity dates do have slightly higher yields. Treasury yields are comprised of two separate components,[11] a true rate of interest (believed to be approximately 2.00 percent) and an inflationary expectation. When the true rate of interest is subtracted from the total treasury yield, all that remains is the inflationary expectation. Because increased inflation represents a potential capital loss, or risk, to investors, a higher inflationary expectation by itself represents a degree of risk to an investor. Another way of looking at this is from an opportunity cost standpoint. When an investor locks up funds in long-term T-Bonds, compensation must be provided for future investment opportunities foregone. This is often described as maturity or interest rate risk and it can affect an investor adversely if market rates increase before the instrument matures (a rise in interest rates would decrease the value of the debt instrument). As discussed earlier in the DCF portion of my

[11] As a general rule of thumb, there are three components that make up a given interest rate or rate of return on a security: the true rate of interest, an inflationary expectation, and a risk premium. The approximate risk premium of a given security can be determined by simply subtracting a 91-day T-Bill rate from the yield on the security.

testimony, this compensation translates into higher rates of returns to the investor.

Q. What security did you use for a risk-free rate of return in your CAPM analysis?

A. I used the most recent yield on a 5-year U.S. Treasury instrument which was published in Value Line's September 12, 2008 Selection and Opinion publication. (Attachment E). This resulted in a risk-free (r_f) rate of return of 2.95 percent.

Q. Why did you use the yield on a 5-year year U.S. Treasury instrument as opposed to a short-term T-Bill?

A. While a shorter term instrument, such as a 91-day T-Bill, presents the lowest possible total risk to an investor, a good argument can be made that the yield on an instrument that matches the investment period of the asset being analyzed in the CAPM model should be used as the risk-free rate of return. Since utilities in Arizona generally file for rates every three to five years, the yield on a 5-year U.S. Treasury Instrument closely matches the investment period or, in the case of regulated utilities, the period that new rates will be in effect.

...

Q. How did you calculate the market risk premium used in your CAPM analysis?

A. I used both a geometric and an arithmetic mean of the historical returns on the S&P 500 index from 1926 to 2007 as the proxy for the market rate of return (r_m). For the risk-free portion of the risk premium component (r_f), I used the geometric mean of the yields of long-term government bonds for the same eighty-one year period. The risk premium (r_m - r_f) that results by using these inputs is 4.90 percent (10.40% - 5.50% = 4.90%). The risk premium that results by using the arithmetic mean calculation is 6.50 percent (12.30% - 5.80% = 6.50%).

Q. How did you select the beta coefficients that were used in your CAPM analysis?

A. The beta coefficients (ß), for the individual utilities used in both my proxies, were calculated by Value Line and were current as of July 25, 2008 for the water companies and September 12, 2008 for the natural gas LDC's. Value Line calculates its betas by using a regression analysis between weekly percentage changes in the market price of the security being analyzed and weekly percentage changes in the NYSE Composite Index over a five-year period. The betas are then adjusted by Value Line for their long-term tendency to converge toward 1.00. The beta coefficients for the service providers included in my water company sample ranged from 0.95 to 1.15 with an average beta of 1.05. The beta

coefficients for the LDC's included in my natural gas sample ranged from 0.75 to 0.90 with an average beta of 0.82.

Q. What are the results of your CAPM analysis?

A. As shown on pages 1 and 2 of Schedule WAR-7, my CAPM calculation using a geometric mean to calculate the risk premium results in an average expected return of 8.10 percent for the water companies and 6.94 percent for the natural gas LDC's. My calculation using an arithmetic mean results in an average expected return of 9.78 percent for the water companies and 8.25 percent for the natural gas LDC's.

Q. Please summarize the results derived under each of the methodologies presented in your testimony.

A. The following is a summary of the cost of equity capital derived under each methodology used:

METHOD	RESULTS
DCF (Water Sample)	9.00%
DCF (Natural Gas Sample)	9.79%
CAPM (Water Sample)	8.10% – 9.78%
CAPM (Natural Gas)	6.94% – 8.25%

Based on these results, my best estimate of an appropriate range for an OCRB cost of common equity for Chaparral is 6.94 percent to 9.79

percent. My estimate for an OCRB cost of common equity is 8.83 percent. My final recommended FVRB cost of common equity figure is 6.83 percent.

Q How did you arrive at your final recommended 6.83 percent FVRB cost of common equity?

A. My recommended 6.83 percent FVRB cost of common equity is the 8.83 percent average of my DCF and CAPM results, less an inflation factor of 200 basis points. The calculation for my 6.83 percent FVRB cost of common equity can be seen on Schedule WAR-1, Page 4 of 5.

Q. Why have you made a 200 basis point inflation factor adjustment to the OCRB results of your DCF analysis?

A. The 200 basis point adjustment removes an inflation expectation that is embedded in the OCRB cost of common equity. The method that I have used to derive my 6.83 percent FVRB cost of common equity is consistent with the method that was adopted by the Commission to arrive at a FVRB cost of common equity for Chaparral in Decision No. 70441 ("Remand Proceeding"). During the Remand Proceeding, the Commission was required to develop an appropriate rate of return on Chaparral's FVRB under a remand order from the Arizona Court of Appeals. In doing so, the Commission adopted a methodology that was proposed by Ben Johnson,

Ph.D., an expert witness who testified on behalf of RUCO on the FVRB rate of return issue that was central to that proceeding[12].

Q. How did you calculate your 200 basis point inflation adjustment?

A. I relied on the same data sets of information that Dr. Johnson used to develop a similar inflation factor adjustment during the Remand Proceeding (Schedule WAR-1, Page 5 of 5). Since there was virtually no change in the data – which compared Treasury Inflation-Protected Securities ("TIPS") and U.S. Treasury bonds with similar liquidity and maturity characteristics – that Dr. Johnson relied on, I used the same low-end 200 basis point adjustment that he estimated.

Q. Can you briefly explain why it is necessary to make an inflation factor adjustment to an OCRB cost of common equity?

A. Yes. Unless a utility elects to forego a reconstruction cost new less depreciation ("RCND") study to develop an RCND rate base, and agrees to use its OCRB as its FVRB, the utility's FVRB is calculated by averaging its OCRB and its RCND rate base. Because an RCND study restates an OCRB in current dollars (through the use of engineering indexes that

[12] On September 30, 2005, the Commission issued Decision No. 68176 which granted a permanent rate increase to Chaparral. Following the Commission's decision on the matter, the Company filed an application for rehearing which the Commission took no action on. Chaparral subsequently filed an appeal with the Arizona Court of Appeals, Division One ("Court of Appeals"). The Company's appeal claimed that Chaparral was denied a fair rate of return on its invested capital as a result of the Commission's established method of calculating a level of operating income based on the Company's fair value rate base ("FVRB"). On February 13, 2007, the Court of Appeals issued a Memorandum Decision which affirmed in part, vacated, and remanded Decision No. 68176 to the Commission for further determination.

contain certain inflation factors to calculate an RCND rate base), it is inappropriate to apply an OCRB rate of return to a FVRB. This is because the OCRB rate of return, like the FVRB, contains an inflation component in it. Consequently, the application of an OCRB rate of return to a FVRB (calculated using an average of an OCRB and an RCND rate base) produces an inappropriate level of operating income which reflects an over-counting of the effects of inflation. To remedy this situation, the OCRB rate of return is adjusted downward by removing the inflation expectation that is embedded in it. This is the same rationale that the Commission relied on in Decision No. 70441.

Q. Can you offer any "real world" examples of how inflation is factored into the prices of stocks that would be used to arrive at an OCRB cost of common equity using the DCF model?

A. Yes. But before I do that it is important to understand the concept that the current price of a share of a given firm's stock reflects all known and available information on the given firm at any point in time. In the study of finance this concept is known as the efficient market hypothesis. If the efficient market hypothesis is correct – and many academics believe that it is in several different forms – then everyday events, including news on inflation, are weighed by the investment community and are factored into the value of a given firm's stock. Now getting back to the "real world" examples addressed in the question, Attachment F to my testimony

contains copies of various articles published in the mainstream press, over the past three years, which report on how investors have reacted to news on inflation and other economic events. I believe that these articles point out the fact that investors clearly do react to news of inflation and that expectations of future inflation are reflected in the price of stocks.

Q. Did you make any adjustments to your OCRB cost of common equity that took into consideration the higher level of equity contained in Chaparral's capital structure?

A. No, I did not. Even though a strong argument (such as the one I presented in a rehearing on Gold Canyon Sewer Company[13]) can be made to recommend a hypothetical capital structure that puts the Company's capital structure in line with the capital structures of the utilities included in my sample, I have not done so in this case.

Q. How does your recommended cost of equity capital compare with the cost of equity capital proposed by the Company?

A. The 10.50 percent cost of equity capital proposed by the Company is 167 basis points higher than the 8.83 percent OCRB cost of equity capital that I am recommending.

[13] Docket No. SW-02519A-06-0015

Q. Does the Company-proposed cost of common equity include an inflation factor adjustment similar to the one that you are recommending?

A. No. However, Mr. Bourassa's testimony in this case was filed prior to Decision No. 70441

Current Economic Environment

Q. Please explain why it is necessary to consider the current economic environment when performing a cost of equity capital analysis for a regulated utility.

A. Consideration of the economic environment is necessary because trends in interest rates, present and projected levels of inflation, and the overall state of the U.S. economy determine the rates of return that investors earn on their invested funds. Each of these factors represent potential risks that must be weighed when estimating the cost of equity capital for a regulated utility and are, most often, the same factors considered by individuals who are also investing in non-regulated entities.

Q. Please discuss your analysis of the current economic environment.

A. My analysis includes a brief review of the economic events that have occurred since 1990. Schedule WAR-8 displays various economic indicators and other data that I will refer to during this portion of my testimony.

In 1991, as measured by the most recently revised annual change in gross domestic product ("GDP"), the U.S. economy experienced a rate of growth of negative 0.20 percent. This decline in GDP marked the beginning of a mild recession that ended sometime before the end of the first half of 1992. Reacting to this situation, the Federal Reserve Board ("Federal Reserve" or "Fed"), then chaired by noted economist Alan Greenspan, lowered its benchmark federal funds rate[14] in an effort to further loosen monetary constraints - an action that resulted in lower interest rates.

During this same period, the nation's major money center banks followed the Federal Reserve's lead and began lowering their interest rates as well. By the end of the fourth quarter of 1993, the prime rate (the rate charged by banks to their best customers) had dropped to 6.00 percent from a 1990 level of 10.01 percent. In addition, the Federal Reserve's discount rate on loans to its member banks had fallen to 3.00 percent and short-term interest rates had declined to levels that had not been seen since 1972.

Although GDP increased in 1992 and 1993, the Federal Reserve took steps to increase interest rates beginning in February of 1994, in order to

[14] This is the interest rate charged by banks with excess reserves at a Federal Reserve district bank to banks needing overnight loans to meet reserve requirements. The federal funds rate is the most sensitive indicator of the direction of interest rates, since it is set daily by the market, unlike the prime rate and the discount rate, which are periodically changed by banks and by the Federal Reserve Board, respectively.

keep inflation under control. By the end of 1995, the Federal discount rate had risen to 5.21 percent. Once again, the banking community followed the Federal Reserve's moves. The Fed's strategy, during this period, was to engineer a "soft landing." That is to say that the Federal Reserve wanted to foster a situation in which economic growth would be stabilized without incurring either a prolonged recession or runaway inflation.

Q. Did the Federal Reserve achieve its goals during this period?

A. Yes. The Fed's strategy of decreasing interest rates to stimulate the economy worked. The annual change in GDP began an upward trend in 1992. A change of 4.50 percent and 4.20 percent were recorded at the end of 1997 and 1998 respectively. Based on daily reports that were presented in the mainstream print and broadcast media during most of 1999, there appeared to be little doubt among both economists and the public at large that the U.S. was experiencing a period of robust economic growth highlighted by low rates of unemployment and inflation. Investors, who believed that technology stocks and Internet company start-ups (with little or no history of earnings) had high growth potential, purchased these types of issues with enthusiasm. These types of investors, who exhibited what former Chairman Greenspan described as "irrational exuberance," pushed stock prices and market indexes to all time highs from 1997 to 2000.

Q. What has been the state of the economy since 2001?

A. The U.S. economy entered into a recession near the end of the first quarter of 2001. The bullish trend, which had characterized the last half of the 1990's, had already run its course sometime during the third quarter of 2000. Economic data released since the beginning of 2001 had already been disappointing during the months preceding the September 11, 2001 terrorist attacks on the World Trade Center and the Pentagon. Slower growth figures, rising layoffs in the high technology manufacturing sector, and falling equity prices (due to lower earnings expectations) prompted the Fed to begin cutting interest rates as it had done in the early 1990's. The now infamous terrorist attacks on New York City and Washington D.C. marked a defining point in this economic slump and prompted the Federal Reserve to continue its rate cutting actions through December 2001. Prior to the 9/11 attacks, commentators, reporting in both the mainstream financial press and various economic publications including Value Line, believed that the Federal Reserve was cutting rates in the hope of avoiding a recession.

Despite several intervals during 2002 and 2003 in which the Federal Open Market Committee ("FOMC") decided not to change interest rates – moves which indicated that the worst may be over and that the recession might have bottomed out during the last quarter of 2001 – a lackluster economy persisted. The continuing economic malaise and even fears of possible

deflation prompted the FOMC to make a thirteenth rate cut on June 25, 2003. The quarter point cut reduced the federal funds rate to 1.00 percent, the lowest level in forty-five years.

Even though some signs of economic strength, mainly attributed to consumer spending, began to crop up during the latter part of 2002 and into 2003, Chairman Greenspan appeared to be concerned with sharp declines in capital spending in the business sector.

During the latter part of 2003, the FOMC went on record as saying that it intended to leave interest rates low "for a considerable period." After its two-day meeting that ended on January 28, 2004, the FOMC announced "that with inflation 'quite low' and plenty of excess capacity in the economy, policy-makers 'can be patient in removing its policy accommodation.[15]"

Q. What actions has the Federal Reserve taken in terms of interest rates since the beginning of 2001?

A. As noted earlier, from January 2001 to June 2003 the Federal Reserve cut interest rates a total of thirteen times. During this period, the federal funds rate fell from 6.50 percent to 1.00 percent. The FOMC reversed this trend on June 29, 2004 and raised the federal funds rate 25 basis points to 1.25

[15] Wolk, Martin, "Fed holds interest rates steady," MSNBC, January 28, 2004.

percent. From June 29, 2004 to January 31, 2006, the FOMC raised the federal funds rate thirteen more times to a level of 4.50 percent.

The FOMC's January 31, 2006 meeting marked the final appearance of Alan Greenspan, who had presided over the rate setting body for a total of eighteen years. On that same day, Greenspan's successor, Ben Bernanke, the former chairman of the President's Council of Economic Advisers and a former Fed governor under Greenspan from 2002 to 2005, was confirmed by the U.S. Senate to be the new Federal Reserve chief.

As expected by Fed watchers, Chairman Bernanke picked up where his predecessor left off and increased the federal funds rate by 25 basis points during each of the next three FOMC meetings for a total of seventeen consecutive rate increases since June 2004, and raising the federal funds rate to a level of 5.25 percent. The Fed's rate increase campaign finally came to a halt at the FOMC meeting held on August 8, 2006, when the FOMC decided not to raise rates.

Q. What was the reaction in the financial community to the Fed's decision not to raise interest rates?

A. As in the past, banks followed the Fed's lead once again and held the prime rate to a level of 8.25 percent, or 300 basis points higher than the federal funds rate of 5.25 percent established on June 29, 2006.

Q. How did analysts view the Fed's actions between January 2001 and August 2006?

A. According to an article that appeared in the December 2, 2004 edition of The Wall Street Journal, the FOMC's decision to begin raising rates two years ago was viewed as a move to increase rates from emergency lows in order to avoid creating an inflation problem in the future as opposed to slowing down the strengthening economy.[16] In other words, the Fed was trying to head off inflation *before* it became a problem. During the period following the August 8, 2006 FOMC meeting, the Fed's decisions not to raise rates were viewed as a gamble that a slower U.S. economy would help to cap growing inflationary pressures.[17]

Q. Was the Fed attempting to engineer another "soft landing", as it did in the mid-nineties, by holding interest rates steady?

A. Yes, however, as pointed out in an August 2006 article in The Wall Street Journal by E.S. Browning, soft landings – like the one that the Fed managed to pull off during the 1994-95 time frame, in which a recession or a bear market were avoided – rarely happen[18]. Since it began increasing the federal funds rate in June 2004, the Fed had assured investors that it

[16] McKinnon, John D. and Greg IP, "Fed Raises Rates by a Quarter Point," The Wall Street Journal, September 22, 2004.

[17] Ip, Greg, "Fed Holds Interest Rates Steady As Slowdown Outweighs Inflation," The Wall Street Journal Online Edition, August 8, 2006.

[18] Browning, E.S, "Not Too Fast, Not Too Slow...," The Wall Street Journal Online Edition, August 21, 2006.

would increase rates at a "measured" pace. Many analysts and economists interpreted this language to mean that former Chairman Greenspan would be cautious in increasing interest rates too quickly in order to avoid what is considered to be one of the Fed's few blunders during Greenspan's tenure – a series of increases in 1994 that caught the financial markets by surprise after a long period of low rates. The rapid rise in rates contributed to the bankruptcy of Orange County, California and the Mexican peso crisis[19]. According to Mr. Browning, at the time that his article was published, the hope was that Chairman Bernanke would succeed in slowing the economy "just enough to prevent serious inflation, but not enough to choke off growth." In other words, "a 'Goldilocks economy,' in which growth is not too hot and not too cold."

Q. Was the Fed's attempt to engineer a soft landing successful during the period that followed the August 8, 2006 FOMC meeting?

A. It would appear so. Articles published in the mainstream financial press were generally upbeat on the economy during that period. An example of this is an article written by Nell Henderson that appeared in the January 30, 2007 edition of The Washington Post. According to Ms. Henderson, "a year into [Fed Chairman] Bernanke's tenure, the [economic] picture has turned considerably brighter. Inflation is falling; unemployment is low;

[19] Associated Press (AP), "Fed begins debating interest rates" USA Today, June 29, 2004.

wages are rising; and the economy, despite continued problems in housing, is growing at a brisk clip."[20]

Q. What has been the state of the economy over the past year?

A. Reports in the mainstream financial press during the majority of 2007 reflected the view that the U.S. economy was slowing as a result of a worsening situation in the housing market and higher oil prices. The overall outlook for the economy was one of only moderate growth at best. Also during this period the Fed's key measure of inflation began to exceed the rate setting body's comfort level.

On August 7, 2007, the FOMC decided not to increase or decrease the federal funds rate for the ninth straight time and left its target rate unchanged at 5.25 percent.[21] At the time of the Fed's decision, analysts speculated that a rate cut over the next several months was unlikely given the Fed's concern that inflation would fail to moderate. However, during this same period, evidence of an even slower economy and a possible recession was beginning to surface. Within days of the Fed's decision to stand pat on rates, a borrowing crises rooted in a deterioration of the market for subprime mortgages and securities linked to them, forced the Fed to inject $24 billion in funds (raised through open market operations)

[20] Henderson, Nell, "Bullish on Bernanke" The Washington Post, January 30, 2007.

[21] Ip, Greg, "Markets Gyrate As Fed Straddles Inflation, Growth" The Wall Street Journal, August 8, 2007

into the credit markets.[22] By Friday, August 17, 2007, after a turbulent week on Wall Street, the Fed made the decision to lower its discount rate (i.e. the rate charged on direct loans to banks) by 50 basis points, from 6.25 percent to 5.75 percent, and took steps to encourage banks to borrow from the Fed's discount window in order to provide liquidity to lenders. According to an article that appeared in the August 18, 2007 edition of The Wall Street Journal, [23] the Fed had used all of its tools to restore normalcy to the financial markets. If the markets failed to settle down, the Fed's only weapon left was to cut the Federal Funds rate – possibly before the next FOMC meeting scheduled on September 18, 2007.

Q. Did the Fed cut rates as a result of the subprime mortgage borrowing crises?

A. Yes. At its regularly scheduled meeting on September 18, 2007, the FOMC surprised the investment community and cut both the federal funds rate and the discount rate by 50 basis points (25 basis points more than what was anticipated). This brought the federal funds rate down to a level of 4.75 percent. The Fed's action was seen as an effort to curb the aforementioned slowdown in the economy. Over the course of the next four months, the FOMC reduced the Federal funds rate by a total 175

[22] Ip, Greg, "Fed Enters Market To Tamp Down Rate" The Wall Street Journal, August 9, 2007

[23] Ip, Greg, Robin Sidel and Randall Smith, "Fed Offers Banks Loans Amid Crises" The Wall Street Journal, August 9, 2007

basis points to a level of 3.00 percent – mainly as a result of concerns that the economy was slipping into a recession. This included a 75 basis point reduction that occurred one week prior to the FOMC's meeting on January 29, 2008.

Q. What recent actions have the Fed taken in regard to interest rates?

A. The Fed made two more rate cuts which included a 75 basis point reduction in the federal funds rate on March 18, 2008 and an additional 25 basis point reduction on April 30, 2008. The Fed's decision to cut rates was based on its belief that the slowing economy is a greater concern than the current rate of inflation (which the majority of FOMC members believed will moderate during the present economic slowdown).[24] As a result of the Fed's actions, the federal funds rate was reduced to its present level of 2.00 percent. At the time of this writing, the fed elected to leave the fed funds rate unchanged during the last three FOMC meetings. After the September 16, 2008 meeting, prior to which the investment community expected another rate cut, the Fed stated the following:

> Strains in financial markets have increased significantly and labor markets have weakened further. Economic growth appears to have slowed recently, partly reflecting a softening of household spending. Tight credit conditions, the ongoing housing contraction, and some slowing in export growth are likely to weigh on economic growth over the next few quarters. Over time, the substantial easing of monetary policy, combined with ongoing measures to foster market liquidity, should help to promote moderate economic growth.
>
> Inflation has been high, spurred by the earlier increases in the prices of energy and some other commodities. The Committee expects inflation to

[24] Ip, Greg, "Credit Worries Ease as Fed Cuts, Hints at More Relief" The Wall Street Journal, March 19, 2008

> moderate later this year and next year, but the inflation outlook remains highly uncertain.
>
> The downside risks to growth and the upside risks to inflation are both of significant concern to the Committee. The Committee will monitor economic and financial developments carefully and will act as needed to promote sustainable economic growth and price stability.

The statement above was released during another week of turmoil in the financial markets as the subprime mortgage crises, noted earlier, had come to a head. The days before and after the Fed's September 16, 2008 meeting saw longstanding Wall Street firms such as Lehman Brothers, Merrill Lynch and AIG failing as a result of their subprime holdings. By the end of the week, the Bush administration announced plans to deal with the crises, which include a U.S. Treasury request to Congress for $700 billion to buy distressed assets as part of a plan to halt what has been described as the worst financial crisis since the 1930's[25].

Q. Putting this all into perspective, how have the Fed's actions since 2000 affected benchmark rates?

A. Despite the increases (prior to June 2006) by the FOMC, interest rates and yields on U.S. Treasury instruments are for the most part still at historically low levels. The Fed's actions have also had the overall effect of reducing the cost of many types of business and consumer loans. As can be seen in Schedule WAR-8, the previously mentioned federal

[25] Soloman, Deborah, Michael R. Crittenden and Damian Paletta, "U.S. Bailout Plan Calms Markets, But Struggle Looms Over Details" The Wall Street Journal, September 20, 2008

discount rate (the rate charged to the Fed's member banks), has fallen to 2.00 percent from 5.73 percent in 2000.

Q. What has been the trend in other leading interest rates over the last year?

A. As of September 9, 2008, the leading interest rates have all dropped from the levels that existed a year ago (Attachment E). The prime rate has fallen from 8.25 percent a year ago to 5.00 percent. The benchmark federal funds rate, just discussed, has decreased from 5.25 percent, in September 2007, to a level of 2.00 percent (as a result of the April 30, rate cut discussed above). The yields on several maturities of U.S. Treasury instruments have also decreased over the past year. A previous trend, described by former Chairman Greenspan as a "conundrum"[26], in which long-term rates fell as short-term rates increased, thus creating a somewhat inverted yield curve that existed as late as June 2007, appears to have ended and a more traditional yield curve (one where yields increase as maturity dates lengthen) presently exists (Attachment E). The 5-year Treasury yield, used in my CAPM analysis, has fallen from 4.16 percent, in September 2007, to 2.95 percent as of September 9, 2008. The 1-Year Treasury constant maturity rate also decreased from 4.39 percent over the past year to 2.07 percent. Again, for the most part, these current yields are considerably lower than corresponding yields that

[26] Wolk, Martin, "Greenspan wrestling with rate 'conundrum'," MSNBC, June 8, 2005.

existed during the early nineties and at the beginning of the current decade (as can be seen on Schedule WAR-8).

Q. What is the current outlook for interest rates, inflation, and the economy?

A. As a result of the FOMC's April 30, 2008 rate cutting action, the federal funds rate of 2.00 percent is already below The Wall Street Journal's February 2008 Economic Forecasting Survey's prediction that the rate would drop to 2.64 percent by December 2008. The change in the consumer price index, a key measure of inflation, is also expected to fall from the December 2007 level of 4.10 percent to 2.30 percent by December 2008.

Value Line's analysts have been decidedly pessimistic in their outlook on the economy as of late and had this to say in their Economic and Stock Market Commentary that appeared in the September 12, 2008 edition of Value Line's Selection and Opinion publication:

> **Business growth is slowing and the economy could be contracting by the final quarter.** That more dour assessment reflects the fact that recent weeks have seen a flattening in manufacturing activity, a drop in personal income, and additional bad news on the housing front. True, U.S. exports should again be supportive, while falling energy prices should help to support consumer spending. Such crosscurrents suggest that the current quarter will see GDP rise anew, but that the prospective gain may be less than half what it was in the second-quarter. Moreover, in the absence of a new stimulus package, it is quite possible that a weakening housing market could turn GDP a bit lower by the final period.

Value Line's analysts went on to state:

> **The road back for the economy is likely to be slow and uneven.** At best, any decline in GDP engendered by increasing jobless claims, falling home prices, tightening credit, and high food and heating oil costs will be limited to only one quarter. More likely, the late-2008 problems in the economy will carry over to 2009, bringing on the nation's first

> recession since 2001. For now, we think such a downturn will be brief and fairly mild. However, the ensuing recovery is likely to be a checkered affair in the absence of stronger-than-forecast recoveries in consumer expenditures and housing later next year.

Q. How has the current economic environment of lower interest rates affected various regulated utility industries as a whole?

A. Value Line analyst Nils C. Van Liew took note of the environment of low interest rates that existed in the early part of 2007. In Value Line's Electric Utility (East) Industry update dated March 2, 2007, Mr. Van Liew had this to say:

> **Low Interest Rates.** Several factors are, no doubt, driving the electric utilities' strong share-price performance. Perhaps most important is a benign interest-rate environment. Utilities frequently tap the credit markets to fund their operations. (Low interest rates mean they can cost effectively build new power plants and maintain existing ones.) "Cheap money" also tends to drive economic expansion, thereby increasing electricity demand. That said, interest rates should remain relatively low, though the likelihood that the Federal Reserve eases (monetary) policy is small, given persistent inflation concerns.

While Mr. Van Liew's views appeared in Value Line's Electric Utility Industry update, I believe his comments hold true for all regulated utilities including the water and natural gas distribution segments. Given the fact that interest rates are even lower now than they were at the time of Mr. Van Liew's writing, and utility bond rates are currently lower than their 2007 averages (Schedule WAR 8), I believe that his views are still valid. In fact, my opinions are supported by Gabe Moreen, an analyst for Merrill Lynch, who had this to say in his February 21, 2008 report[27] on SWX:

[27] Provided in the Company's response to ACC Staff data request STF-2-8 dated March 6, 2008.

> **Falling interest rates bode well for utilities** The Fed's recent interest rate cuts buoyed our natural gas utility index stocks, which had *underperformed* during recent credit market turmoil. The liquidity squeeze elevated concerns over higher capital costs for this capital-intensive industry, but credit market concerns do not fundamentally threaten the sector, in our view. Most gas utilities in our index have investment grade credit and, were the cost of debt to rise, could recover higher capital costs via rate cases. The interest rate cut also boosted gas utility stocks as 10-year Treasury prices rose and yields fell. 10-year Treasury yields provide a common benchmark for utility valuation; like Treasury bills, utility stocks typically offer steady income and are often valued by yield differential above Treasury bills. The dividend yield-Treasury yield differential has recently shrunk to 85 [basis points], just shy of the long-term average 86 [basis point] differential. Treasury yields are relatively low at 3.9%, and we expect this low differential to help sustain gas utility stocks at their high valuations in the near term. For Merrill Lynch's current interest rate outlook, please see The Market Economist. 15 February 2008.

Q. Has the subprime mortgage crises had an impact on borrowing?

A. Yes. The situation has had a strong impact on liquidity for both banks and the capital markets. Hopefully the anticipated actions of both the U.S. Treasury and the Fed, now before an attentive Congress, will succeed in eliminating the logjam that presently exists and restore the credit markets to their pre-subprime status.

Q. How does the average dividend yield of your sample water and LDC stocks compare to the average dividend yield for all of the water and LDC stocks followed by Value Line?

A. As can be seen in Schedule WAR-3, my sample water companies and LDC's have average dividend yields of 2.70 and 3.83 percent respectively. These yields exceed, for water, and fall between, for LDC's, Value Line's 2.60 percent and 3.60 percent 2007 average dividend yields for the water and natural gas industries respectively and Value Lines 2011-13 yield

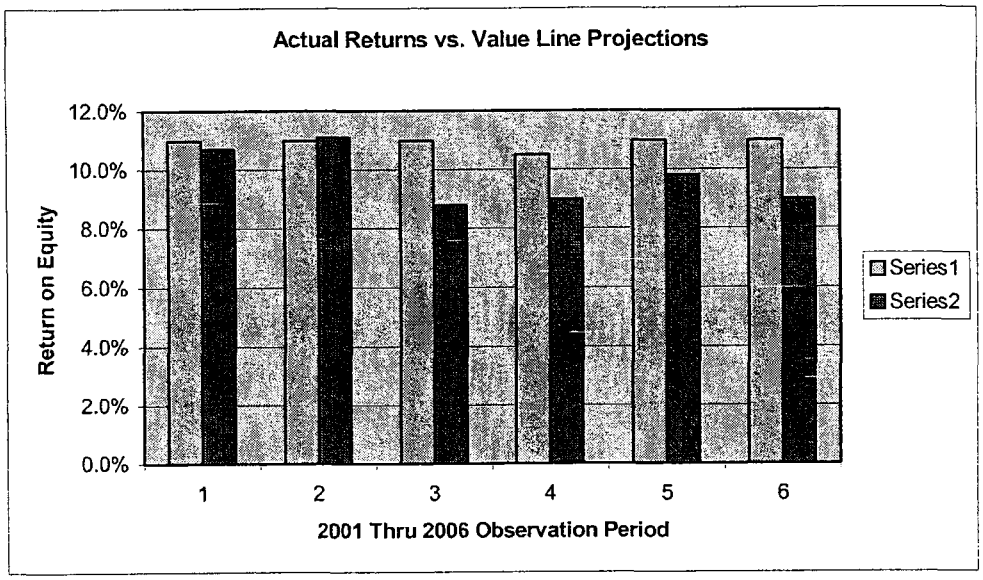
projections of 2.30 and 4.60 percent for the water and natural gas industries respectively (Attachments A and B).

Q. How do the dividend yields of the water and LDC stocks in your sample compare with other stocks followed by Value Line?

A. Based on information contained in Value Line's September 12, 2008 Summary & Index publication, the median of estimated dividend yields of all dividend paying stocks under review by Value Line was 2.20 percent. The yields of my sample water and LDC stocks exceeded this figure by 50 basis points and 163 basis points, respectively.

Q. What has been the trend in Value Line's return on common equity projections for the water utility industry over the last seven years?

A. Up until 2005, and with the exception of 2003, Value Line's analysts have been making downward projections on water industry book returns on common equity ("ROE"). In addition to the downward trend in projections that I just addressed (exhibited in Attachment D), Value Line's analysts have been somewhat more optimistic in their forward-looking one-year and long-term projections. As can be seen in the chart below, Value Line's analysts have been somewhat high in their coming year projections on ROE.



The bar chart above illustrates Value Line's water utility industry projections on ROE (the lighter bar identified as series 1), over the 2001 to 2006 period, versus the actual returns (the darker bar identified as series 2) that actually occurred during that same time frame (observation periods 1 through 6). The actual basis point spreads between the Value Line projections and the actual returns on ROE are as follows:

Year	Value Line Projected	Actual Book Return on ROE	Difference
2001	11.0%	10.7%	-30 Basis Points
2002	11.0%	11.1%	+10 Basis Points
2003	10.5%	8.8%	-170 Basis Points
2004	11.0%	9.0%	-200 Basis Points
2005	11.0%	9.8%	-120 Basis Points
2006	11.0%	9.0%	-200 Basis Points

As can be seen above, with the exception of the 2002 operating period, Value Line's analyst's projections on water utility ROE's from one year out were 30 to 200 basis points higher than the actual returns booked by the water utilities. This is why I rarely rely on projections at face value, and

only use Value Line's and Zacks' analyst's projections as guides in developing my growth estimates for the DCF model.

Q. After weighing the economic information that you've just discussed, do you believe that the 6.83 percent FVRB cost of equity capital that you have estimated is reasonable for Chaparral?

A. I believe that my recommended 6.83 percent FVRB cost of equity will provide Chaparral with a reasonable rate of return on the Company's invested capital when economic data on interest rates (that are low by historical standards), the Federal Government's resolution of the subprime mortgage crises (and related housing slowdown), and the Fed's ability to keep inflation in check are all taken into consideration. As I noted earlier, the Hope decision determined that a utility is entitled to earn a rate of return that is commensurate with the returns it would make on other investments with comparable risk. I believe that my cost of equity analysis, which is an average of the results of both the DCF and CAPM models less a 200 basis point inflation factor adjustment, has produced such a return.

COST OF DEBT

Q. Have you reviewed Chaparral's testimony on the Company-proposed costs of short-term and long-term debt?

A. Yes.

Q. Briefly explain how Chaparral calculated the Company-proposed cost of short-term debt.

A. The Company-proposed 6.11 percent cost of short-term debt (which is an inter-company borrowing arrangement between Chaparral and its parent American States) is the one year LIBOR[28] rate that existed at the time of the Company's rate application filing.

Q. Have you accepted the Company-proposed cost of short-term debt?

A. No. I have updated Chaparral's cost of short-term debt to 3.13 percent to reflect the one year LIBOR rate published in the September 12, 2008 edition of The Wall Street Journal.

...

[28] The London Interbank Offered Rate or LIBOR is an interest rate that banks charge each other for loans (usually in Eurodollars). The rate is applicable to the short-term international interbank market, and applies to very large loans borrowed for anywhere from one day to five years. This market allows banks with liquidity requirements to borrow quickly from other banks with surpluses, enabling banks to avoid holding excessively large amounts of their asset base as liquid assets. The LIBOR is officially fixed once a day by a small group of large London banks, but the rate changes throughout the day. (Source: InvestorWords.com)

Q. How did Chaparral calculate the Company-proposed cost of long-term debt?

A. The Company-proposed 5.34 percent cost of long-term debt represents the projected weighted cost of Chaparral's various debt instruments that were issued to finance assets that were in place during the Test Year (Schedule War-1, Page 3 of 5).

Q. Do you agree with the Company-proposed 5.34 percent projected cost of long-term debt?

A. Yes.

CAPITAL STRUCTURE

Q. Have you reviewed Chaparral's testimony regarding the Company's proposed capital structure?

A. Yes.

Q. Please describe the Company's proposed capital structure.

A. The Company is proposing a Test Year capital structure comprised of 3.97 percent short-term debt, 19.47 percent long-term debt and 76.56 percent common equity.

...

Q. What capital structure are you proposing for Chaparral?

A. I am recommending a capital structure which is comprised of 4.10 percent short-term debt, 20.20 percent long-term debt and 75.70 percent common equity.

My recommended capital structure adopts the Company's projected levels of short-term debt and long-term debt. My recommended level of long-term debt reflects the retirement of Chaparral's long-term Series 1997A 4.00% to 4.85% serial bonds due 1998 to 2007.

Q. Do you agree with the Company-proposed level of common equity?

A. No. The $27,002,476 Company-proposed Test Year level of common equity includes a pro forma adjustment of $1,280,000 for an additional CAP allocation which fails the used and useful standard (an issue that is addressed more fully in the direct testimony of RUCO witness Timothy J. Coley). Accordingly, I have removed the Company's pro forma adjustment to reduce the level of common equity to my recommended figure of $25,722,476.

Q. Is Chaparral's capital structure in line with industry averages?

A. No. Chaparral's capital structure is heavier in equity than the capital structures of the water companies included in my cost of capital analysis (Schedule WAR-9). The capital structures for those utilities averaged 50.2 percent for debt and 49.8 percent for equity (49.7 percent common equity

+ 0.1 percent preferred equity). In fact Chaparral's capital structure has more equity than the capital structure of its parent American States, which has a capital structure comprised of 46.9 percent debt and 53.1 percent equity.

The same is true when Chaparral's capital structure is compared to the LDC's in my sample. The capital structures for those utilities averaged 45.7 percent for debt and 54.3 percent for equity (53.6 percent common equity + 0.7 percent preferred equity).

Q. In terms of risk, how does Chaparral's capital structure compare to the water utilities in your sample?

A. The water utilities in my sample would be considered as having a higher level of financial risk (i.e. the risk associated with debt repayment) because of their higher levels of debt and lower levels of common equity. The additional financial risk is due to debt leverage which is embedded in the cost of equities derived for those companies through the DCF analysis. Thus, the cost of equity derived in my DCF analysis is applicable to companies that are more leveraged and, theoretically speaking, riskier than a utility with a lower level of debt similar to Chaparral's. In the case of a publicly traded company, such as those included in my proxy, a company with Chaparral's level of debt would be perceived as having a lower level of financial risk and would therefore also have a lower expected return on common equity.

Q. Have you made an adjustment to your DCF estimate based on this perception of higher financial risk?

A. No. As discussed earlier, I have not made such an adjustment in this case. My higher recommended cost of common equity figure will compensate the Company's shareholders for any perceived higher levels of company-specific business risk that they believe Chaparral faces.

WEIGHTED COST OF CAPITAL

Q. How does the Company's proposed weighted cost of capital compare with your recommendation?

A. The Company has proposed a weighted cost of capital of 9.32 percent. This figure is the result of a weighted average of Chaparral's proposed 6.11 percent cost of short-term debt, 5.33 percent cost of Test Year Long-term debt and 10.50 percent cost of common equity capital. The Company-proposed 9.32 percent weighted cost of capital is 294 basis points higher than the 6.38 percent FVRB weighted cost of capital that I am recommending which reflects a 200 basis point inflation factor adjustment.

Q. Has the Company's cost of capital witness made any adjustments to remove an inflation factor from his estimated cost of common equity?

A. No. As I stated earlier, Mr. Bourassa's testimony was filed prior to Decision No. 70441 and does not take the Commission's conclusions into

account. Consequently the Company is applying an OCRB rate of return to a FVRB which, as I explained earlier, produces an inappropriate level of operating income that reflects an over-counting of the effects of inflation.

Q. What would the Company's weighted cost of capital be if Mr. Bourassa had made an inflation factor adjustment similar to yours?

A. Had Mr. Bourassa made an adjustment similar to the one that I made, his weighted cost of capital, to be applied to a FVRB, would have been 9.01 as opposed to 9.32 percent.

COMMENTS ON CHAPARRAL'S COST OF EQUITY CAPITAL TESTIMONY

Q. How does your recommended cost of equity capital compare with the cost of equity capital proposed by the Company?

A. The Company's cost of capital witness, Mr. Bourassa is recommending an OCRB cost of common equity of 10.50 percent which does not include an inflation factor adjustment. His 10.50 percent OCRB cost of equity capital is 167 basis points higher than the 8.83 percent OCRB cost of equity capital that I have calculated and is 367 basis points higher than the final FVRB cost of equity that I am recommending.

...

Q. What methods did Mr. Bourassa use to arrive at his cost of common equity for Chaparral?

A. Mr. Bourassa used both the DCF and CAPM methods. His DCF analysis relies on two constant growth versions of the DCF model that are similar to the model that I have used. His first constant growth model relies only on earnings growth estimates for the "g" component of the model while his second constant growth model relies on sustainable growth estimates for the "g" component. Mr. Bourassa also uses a two-stage growth version of the DCF model. The results of his DCF analysis range from 8.10 percent to 13.60 percent. His CAPM analysis uses the same model that I have used but he obtains two different results: one obtained by using an historical risk premium and the other by using a current market risk premium. His CAPM analysis produces results of 11.4 percent using an historical risk premium and 11.50 percent using a current market risk premium.

DCF Comparison

Q. What are the main reasons for the difference in the results that you obtained from your DCF analysis and the results that Mr. Bourassa obtained from his DCF analysis using the constant growth model?

A. Mr. Bourassa conducted his analysis over a year ago and consequently much of the data that he used in his analysis is now dated. This can be seen in a price comparison of three of the water company stocks that we

both used in our samples: The difference between the average closing stock prices used in my DCF model and Mr. Bourassa's DCF models are as follows:

	Rigsby	Bourassa	Difference
AWR	$38.12	$36.42	$1.07
CWT	$38.07	$38.02	$0.05
WTR	$17.01	$22.76	-$5.75

Q. What is the main difference between your constant growth DCF results and Mr. Bourassa's first constant growth model which relied strictly on earnings growth?

A. In respect to Mr. Bourassa's first constant growth model, which relied strictly on earnings growth, there is a 30 basis point difference between the average dividend yields of the three water utilities that our samples have in common; his 2.58 to my 2.88. However, there is a 124 basis point difference between his 7.78 percent average growth estimate ("g") for the three common utilities (i.e. AWR, CWT, and WTR) as opposed to my 6.54 percent estimate which also takes into account other growth estimates on dividends and book value. Subsequently Mr. Bourassa's DCF estimate relying only on earnings growth is 10.36 percent as opposed to my estimate of 9.42 percent which takes into account more recent data on

stock prices and growth projections for earnings, dividends and book value on the three water utilities our samples have in common.

Q. Please explain the main difference between your constant growth DCF results and Mr. Bourassa's second constant growth model which relied on sustainable growth?

A. The same 30 basis point difference between our estimated dividend yields exists in Mr. Bourassa's sustainable growth version of the constant growth model. However, his estimate for the "g" component is seriously flawed. As I noted earlier in my testimony, Value Line does not provide long-term projections on earnings, dividends and book value on the other three water utilities used by Mr. Bourassa in his sample. Consequently, Mr. Bourassa uses an unrealistic 6.39 percent average of his growth estimates for AWR, CWT and WTR for the other three water utilities included in his sample as opposed to using actual accounting information that is specific to those water utilities. This has the effect of increasing his DCF model's average estimate by 20 basis points.

Q. Did you conduct a two-stage DCF analysis like the one conducted by Mr. Bourassa?

A. No. Primarily because the growth rate component that I estimated for my single-stage model already takes into consideration both the near-term and long-term growth rate projections that Mr. Bourassa averaged in his

multi-stage model. This being the case, I saw no need to conduct a separate DCF analysis.

CAPM Comparison

Q. What are the main differences between your CAPM results and Mr. Bourassa's CAPM results?

A. The main differences between our CAPM results is attributable to the selection of U.S. Treasury instruments used as inputs for the risk-free rate of return and the time period that has expired since Mr. Bourassa filed his direct testimony. As I explained in my testimony on the economy, the interest rates on U.S. Treasury instruments have fallen over the past year as a result of the Fed's rate cutting actions (Attachment E). In addition, Mr. Bourassa tends to rely on longer term maturities greater than five years that are unrealistic proxies when one takes into account that utilities generally file for new rates every three to five years.

Q. How did Mr. Bourassa arrive at his final 10.50 percent cost of common equity for Chaparral?

A. Mr. Bourassa's final estimate of 10.50 percent is based upon his review of the results of his various DCF and CAPM models. He states that he believes that the 10.50 percent figure is a conservative estimate due to Chaparral's smaller size and higher operational operating risks are taken into consideration.

Q. Does your silence on any of the issues, matters or findings addressed in the testimony of Mr. Bourassa or any other witness for Chaparral constitute your acceptance of their positions on such issues, matters or findings?

A. No, it does not.

Q. Does this conclude your testimony on Chaparral?

A. Yes, it does.

Qualifications of William A. Rigsby, CRRA

EDUCATION:

University of Phoenix
Master of Business Administration, Emphasis in Accounting, 1993

Arizona State University
College of Business
Bachelor of Science, Finance, 1990

Mesa Community College
Associate of Applied Science, Banking and Finance, 1986

Society of Utility and Regulatory Financial Analysts
38th Annual Financial Forum and CRRA Examination
Georgetown University Conference Center, Washington D.C.
Awarded the Certified Rate of Return Analyst designation
after successfully completing SURFA's CRRA examination.

Michigan State University
Institute of Public Utilities
N.A.R.U.C. Annual Regulatory Studies Program, 1997 &1999

Florida State University
Center for Professional Development & Public Service
N.A.R.U.C. Annual Western Utility Rate School, 1996

EXPERIENCE:

Public Utilities Analyst V
Residential Utility Consumer Office
Phoenix, Arizona
April 2001 – Present

Senior Rate Analyst
Accounting & Rates - Financial Analysis Unit
Arizona Corporation Commission, Utilities Division
Phoenix, Arizona
July 1999 – April 2001

Senior Rate Analyst
Residential Utility Consumer Office
Phoenix, Arizona
December 1997 – July 1999

Utilities Auditor II and III
Accounting & Rates – Revenue Requirements Analysis Unit
Arizona Corporation Commission, Utilities Division
Phoenix, Arizona
October 1994 – November 1997

Tax Examiner Technician I / Revenue Auditor II
Arizona Department of Revenue
Transaction Privilege / Corporate Income Tax Audit Units
Phoenix, Arizona
July 1991 – October 1994

RESUME OF RATE CASE AND REGULATORY PARTICIPATION

Utility Company	Docket No.	Type of Proceeding
ICR Water Users Association	U-2824-94-389	Original CC&N
Rincon Water Company	U-1723-95-122	Rate Increase
Ash Fork Development Association, Inc.	E-1004-95-124	Rate Increase
Parker Lakeview Estates Homeowners Association, Inc.	U-1853-95-328	Rate Increase
Mirabell Water Company, Inc.	U-2368-95-449	Rate Increase
Bonita Creek Land and Homeowner's Association	U-2195-95-494	Rate Increase
Pineview Land & Water Company	U-1676-96-161	Rate Increase
Pineview Land & Water Company	U-1676-96-352	Financing
Montezuma Estates Property Owners Association	U-2064-96-465	Rate Increase
Houghland Water Company	U-2338-96-603 et al	Rate Increase
Sunrise Vistas Utilities Company – Water Division	U-2625-97-074	Rate Increase
Sunrise Vistas Utilities Company – Sewer Division	U-2625-97-075	Rate Increase
Holiday Enterprises, Inc. dba Holiday Water Company	U-1896-97-302	Rate Increase
Gardener Water Company	U-2373-97-499	Rate Increase
Cienega Water Company	W-2034-97-473	Rate Increase
Rincon Water Company	W-1723-97-414	Financing/Auth. To Issue Stock
Vail Water Company	W-01651A-97-0539 et al	Rate Increase
Bermuda Water Company, Inc.	W-01812A-98-0390	Rate Increase
Bella Vista Water Company	W-02465A-98-0458	Rate Increase
Pima Utility Company	SW-02199A-98-0578	Rate Increase

RESUME OF RATE CASE AND REGULATORY PARTICIPATION (Cont.)

Utility Company	Docket No.	Type of Proceeding
Pineview Water Company	W-01676A-99-0261	WIFA Financing
I.M. Water Company, Inc.	W-02191A-99-0415	Financing
Marana Water Service, Inc.	W-01493A-99-0398	WIFA Financing
Tonto Hills Utility Company	W-02483A-99-0558	WIFA Financing
New Life Trust, Inc. dba Dateland Utilities	W-03537A-99-0530	Financing
GTE California, Inc.	T-01954B-99-0511	Sale of Assets
Citizens Utilities Rural Company, Inc.	T-01846B-99-0511	Sale of Assets
MCO Properties, Inc.	W-02113A-00-0233	Reorganization
American States Water Company	W-02113A-00-0233	Reorganization
Arizona-American Water Company	W-01303A-00-0327	Financing
Arizona Electric Power Cooperative	E-01773A-00-0227	Financing
360networks (USA) Inc.	T-03777A-00-0575	Financing
Beardsley Water Company, Inc.	W-02074A-00-0482	WIFA Financing
Mirabell Water Company	W-02368A-00-0461	WIFA Financing
Rio Verde Utilities, Inc.	WS-02156A-00-0321 et al	Rate Increase/ Financing
Arizona Water Company	W-01445A-00-0749	Financing
Loma Linda Estates, Inc.	W-02211A-00-0975	Rate Increase
Arizona Water Company	W-01445A-00-0962	Rate Increase
Mountain Pass Utility Company	SW-03841A-01-0166	Financing
Picacho Sewer Company	SW-03709A-01-0165	Financing
Picacho Water Company	W-03528A-01-0169	Financing
Ridgeview Utility Company	W-03861A-01-0167	Financing
Green Valley Water Company	W-02025A-01-0559	Rate Increase
Bella Vista Water Company	W-02465A-01-0776	Rate Increase
Arizona Water Company	W-01445A-02-0619	Rate Increase

RESUME OF RATE CASE AND REGULATORY PARTICIPATION (Cont.)

Utility Company	Docket No.	Type of Proceeding
Arizona-American Water Company	W-01303A-02-0867 et al.	Rate Increase
Arizona Public Service Company	E-01345A-03-0437	Rate Increase
Rio Rico Utilities, Inc.	WS-02676A-03-0434	Rate Increase
Qwest Corporation	T-01051B-03-0454	Renewed Price Cap
Chaparral City Water Company	W-02113A-04-0616	Rate Increase
Arizona Water Company	W-01445A-04-0650	Rate Increase
Tucson Electric Power	E-01933A-04-0408	Rate Review
Southwest Gas Corporation	G-01551A-04-0876	Rate Increase
Arizona-American Water Company	W-01303A-05-0405	Rate Increase
Black Mountain Sewer Corporation	SW-02361A-05-0657	Rate Increase
Far West Water & Sewer Company	WS-03478A-05-0801	Rate Increase
Gold Canyon Sewer Company	SW-02519A-06-0015	Rate Increase
Arizona Public Service Company	E-01345A-05-0816	Rate Increase
Arizona-American Water Company	W-01303A-06-0014	Rate Increase
Arizona-American Water Company	W-01303A-05-0718	Transaction Approval
Arizona-American Water Company	W-01303A-05-0405	ACRM Filing
UNS Gas, Inc.	G-04204A-06-0463	Rate Increase
Arizona-American Water Company	W-01303A-07-0209	Rate Increase
Tucson Electric Power	E-01933A-07-0402	Rate Increase
Southwest Gas Corporation	G-01551A-07-0504	Rate Increase

ATTACHMENT A

Despite being what is typically perceived as a safe haven during tumultuous market conditions such as we are experiencing right now, the Water Utility Industry, as a whole, has shown little, if any, price momentum over the last few months. As a result, the group continues to rank near the bottom of the *Value Line Investment Survey* for Timeliness. Earning power has been restrained for most of the companies operating in this space by unfavorable weather conditions and the higher costs associated with them. Even the anticipated arrival of one of the larger players in this field, *American Water Works Company*, was unable to rally investor opinion. Although an improving regulatory environment ought to boost earnings growth going forward, infrastructure requirements and capital restraints to continue, dampening most of the stocks' growth potential. On that note, the one once lofty dividend yield has lost some shine, too.

Better Backing

Every utility provider is required to comply with specific requirements, upheld by state regulatory boards. These authorities were put in place in an effort to maintain a balance of power between customers and providers, as well as ensure fair business practices. Unfortunately, this has been easier said than done. Some state forces have tended to side with customers and been unfriendly to businesses, handing down untimely and, in many cases, unfavorable rulings. This has been extremely problematic, as utilities typically submit general rate case claims every year, attempting to recapture lost wages, due usually to a variety of circumstances, which are generally weather related. That said, the red tape looks as though it is being removed in many cases. In California, for example, the California Public Utilities Commission (CPUC), under Governor Schwarzenegger's watch, has done a complete 360 and implemented a much more business friendly approach. This augurs well for the future, as the board is currently looking into the possibility enacting some of the proposals of the Water Action Plan of 2005. Such a scenario would further streamline the decision making process and remove some future earnings volatility, via the adoption of a weather normalization clause.

INDUSTRY TIMELINESS: 96 (of 98)

Same Obstacles

The costs of maintaining current water systems in the United States are growing at exorbitant rates. Many of them are more than 100 years in age and in need of refurbishing, and in some cases, complete overhauls. Meanwhile, EPA requirements are becoming more stringent, a trend that will likely only intensify as the threat of bioterrorism continues to mount. In all, infrastructure costs are expected to climb into the hundreds of millions of dollars in the coming decade. However, not everyone in this space can foot the bill. Many of the smaller operators are light on cash and covered in debt. As a result, the acquisition market has been robust of late. *Aqua America* has definitely been the most opportunistic name in this space, buying out hundreds of these smaller players unable to meet the financial burden in recent years. It is likely to maintain its torrid pace, using the current market conditions to continue expanding its geographic footprint and accessing new markets, with a much lower barrier of entry.

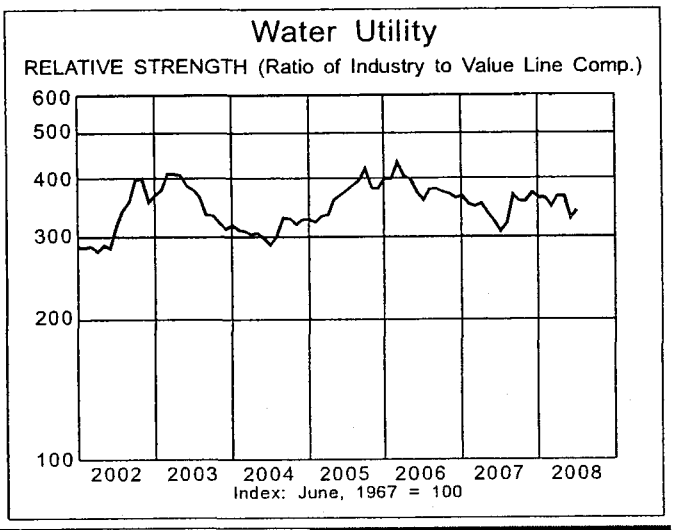
Investment Advice

We recommend that investors contemplating entry into the Water Utilities Industry, perhaps reconsider. None of the stocks here stand out for the coming six to 12 months or the 3- to 5-year time frame either. Rising infrastructure costs, coupled with the financial constraints that most water companies are facing, are expected to wipe out most of the benefits of a better regulatory climate, thus limiting shareholder gains. Meanwhile, the current dividend yields do not exactly whet our appetite either, with many better income bearing instruments on the market for investors to consider. Although we always insist that potential investors carefully review the individual reports in the next few pages, we suggest paying particularly close attention to new comer *American Water Works*. Wall Street appears to have already soured on the stock just months after its April IPO. Any further price weakness may entice some attention. *Aqua America* also bears looking at. Its aggressive M&A strategy gives it the most ability to improve its growth profile.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2004	2005	2006	2007	2008	2009		11-13
1173.6	1256.9	3454.1	3100.0	*3900*	*4300*	Revenues ($mill)	*5300*
127.1	148.2	d5.8	d278.0	*360*	*450*	Net Profit ($mill)	*625*
39.1%	40.5%	NMF	NMF	*27.5%*	*35.0%*	Income Tax Rate	*38.5%*
1.0%	1.1%	3.7%	NMF	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
49.1%	50.4%	54.0%	50.1%	*53.0%*	*54.0%*	Long-Term Debt Ratio	*52.0%*
50.7%	49.5%	45.9%	49.9%	*47.0%*	*46.0%*	Common Equity Ratio	*48.0%*
2782.1	3049.9	12110.2	10790.6	*12900*	*13675*	Total Capital ($mill)	*16500*
3836.9	4200.7	13308.3	11522.4	*15180*	*16050*	Net Plant ($mill)	*18375*
6.0%	6.3%	1.6%	NMF	*5.0%*	*5.5%*	Return on Total Cap'l	*7.0%*
9.0%	9.8%	NMF	NMF	*6.0%*	*7.0%*	Return on Shr. Equity	*8.0%*
9.0%	9.8%	NMF	NMF	*6.0%*	*7.0%*	Return on Com Equity	*8.0%*
3.1%	3.7%	NMF	NMF	*3.0%*	*3.0%*	Retained to Com Eq	*4.5%*
66%	62%	NMF	NMF	*50%*	*57%*	All Div'ds to Net Prof	*55%*
25.4	29.4	NMF	NMF	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
.79	1.57	NMF	NMF			Relative P/E Ratio	*1.20*
6.1%	5.2%	2.0%	2.6%			Avg Ann'l Div'd Yield	*2.3%*



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AMER. STATES WATER NYSE-AWR

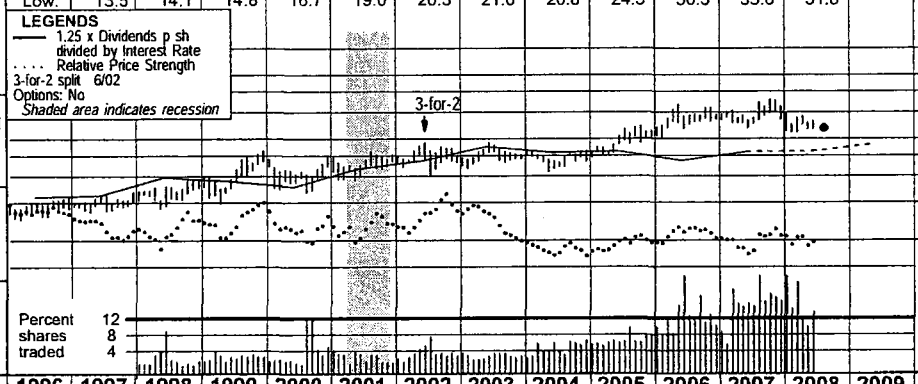
RECENT PRICE 33.80 | P/E RATIO 20.5 (22.4 / 20.0) | RELATIVE P/E RATIO 1.39 | DIV'D YLD 3.0% | VALUE LINE

TIMELINESS 4 Lowered 2/15/08
SAFETY 3 New 2/4/00
TECHNICAL 4 Lowered 5/30/08
BETA 1.05 (1.00 = Market)

High:	17.1	19.5	26.5	25.3	26.4	29.0	29.0	26.8	34.6	43.8	46.1	40.3
Low:	13.5	14.1	14.8	16.7	19.0	20.3	21.6	20.8	24.3	30.3	33.6	31.8

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.25 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 6/02
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+90%)	20%
Low	40	(+20%)	7%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	1	0	0	1	0	0	0	0	0
Options	2	0	4	0	0	0	0	0	1
to Sell	2	0	4	0	0	0	0	0	1

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	63	63	53
to Sell	53	52	59
Hld's(000)	10424	9617	9783

% TOT. RETURN 6/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	0.8	-18.0
3 yr.	28.7	11.3
5 yr.	47.5	63.2

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
10.10	9.27	10.43	11.03	11.37	11.44	11.02	12.91	12.17	13.06	13.78	13.98	13.61	14.06	15.76	17.49	*17.00*	*18.05*	Revenues per sh	*21.85*
1.81	1.67	1.68	1.75	1.75	1.85	2.04	2.26	2.20	2.53	2.54	2.08	2.23	2.64	2.89	3.31	*3.40*	*3.80*	"Cash Flow" per sh	*4.70*
1.15	1.11	.95	1.03	1.13	1.04	1.08	1.19	1.28	1.35	1.34	.78	1.05	1.32	1.33	1.62	*1.65*	*1.85*	Earnings per sh A	*2.50*
.77	.79	.80	.81	.82	.83	.84	.85	.86	.87	.87	.88	.89	.90	.91	.96	*1.00*	*1.08*	Div'd Decl'd per sh B■	*1.20*
2.31	1.90	2.43	2.19	2.40	2.58	3.11	4.30	3.03	3.18	2.68	3.76	5.03	4.24	3.91	2.89	*3.80*	*3.75*	Cap'l Spending per sh	*4.00*
8.85	9.95	10.07	10.29	11.01	11.24	11.48	11.82	12.74	13.22	14.05	13.97	15.01	15.72	16.64	17.53	*17.75*	*18.05*	Book Value per sh	*19.20*
9.96	11.71	11.77	11.77	13.33	13.44	13.44	13.44	15.12	15.12	15.18	15.21	16.75	16.80	17.05	17.23	*17.75*	*18.00*	Common Shs Outst'g C	*19.00*
10.6	13.4	12.8	11.6	12.6	14.5	15.5	17.1	15.9	16.7	18.3	31.9	23.2	21.9	27.7	24.0	*Bold figures are*		Avg Ann'l P/E Ratio	*21.0*
.64	.79	.84	.78	.79	.84	.81	.97	1.03	.86	1.00	1.82	1.23	1.17	1.50	1.26	*Value Line*		Relative P/E Ratio	*1.40*
6.3%	5.3%	6.6%	6.7%	5.8%	5.5%	5.0%	4.2%	4.2%	3.9%	3.6%	3.5%	3.6%	3.1%	2.5%	2.5%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

CAPITAL STRUCTURE as of 3/31/08
Total Debt $315.4 mill. **Due in 5 Yrs** $41.1 mill.
LT Debt $267.2 mill. **LT Interest** $22.5 mill.
(LT interest earned: 3.0x: total interest coverage: 2.8x) (47% of Cap'l)

Leases, Uncapitalized: None
Pension Assets-12/07 $70.9 mill.
Oblig. $83.4 mill.
Pfd Stock None.

Common Stock 17,245,224 shs.
MARKET CAP: $575 million (Small Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
148.1	173.4	184.0	197.5	209.2	212.7	228.0	236.2	268.6	301.4	*302*	*325*	Revenues ($mill)	*415*
14.6	16.1	18.0	20.4	20.3	11.9	16.5	22.5	23.1	28.0	*30.0*	*35.0*	Net Profit ($mill)	*50.0*
40.9%	46.0%	45.7%	43.0%	38.9%	43.5%	37.4%	47.0%	40.5%	42.6%	*43.0%*	*42.5%*	Income Tax Rate	*42.0%*
--	--	--	--	--	--	--	--	12.2%	8.5%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*Nil*
43.6%	51.0%	47.5%	54.9%	52.0%	52.0%	47.7%	50.4%	48.6%	46.9%	*47.5%*	*48.0%*	Long-Term Debt Ratio	*50.0%*
55.7%	48.4%	51.9%	44.7%	48.0%	48.0%	52.3%	49.6%	51.4%	53.1%	*52.5%*	*52.0%*	Common Equity Ratio	*50.0%*
277.1	328.2	371.1	447.6	444.4	442.3	480.4	532.5	551.6	569.4	*600*	*625*	Total Capital ($mill)	*730*
414.8	449.6	509.1	539.8	563.3	602.3	664.2	713.2	750.6	776.4	*810*	*845*	Net Plant ($mill)	*950*
7.0%	6.6%	6.4%	6.1%	6.5%	4.6%	5.2%	5.4%	6.0%	6.7%	*6.5%*	*7.5%*	Return on Total Cap'l	*9.0%*
9.4%	10.0%	9.2%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	*9.5%*	*11.0%*	Return on Shr. Equity	*13.5%*
9.4%	10.1%	9.3%	10.1%	9.5%	5.6%	6.6%	8.5%	8.1%	9.3%	*9.5%*	*11.0%*	Return on Com Equity	*13.5%*
2.1%	2.9%	3.0%	3.6%	3.3%	NMF	1.0%	2.8%	2.7%	3.9%	*4.0%*	*5.5%*	Retained to Com Eq	*7.0%*
78%	72%	68%	65%	65%	113%	84%	67%	67%	58%	*59%*	*56%*	All Div'ds to Net Prof	*46%*

CURRENT POSITION ($MILL.)	2006	2007	3/31/08
Cash Assets	3.2	1.7	.8
Receivables	14.8	16.1	14.5
Inventory (Avg Cst)	1.6	1.6	1.6
Other	44.8	43.7	42.9
Current Assets	64.4	63.1	59.8
Accts Payable	24.0	29.1	27.8
Debt Due	32.6	37.8	48.6
Other	29.3	27.4	26.1
Current Liab.	85.9	94.3	102.5
Fix. Chg. Cov.	268%	314%	300%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	3.5%	4.0%	*6.0%*
"Cash Flow"	5.0%	4.0%	*8.0%*
Earnings	3.0%	1.5%	*10.0%*
Dividends	1.0%	1.5%	*5.0%*
Book Value	4.5%	4.5%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	49.8	60.5	68.1	57.8	236.2
2006	64.3	63.0	75.0	66.3	268.6
2007	72.3	79.3	75.8	74.0	301.4
2008	68.9	*79.1*	*76.0*	*78.0*	*302*
2009	*74.0*	*84.0*	*85.0*	*82.0*	*325*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	.22	.34	.47	.29	1.32
2006	.35	.36	.32	.30	1.33
2007	.40	.42	.44	.35	1.62
2008	.30	*.43*	*.47*	*.45*	*1.65*
2009	*.35*	*.50*	*.55*	*.45*	*1.85*

Cal-endar	QUARTERLY DIVIDENDS PAID B■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.221	.221	.221	.225	.89
2005	.225	.225	.225	.225	.90
2006	.225	.225	.225	.235	.91
2007	.235	.235	.235	.250	.96
2008	.250	.250			

BUSINESS: American States Water Co. operates as a holding company. Through its principal subsidiary, Golden State Water Company, it supplies water to more than 250,000 customers in 75 communities in 10 counties. Service areas include the greater metropolitan areas of Los Angeles and Orange Counties. The company also provides electric utility services to nearly 23,250 customers in the city of Big Bear Lake and in areas of San Bernardino County. Acquired Chaparral City Water of Arizona (10/00). Has roughly 572 employees. Officers & directors own 4.4% of common stock (4/08 Proxy). Chairman: Lloyd Ross. President & CEO: Floyd Wicks. Inc: CA. Addr.: 630 East Foothill Boulevard, San Dimas, CA 91773. Tele.: 909-394-3600. Internet: www.aswater.com.

American States Water got off to an inauspicious start. The company posted earnings of $0.30 a share in the first quarter, 25% off last year's figure and $0.08 below our estimate. Sales decreased 4%, to $68.9 million, due mainly to a reduction in fees from military bases. Water consumption would have declined even further if not for continued improvements in the regulatory process, namely the recent rate hike, effective January 1st, implemented by the California Public Utilities Commission (CPUC).

The outlook for the remainder of the year has dried up, too. Extremely arid weather (the driest on record in roughly 70 years) in California has prompted Governor Schwarzenegger to declare a drought and urge citizens to be more conservative with water usage. This is obviously not a favorable development for American, and we have therefore reduced our share-net estimate by $0.15, to $1.65, and our revenues figure by $10 million, to reflect minimal revenue growth.

We expect that earnings growth ought to improve next year, though. Weather conditions ought to improve, replenishing reserves and sparking higher usage. Plus, the CPUC will likely continue handing down favorable general rate case decisions, a trend that began when the Governor took the reins. In all, we look for double-digit earnings growth in 2009.

Nevertheless, these shares do not whet our appetite. They've tumbled roughly 10% since our last review in April, and are ranked 4 (Below Average) for Timeliness. Growth will probably remain under wraps for the coming six to 12 months due to concerns regarding inventory levels and escalating operating costs. Longer term, we are concerned about the effects of growing infrastructure needs and the company's ability to fund such endeavors. American has a feeble cash position and will have to look to outside financiers to fund future capital expenditures. Not only will such activity result in higher interest costs and share count, thus diluting shareholder gains, but it will also limit the company's ability to make acquisitions and expand its customer base. Meanwhile, the issue does not stand out as an income producer versus other utilities.

Andre J. Costanza *July 25, 2008*

(A) Primary earnings. Excludes nonrecurring gains: '91, 73¢; '92, 13¢; '04, 14¢; '05, 25¢; '06, 6¢. Next earnings report due early August. May not add due to rounding.
(B) Dividends historically paid in early March, June, September, and December. ■ Div'd reinvestment plan available.
(C) In millions, adjusted for splits.

Company's Financial Strength	B++
Stock's Price Stability	75
Price Growth Persistence	85
Earnings Predictability	60

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CALIFORNIA WATER NYSE-CWT

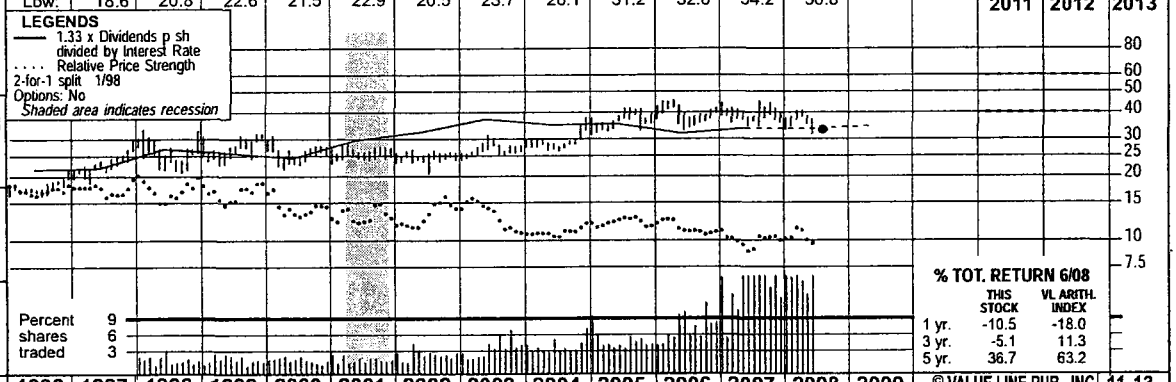
RECENT PRICE 33.21 | P/E RATIO 20.8 (23.1 / 22.0) | RELATIVE P/E RATIO 1.41 | DIV'D YLD 3.5% | VALUE LINE

TIMELINESS 3 Raised 3/7/08
SAFETY 3 Lowered 7/27/07
TECHNICAL 3 Raised 6/20/08
BETA 1.15 (1.00 = Market)

High:	29.6	33.8	32.0	31.4	28.6	26.9	31.4	37.9	42.1	45.8	45.4	41.2
Low:	18.6	20.8	22.6	21.5	22.9	20.5	23.7	26.1	31.2	32.8	34.2	30.8

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.33 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 1/98
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	60	(+80%)	18%
Low	40	(+20%)	8%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	1	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	45	62	60
to Sell	46	49	40
Hld's(000)	9581	9554	10255

% TOT. RETURN 6/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	-10.5	-18.0
3 yr.	-5.1	11.3
5 yr.	36.7	63.2

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
12.29	13.34	12.59	13.17	14.48	15.48	14.76	15.96	16.16	16.26	17.33	16.37	17.18	17.44	16.20	17.76	*17.90*	*19.55*	Revenues per sh	*21.25*
1.92	2.25	2.02	2.07	2.50	2.92	2.60	2.75	2.52	2.20	2.65	2.51	2.83	3.03	2.71	3.12	*3.30*	*3.65*	"Cash Flow" per sh	*4.25*
1.09	1.35	1.22	1.17	1.51	1.83	1.45	1.53	1.31	.94	1.25	1.21	1.46	1.47	1.34	1.50	*1.60*	*1.85*	Earnings per sh A	*2.35*
.93	.96	.99	1.02	1.04	1.06	1.07	1.09	1.10	1.12	1.12	1.12	1.13	1.14	1.15	1.16	*1.17*	*1.18*	Div'd Decl'd per sh B ■	*1.21*
3.09	2.53	2.26	2.17	2.83	2.61	2.74	3.44	2.45	4.09	5.82	4.39	3.73	4.01	4.28	3.68	*4.90*	*4.60*	Cap'l Spending per sh	*4.25*
10.51	10.90	11.56	11.72	12.22	13.00	13.38	13.43	12.90	12.95	13.12	14.44	15.66	15.79	18.15	18.50	*19.05*	*19.75*	Book Value per sh C	*21.80*
11.38	11.38	12.49	12.54	12.62	12.62	12.62	12.94	15.15	15.18	15.18	16.93	18.37	18.39	20.66	20.67	*21.25*	*21.75*	Common Shs Outst'g D	*25.00*
14.1	13.6	14.1	13.7	11.9	12.6	17.8	17.8	19.6	27.1	19.8	22.1	20.1	24.9	29.2	26.1	*Bold figures are*		Avg Ann'l P/E Ratio	*21.0*
.86	.80	.92	.92	.75	.73	.93	1.01	1.27	1.39	1.08	1.26	1.06	1.33	1.58	1.37	*Value Line*		Relative P/E Ratio	*1.40*
6.1%	5.2%	5.8%	6.4%	5.8%	4.6%	4.2%	4.0%	4.3%	4.4%	4.5%	4.2%	3.9%	3.1%	2.9%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*2.4%*

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
186.3	206.4	244.8	246.8	263.2	277.1	315.6	320.7	334.7	367.1	*380*	*425*	Revenues ($mill)	*500*
18.4	19.9	20.0	14.4	19.1	19.4	26.0	27.2	25.6	31.2	*34.0*	*40.0*	Net Profit ($mill)	*60.0*
36.4%	37.9%	42.3%	39.4%	39.7%	39.9%	39.6%	42.4%	37.4%	39.9%	*41.0%*	*41.0%*	Income Tax Rate	*41.0%*
--	--	--	--	--	10.3%	3.2%	3.3%	10.6%	8.3%	*5.0%*	*5.0%*	AFUDC % to Net Profit	*5.0%*
44.2%	46.9%	48.9%	50.3%	55.3%	50.2%	48.6%	48.3%	43.5%	42.9%	*44.0%*	*45.5%*	Long-Term Debt Ratio	*47.5%*
54.7%	52.0%	50.2%	48.8%	44.0%	49.1%	50.8%	51.1%	55.9%	56.6%	*55.5%*	*54.0%*	Common Equity Ratio	*52.0%*
308.6	333.8	388.8	402.7	453.1	498.4	565.9	568.1	670.1	674.9	*730*	*800*	Total Capital ($mill)	*1050*
478.3	515.4	582.0	624.3	697.0	759.5	800.3	862.7	941.5	1010.2	*1080*	*1140*	Net Plant ($mill)	*1300*
7.8%	7.8%	6.8%	5.3%	5.9%	5.6%	6.1%	6.3%	5.2%	5.9%	*6.0%*	*6.5%*	Return on Total Cap'l	*7.0%*
10.7%	11.2%	10.0%	7.2%	9.4%	7.8%	8.9%	9.3%	6.8%	8.1%	*8.5%*	*9.5%*	Return on Shr. Equity	*11.0%*
10.8%	11.4%	10.1%	7.2%	9.5%	7.9%	9.0%	9.3%	6.8%	8.1%	*8.5%*	*9.5%*	Return on Com Equity	*11.0%*
2.8%	3.5%	1.8%	NMF	1.0%	.7%	2.1%	2.1%	1.0%	1.8%	*2.0%*	*3.5%*	Retained to Com Eq	*5.5%*
74%	70%	82%	119%	90%	91%	77%	78%	86%	77%	*73%*	*64%*	All Div'ds to Net Prof	*50%*

CAPITAL STRUCTURE as of 3/31/08
Total Debt $305.2 mill. **Due in 5 Yrs** $16.2 mill.
LT Debt $288.5 mill. **LT Interest** $20.0 mill.

(LT interest earned: 3.8x; total int. cov.: 3.6x)

Pension Assets-12/07 $85.3 mill.
Oblig. $105.8 mill.
Pfd Stock $3.5 mill. **Pfd Div'd** $.15 mill.
139,000 shares, 4.4% cumulative ($25 par).

Common Stock 20,716,702 shs.
as of 5/1/08
MARKET CAP: $700 million (Small Cap)

CURRENT POSITION ($MILL.)	2006	2007	3/31/08
Cash Assets	60.3	6.7	3.0
Other	49.3	53.3	48.0
Current Assets	109.6	60.0	51.0
Accts Payable	33.1	36.7	26.7
Debt Due	1.8	2.7	16.7
Other	35.3	30.3	35.3
Current Liab.	70.2	69.7	78.7
Fix. Chg. Cov.	317%	365%	375%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	2.0%	0.5%	*3.5%*
"Cash Flow"	1.5%	4.0%	*6.0%*
Earnings	-0.5%	4.5%	*8.5%*
Dividends	1.0%	0.5%	*1.0%*
Book Value	3.5%	6.0%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	60.3	81.5	101.1	77.8	320.7
2006	65.2	81.1	107.8	80.6	334.7
2007	71.6	95.8	113.8	85.9	367.1
2008	72.9	*95.1*	*120*	*92.0*	*380*
2009	*80.0*	*110*	*135*	*100*	*425*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.03	.41	.71	.32	1.47
2006	.04	.31	.68	.31	1.34
2007	.07	.37	.67	.39	1.50
2008	.01	*.40*	*.77*	*.42*	*1.60*
2009	*.10*	*.45*	*.85*	*.45*	*1.85*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.283	.283	.283	.283	1.13
2005	.285	.285	.285	.285	1.14
2006	.2875	.2875	.2875	.2875	1.15
2007	.290	.290	.290	.290	1.16
2008	.293	.293			

BUSINESS: California Water Service Group provides regulated and nonregulated water service to roughly 463,600 customers in 83 communities in California, Washington, New Mexico, and Hawaii. Main service areas: San Francisco Bay area, Sacramento Valley, Salinas Valley, San Joaquin Valley & parts of Los Angeles. Acquired National Utility Company (5/04); Rio Grande Corp. (11/00). Revenue breakdown, '07: residential, 69%; business, 18%; public authorities, 5%; industrial, 5%; other, 3%. '07 reported depreciation rate: 2.2%. Has roughly 890 employees. Chairman: Robert W. Foy. President & CEO: Peter C. Nelson (4/08 Proxy). Inc.: Delaware. Address: 1720 North First Street, San Jose, California 95112-4598. Telephone: 408-367-8200. Internet: www.calwatergroup.com.

California Water Service Group barely eked out a gain in the first quarter. The water utility provider posted a profit of $0.01, a stark contrast to the $0.07 gain reported last year, and roughly a dime below our expectation. Revenue growth came in at a disappointing 2%, as the benefits of ongoing regulatory improvements were offset by unusually wet weather conditions. Higher administration costs were also a problem, cutting into operating margins.

Ironically, dryer weather conditions are threatening profitability over the next few quarters. California, where the company does most of its business, saw extremely hot temperatures in the second quarter, which evaporated most water supplies and caused a drought. That said, the company, at Governor Schwarzenegger's urging to be more conservative, has instituted the first stage of its plan aimed at reducing water usage by 10% for the roughly two million people it serves in its 24 operating districts. Although this does not seem to be in the company's best interest at first blush, we believe that it must play ball in order to continue receiving the backing of the current administration with general rate cases. As a result, we've lowered our full-year earnings outlook by 9%, to $1.60 a share.

An improved operating environment ought to clear the way for 16% share-net growth in 2009. It appears as though some of the regulatory agendas in the 2005 Water Action Plan will come to fruition, streamlining the regulatory process.

We recommend taking a pass on this issue. CWT shares have tumbled 18% since our April review and are ranked 3 (Average) for Timeliness. Meanwhile, the capital-intensive nature of the business will likely underpin the stock going forward, making it a below-average selection for the next 3 to 5 years. There are better income vehicles out there too.

We endorse the company's effort to expand its presence in other areas, though. Although regulatory backing in the Golden State has been much improved, diversification of the business model into other states could well improve the stock's appeal. This will be a difficult task, however, given CWT's financial constraints.

Andre J. Costanza *July 25, 2008*

(A) Basic EPS. Excl. nonrecurring gain (loss): '00, (7¢); '01, 4¢; 02, 8¢. Next earnings report due early Aug.
(B) Dividends historically paid in mid-Feb., May, Aug., and Nov. ■ Div'd reinvestment plan available.
(C) Incl. deferred charges. In '07: $69.7 mill., $3.37/sh.
(D) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	65
Price Growth Persistence	75
Earnings Predictability	75

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SOUTHWEST WATER NDQ-SWWC

RECENT PRICE 9.61 | P/E RATIO 32.0 (35.6 / 25.0) | RELATIVE P/E RATIO 2.18 | DIV'D YLD 2.5% | VALUE LINE

TIMELINESS 4 Lowered 11/23/07
SAFETY 3 New 10/28/05
TECHNICAL 3 Raised 7/11/08
BETA 1.05 (1.00 = Market)

High:	5.0	5.6	9.2	8.3	10.2	12.4	11.2	14.3	15.2	19.1	16.4	12.8	
Low:	2.6	3.5	3.6	5.1	6.9	7.6	8.1	10.3	9.0	10.8	11.5	9.4	

2011-13 PROJECTIONS

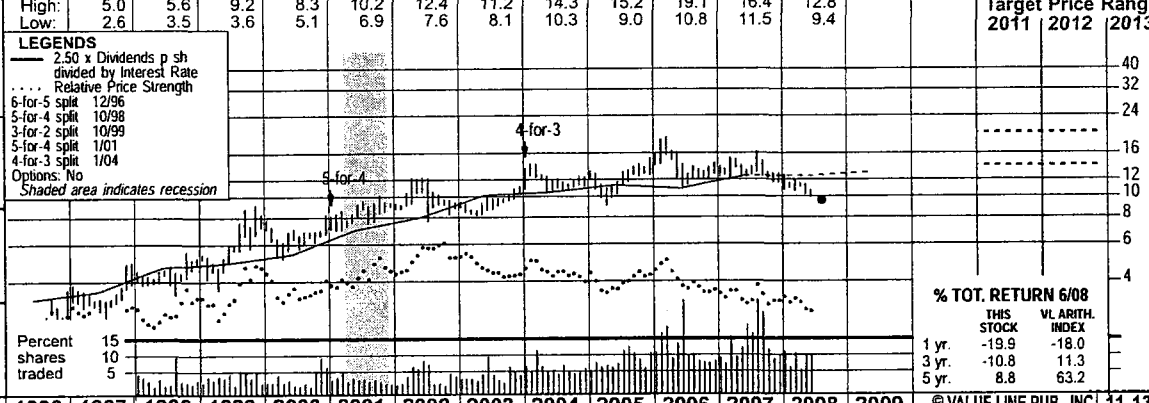
	Price	Gain	Ann'l Total Return
High	20	(+110%)	22%
Low	14	(+45%)	12%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	1	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	1	3
to Sell	1	1	1	1	1	0	0	0	2

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	34	31	41
to Sell	27	26	23
Hld's(000)	10913	11090	12145



% TOT. RETURN 6/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	-19.9	-18.0
3 yr.	-10.8	11.3
5 yr.	8.8	63.2

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
3.77	4.03	4.20	4.84	5.31	5.61	5.63	6.16	7.49	8.15	9.12	10.70	9.23	9.10	9.42	8.96	*9.00*	*9.25*	Revenues per sh	*10.35*
.44	.38	.38	.44	.46	.53	.59	.65	.76	.87	.86	.91	.67	.78	.85	.86	*.95*	*1.10*	"Cash Flow" per sh	*1.60*
.19	.08	.09	.12	.15	.21	.25	.31	.38	.42	.39	.44	.23	.34	.40	.31	*.30*	*.40*	Earnings per sh A	*.70*
.18	.14	.08	.08	.09	.09	.10	.11	.13	.14	.15	.16	.18	.20	.21	.23	*.24*	*.26*	Div'd Decl'd per sh B	*.30*
.42	.60	.72	.84	.95	.74	.79	.53	.55	1.06	1.78	1.14	1.26	1.66	1.87	1.70	*1.60*	*1.60*	Cap'l Spending per sh	*1.70*
2.42	2.31	2.31	2.45	2.40	2.52	2.70	3.05	3.44	3.84	4.27	4.90	6.17	6.49	6.98	5.98	*6.65*	*6.80*	Book Value per sh D	*7.85*
11.80	11.97	12.13	11.74	12.45	12.65	12.83	13.12	13.99	14.17	14.35	16.17	20.36	22.33	23.80	24.27	*25.00*	*26.00*	Common Shs Outst'g C	*28.00*
14.5	35.8	22.3	14.6	16.5	16.9	17.2	19.6	17.0	19.8	24.8	21.2	51.6	35.5	34.8	--	*Bold figures are*		Avg Ann'l P/E Ratio	*25.0*
.88	2.11	1.46	.98	1.03	.97	.89	1.12	1.11	1.01	1.35	1.21	2.73	1.89	1.88	--	*Value Line*		Relative P/E Ratio	*1.65*
6.6%	4.7%	4.2%	4.7%	3.4%	2.7%	2.3%	1.8%	2.0%	1.7%	1.5%	1.7%	1.5%	1.6%	1.5%	1.8%	*estimates*		Avg Ann'l Div'd Yield	*1.7%*

CAPITAL STRUCTURE as of 3/31/08
Total Debt $183.8 mill. **Due in 5 Yrs** $60.5 mill.
LT Debt $181.9 mill. **LT Interest** $9.0 mill.
(Total interest coverage: 2.7x) (48% of Cap'l)

Leases, Uncapitalized: Annual rentals $6.7 mill.
Pension Liability None

Pfd Stock $.458 mill. **Pfd Div'd** $.020 mill.
Common Stock 24,467,595 shs.
as of 5/2/08

MARKET CAP: $225 million (Small Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
72.2	80.9	104.7	115.5	130.8	173.0	188.0	203.2	224.2	217.3	*225*	*240*	Revenues ($mill)	*300*
3.4	4.2	5.4	6.2	6.0	7.2	4.5	7.3	9.3	5.0	*7.5*	*10.5*	Net Profit ($mill)	*20.5*
39.5%	39.0%	37.0%	36.0%	34.9%	35.9%	36.1%	36.0%	35.0%	NMF	*35.0%*	*35.0%*	Income Tax Rate	*36.0%*
--	--	--	14.4%	3.2%	--	11.0%	9.5%	12.5%	11.0%	*11.0%*	*11.5%*	AFUDC % to Net Profit	*14.0%*
48.7%	45.2%	48.8%	51.4%	56.7%	47.9%	47.9%	44.7%	43.6%	50.0%	*50.5%*	*47.5%*	Long-Term Debt Ratio	*38.0%*
50.5%	54.1%	50.7%	48.2%	42.9%	51.8%	52.0%	55.1%	56.3%	50.0%	*49.5%*	*52.5%*	Common Equity Ratio	*62.0%*
68.5	73.9	95.0	113.0	142.8	152.8	242.0	262.9	295.2	290.0	*335*	*335*	Total Capital ($mill)	*370*
109.2	113.7	157.8	171.1	203.9	219.5	302.6	344.8	389.6	410.3	*440*	*460*	Net Plant ($mill)	*525*
7.1%	7.6%	7.6%	7.6%	5.8%	6.2%	3.1%	4.1%	4.5%	3.0%	*3.5%*	*4.5%*	Return on Total Cap'l	*6.5%*
9.5%	10.3%	11.1%	11.4%	9.7%	9.0%	3.6%	5.0%	5.6%	3.5%	*4.5%*	*6.0%*	Return on Shr. Equity	*9.0%*
9.6%	10.4%	11.1%	11.4%	9.7%	9.1%	3.6%	5.0%	5.6%	3.5%	*4.5%*	*6.0%*	Return on Com Equity	*9.0%*
6.0%	7.0%	7.8%	7.8%	6.3%	5.8%	.8%	2.1%	2.6%	NMF	*1.0%*	*2.5%*	Retained to Com Eq	*5.5%*
38%	33%	31%	32%	36%	36%	78%	58%	54%	NMF	*80%*	*65%*	All Div'ds to Net Prof	*43%*

CURRENT POSITION ($MILL.)	2006	2007	3/31/08
Cash Assets	4.3	2.9	2.2
Receivables	27.5	26.0	27.7
Inventory (Avg Cst)	--	--	--
Other	16.5	32.7	32.8
Current Assets	48.3	61.6	62.7
Accts Payable	12.7	14.9	8.4
Debt Due	1.4	1.9	1.9
Other	21.7	29.4	27.6
Current Liab.	35.8	46.2	37.9

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	5.5%	2.0%	*2.0%*
"Cash Flow"	2.0%	-6.5%	*13.0%*
Earnings	-1.5%	-19.5%	*12.0%*
Dividends	9.5%	9.0%	*6.0%*
Book Value	10.5%	11.5%	*3.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	45.2	51.3	54.7	52.0	203.2
2006	50.8	55.4	60.1	57.9	224.2
2007	48.1	55.0	57.4	56.8	217.3
2008	50.8	*57.0*	*59.0*	*58.2*	*225*
2009	*55.0*	*62.0*	*63.0*	*60.0*	*240*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun. 30	Sep. 30	Dec. 31	Full Year
2005	d.01	.15	.14	.06	.34
2006	.03	.08	.16	.13	.40
2007	.03	.09	.09	.11	.31E
2008	d.01	*.09*	*.10*	*.12*	*.30*
2009	*.03*	*.11*	*.12*	*.14*	*.40*

Cal-endar	QUARTERLY DIVIDENDS PAID B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.044	.044	.044	.048	.18
2005	.048	.048	.048	.052	.20
2006	.052	.052	.052	.058	.21
2007	.058	.058	.058	.058	.23
2008	.06	.06			

BUSINESS: Southwest Water Company provides a broad range of services including water production, treatment and distribution; wastewater collection and treatment; utility billing and collection; utility infrastructure construction management; and public works services. It operates out of two groups, Utility (43% of 2007 revenues) and Services (57%). Utility owns and manages rate-regulated public water utilities in California, New Mexico, Oklahoma, and Texas. Services does mostly maintenance work on a contract basis. Off. & dir. own 6.4% of com. shs.; Stein Roe Investment Council, 9.2% (4/08 proxy). CEO and Chairman: Mark Swatek. Inc.: DE. Addr.: One Wilshire Building, 624 S. Grand Ave. Ste. 2900, Los Angeles, CA 90017. Tel.: 213-929-1800. Internet: www.swwc.com.

Southwest Water's bottom line hit a dry spell during the first quarter. Indeed, despite revenue growth of nearly 6%, year over year, the company registered a deficit of $0.01 per share. This was due to an increase in SG&A expenses of about $1.8 billion, including $700 million for fees incurred during the pursuit of a failed strategic opportunity, $800 million related to expenses for the Cornerstone Project (discussed below), and $300 million in higher restructuring and business engineering costs. As a result, we have lowered our full-year earnings estimates for both 2008 and 2009 by a dime.

The company is petitioning for higher rates. In the California courts, an increase request of approximately $6.8 million per annum has been submitted for approval. If agreed to, these higher prices would be implemented in January of 2009. Also, in Texas, negotiations are under way to raise rates in Southwest's Monarch subsidiary. Decisions for these cases should occur by the end of 2008. Another possible benefit may be realized in New Mexico, where a proposal was presented to collect wastewater fees through a customer surcharge. If successful, these gains should add to both the top and bottom line out to the 2011–2013 period.

The Cornerstone Project may improve margins in the coming years. As a part of this initiative, the company has installed the *Oracle* software platform to consolidate all its financial accounting functions. Other aspects will be the expanded management reporting capabilities, and the development of a financial services center to centralize some administrative processes. Once the expenses related to this restructuring, which are likely to extend to the latter half of 2009, are eliminated, operating margins should begin to show improvements.

This untimely stock does not hold much appeal at this time. Even though the ongoing restructuring efforts and the possible rate hikes are likely to bolster earnings growth over the next few years, these gains have been discounted in the current quotation. As such, the below-average appreciation potential over the next 3 to 5 years is not very attractive at this juncture.

John D. Burke *July 25, 2008*

(A) Diluted earnings. Excludes nonrecurring gains (losses): '00, (3¢); '01, (5¢); '02, 1¢; '05, (23¢); '07, (54¢). Next earnings report due mid-September.
(B) Dividends historically paid in late January, April, July, and October.
(C) In millions, adjusted for splits.
(D) Includes intangibles. In 2007: $19.9 million, $0.83/share.
(E) Earnings may not add due to rounding.

Company's Financial Strength	B
Stock's Price Stability	55
Price Growth Persistence	70
Earnings Predictability	60

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AQUA AMERICA NYSE-WTR

RECENT PRICE **14.66** | P/E RATIO **17.2** (21.2 / 24.0) | RELATIVE P/E RATIO **1.17** | DIV'D YLD **3.4%** | VALUE LINE

TIMELINESS **5** Lowered 5/16/08
SAFETY **3** Lowered 8/1/03
TECHNICAL **4** Lowered 6/13/08
BETA .95 (1.00 = Market)

High:	8.5	11.5	11.5	12.0	14.8	15.0	16.8	18.5	29.2	29.8	26.6	22.0					
Low:	4.4	7.2	7.6	6.3	9.4	9.6	11.8	14.2	17.5	20.1	18.9	14.5					

2011-13 PROJECTIONS

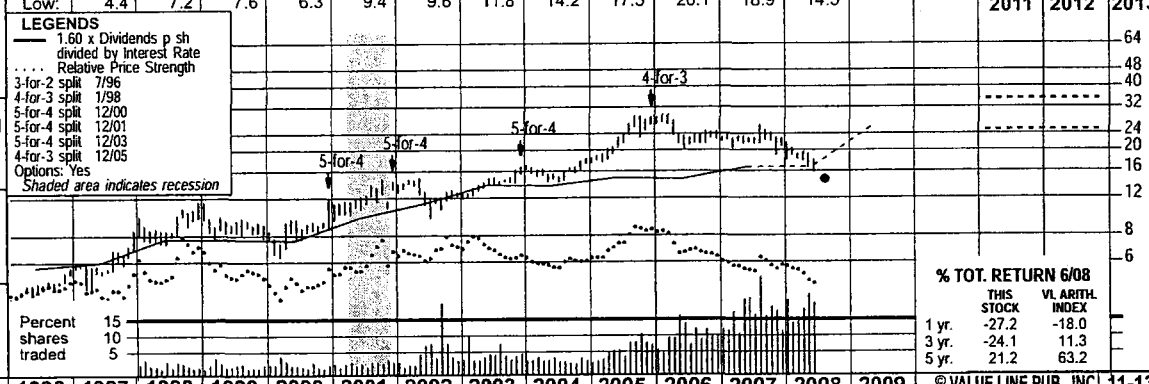
	Price	Gain	Ann'l Total Return
High	35	(+140%)	26%
Low	25	(+70%)	16%

Insider Decisions

	S	O	N	D	J	F	M	A	M
to Buy	0	0	0	0	0	0	0	0	0
Options	2	1	1	0	0	1	0	0	1
to Sell	3	1	1	0	0	0	0	0	1

Institutional Decisions

	3Q2007	4Q2007	1Q2008
to Buy	84	115	99
to Sell	114	88	111
Hld's(000)	55922	59091	62485



% TOT. RETURN 6/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	-27.2	-18.0
3 yr.	-24.1	11.3
5 yr.	21.2	63.2

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
1.82	1.70	1.82	1.84	1.86	2.02	2.09	2.41	2.46	2.70	2.85	2.97	3.48	3.85	4.03	4.52	*4.80*	*5.00*	Revenues per sh	*5.60*
.39	.42	.42	.47	.50	.56	.61	.72	.76	.86	.94	.96	1.09	1.21	1.26	1.37	*1.65*	*1.85*	"Cash Flow" per sh	*2.35*
.24	.24	.26	.29	.30	.34	.40	.42	.47	.51	.54	.57	.64	.71	.70	.71	*.85*	*.95*	Earnings per sh A	*1.20*
.20	.21	.21	.22	.23	.24	.26	.27	.28	.30	.32	.35	.37	.40	.44	.48	*.50*	*.56*	Div'd Decl'd per sh B■	*.68*
.60	.47	.46	.52	.48	.58	.82	.90	1.16	1.09	1.20	1.32	1.54	1.84	2.05	1.79	*1.85*	*1.90*	Cap'l Spending per sh	*2.15*
2.09	2.29	2.41	2.46	2.69	2.84	3.21	3.42	3.85	4.15	4.36	5.34	5.89	6.30	6.96	7.32	*7.70*	*8.20*	Book Value per sh	*10.10*
51.20	59.40	59.77	63.74	65.75	67.47	72.20	106.80	111.82	113.97	113.19	123.45	127.18	128.97	132.33	133.40	*134.50*	*135.50*	Common Shs Outst'g C	*139.00*
12.5	14.4	13.5	12.0	15.6	17.8	22.5	21.2	18.2	23.6	23.6	24.5	25.1	31.8	34.7	32.0	*Bold figures are*		Avg Ann'l P/E Ratio	*25.0*
.76	.85	.89	.80	.98	1.03	1.17	1.21	1.18	1.21	1.29	1.40	1.33	1.69	1.87	1.70	*Value Line*		Relative P/E Ratio	*1.65*
6.8%	5.9%	6.0%	6.2%	4.9%	3.9%	2.9%	3.0%	3.3%	2.5%	2.5%	2.5%	2.3%	1.8%	1.8%	2.1%	*estimates*		Avg Ann'l Div'd Yield	*2.7%*

CAPITAL STRUCTURE as of 3/31/08
Total Debt $1239.0 mill. **Due in 5 Yrs** $207.9 mill.
LT Debt $1215.0 mill. **LT Interest** $65.0 mill.
(LT interest earned: 3.3x; total interest coverage: 3.1x) (55% of Cap'l)

Pension Assets-12/07 $147.8 mill. **Oblig.** $194.5 mill.

Pfd Stock None
Common Stock 133,630,229 shares as of 4/22/08

MARKET CAP: $2.0 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
151.0	257.3	275.5	307.3	322.0	367.2	442.0	496.8	533.5	602.5	*645*	*675*	Revenues ($mill)	*775*
28.8	45.0	50.7	58.5	62.7	67.3	80.0	91.2	92.0	95.0	*115*	*130*	Net Profit ($mill)	*165*
40.5%	38.4%	38.9%	39.3%	38.5%	39.3%	39.4%	38.4%	39.6%	38.9%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
--	--	--	--	--	--	--	--	2.9%	3.1%	*2.5%*	*2.5%*	AFUDC % to Net Profit	*2.0%*
52.7%	52.9%	52.0%	52.2%	54.2%	51.4%	50.0%	52.0%	51.6%	55.4%	*54.5%*	*54.0%*	Long-Term Debt Ratio	*51.0%*
46.6%	46.7%	47.8%	47.7%	45.8%	48.6%	50.0%	48.0%	48.4%	44.6%	*45.5%*	*46.0%*	Common Equity Ratio	*49.0%*
496.6	782.7	901.1	990.4	1076.2	1355.7	1497.3	1690.4	1904.4	2191.4	*2285*	*2410*	Total Capital ($mill)	*2855*
609.8	1135.4	1251.4	1368.1	1490.8	1824.3	2069.8	2280.0	2506.0	2792.8	*2850*	*3000*	Net Plant ($mill)	*3600*
7.6%	7.6%	7.4%	7.8%	7.6%	6.4%	6.7%	6.9%	6.4%	5.9%	*6.5%*	*6.5%*	Return on Total Cap'l	*7.0%*
12.3%	12.2%	11.7%	12.3%	12.7%	10.2%	10.7%	11.2%	10.0%	9.7%	*11.0%*	*11.5%*	Return on Shr. Equity	*12.0%*
12.4%	12.3%	11.7%	12.4%	12.7%	10.2%	10.7%	11.2%	10.0%	9.7%	*11.0%*	*11.5%*	Return on Com Equity	*12.0%*
4.5%	4.3%	4.7%	5.1%	5.2%	4.2%	4.6%	4.9%	3.7%	3.2%	*4.5%*	*5.0%*	Retained to Com Eq	*5.5%*
64%	65%	60%	59%	59%	59%	57%	56%	63%	67%	*61%*	*59%*	All Div'ds to Net Prof	*57%*

CURRENT POSITION ($MILL.)	2006	2007	3/31/08
Cash Assets	44.0	14.5	16.5
Receivables	72.1	82.9	73.7
Inventory (AvgCst)	10.2	8.8	10.2
Other	8.4	9.3	9.7
Current Assets	134.7	115.5	110.1
Accts Payable	49.4	45.8	23.4
Debt Due	150.4	80.8	24.0
Other	55.8	56.6	127.1
Current Liab.	255.6	183.2	174.5
Fix. Chg. Cov.	352%	323%	305%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.0%	9.0%	*5.0%*
"Cash Flow"	9.5%	8.5%	*10.5%*
Earnings	8.5%	7.0%	*9.0%*
Dividends	7.0%	7.5%	*7.5%*
Book Value	10.0%	10.5%	*6.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	114.0	123.1	136.8	122.9	496.8
2006	117.9	131.7	147.0	136.9	533.5
2007	137.3	150.6	165.5	149.1	602.5
2008	139.3	*165*	*185*	*155.7*	*645*
2009	*145*	*175*	*195*	*160*	*675*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.15	.17	.22	.17	.71
2006	.13	.17	.21	.19	.70
2007	.13	.17	.22	.19	.71
2008	.11	*.22*	*.28*	*.24*	*.85*
2009	*.16*	*.25*	*.26*	*.28*	*.95*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.09	.09	.09	.098	.37
2005	.098	.098	.098	.107	.40
2006	.107	.107	.115	.115	.44
2007	.115	.115	.125	.125	.48
2008	.125	.125			

BUSINESS: Aqua America, Inc. is the holding company for water and wastewater utilities that serve approximately 2.8 million residents in Pennsylvania, Ohio, North Carolina, Illinois, Texas, New Jersey, Florida, Indiana, and five other states. Divested three of four non-water businesses in '91; telemarketing group in '93; and others. Acquired AquaSource, 7/03; Consumers Water, 4/99; and others. Water supply revenues '07: residential, 60%; commercial, 14%; industrial & other, 26%. Officers and directors own 1.4% of the common stock (4/08 Proxy). Chairman & Chief Executive Officer: Nicholas DeBenedictis. Incorporated: Pennsylvania. Address: 762 West Lancaster Avenue, Bryn Mawr, Pennsylvania 19010. Telephone: 610-525-1400. Internet: www.aquaamerica.com.

Aqua America Inc. began the year on a weak note. Even though revenues grew slightly year over year, the bottom line dropped about 15%. A reduction in housing starts dampened the rate of customer growth, increased foreclosures have lowered revenue contributions from these consumers, and higher fuel costs hurt margins during the March interim. Also, the recent loss of customers from the land seized by the government of Fort Wayne, Indiana (under the eminent domain doctrine) has already begun to cut into profits, and will likely hinder growth until late 2009.

The company may be able to gain some momentum in the latter half of the year. A factor that will probably benefit the top and bottom lines are the 17 rate cases that are in varied stages of regulatory processes. These price increase requests should be decided by the end of the year, and can add upwards of $65 million per annum to revenues. It should also be noted that some of these cases are for "rate-relief", which would yield higher price increases to offset the capital investments and rising costs that have been accrued during the integration period. Also, Aqua will likely sell an undisclosed franchise for approximately $10 million late in the third or fourth quarter.

Aqua America has acquired a waste-water and irrigation system in Florida. This will expand the company's customer base with the 4,000 residents of the Fountain Lakes development in Lee County serviced by these systems. The waste-water assets will be run as a regulated utility, subject to rate-increase petitions. Over the next few years, about $400,000 in capital expenditures will be spent to improve and integrate these systems. Further acquisitions are likely to be made during the year, but management has stated that its focus will shift towards making larger, fewer purchases.

These untimely shares may be best suited for patient investors. Although the recent difficulties have hampered its short term appeal, Aqua is establishing and improving facilities in strong locations, which should bolster earnings growth and enhance its appreciation potential over the coming 3 to 5 years.

John D. Burke *July 25, 2008*

(A) Primary shares outstanding through '96; diluted thereafter. Excl. nonrec. gains (losses): '92, (38¢); '99, (11¢); '00, 2¢; '01, 2¢; '02, 5¢; '03, 4¢. Excl. gain from disc. operations: '96, 2¢. May not sum due to rounding. Next earnings report due early August.
(B) Dividends historically paid in early March, June, Sept. & Dec. ■ Div'd. reinvestment plan available (5% discount).
(C) In millions, adjusted for stock splits.

Company's Financial Strength	B+
Stock's Price Stability	90
Price Growth Persistence	80
Earnings Predictability	100

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ATTACHMENT B

INDUSTRY TIMELINESS: 56 (of 99)

The Natural Gas Utility Industry continues to operate in a tough environment. Warmer-than-normal weather, a sluggish domestic economy, and a challenging regulatory climate are all impacting this sector's performance. This group has remained resilient, though, by developing new opportunities to drive growth. Still, prospects for these utilities are unimpressive. Therefore, most investors will probably want to look elsewhere.

A Weak Economy

The ongoing weakness in the domestic economy has added pressure to an already challenging operating environment in this industry. Most notably, the struggling housing market has hurt results across this group. Customers have become more cost conscious and, as a result, usage is down at many of these companies. The tough times have also made bill collection harder due to weakness in household income. All told, these factors will probably continue to weigh on these stocks in the foreseeable future.

Climate Changes

Warmer-than-expected weather has also been a drag on results of late. Unseasonable conditions create volatility for these utilities. Warm weather can cause customer usage to drop, which pressures earnings. It also affects the predictable growth these companies usually enjoy. To address this, an increasing number of utilities are using weather-adjusted rate mechanisms, which stabilize results when there is volatility. As such, investors looking for companies with more stable results may want to consider stocks that have a rate mechanism. Despite weather-related factors, we still assume results will improve over the coming six months when the heating season should peak.

Regulation

The players in this industry are regulated by their respective state commissions, which determine the return on equity these utilities can achieve. Many of the companies in this sector have insufficient relief. This has caused the sector's infrastructure to age and profitability to diminish. Numerous utilities, such as *Southwest Gas*, *Nicor*, and *New Jersey Resources*, have cases pending. A positive or negative ruling in these decisions can drive a particular stock's performance. The state commissions try to strike a balance between consumer and shareholder interest. However, numerous companies are operating with a tight budget of late. As a result, many shareholders feel they are not getting their fair share. In brief, these cases remain a key factor in this industry's performance.

Business Strategy

In light of the ongoing challenges in this sector, many companies have sought other opportunities to drive growth. These utilities have been able to weather some of the aforementioned challenges by diversifying their revenue base. Nonregulated ventures have been a popular choice to accomplish this goal. These operations are not regulated by the state commissions and add flexibility to these otherwise stable businesses. These opportunities currently make up a small part of the industry's performance. However, they will probably be an increasingly more common means to drive profitability. Moreover, companies have been expanding their regulated operations in an effort to drive growth. New facilities and added pipelines are examples of some of the ways these utilities have ramped up their capabilities. Others have looked to acquisitions. Indeed, the Natural Gas Utility Industry has experienced some consolidation over the past year. This allows companies to expand their business via a mature operation. Another opportunity some of the companies have been pursuing is conservation. Some governments offer these programs to help utilities embrace sector trends without damaging their bottom line.

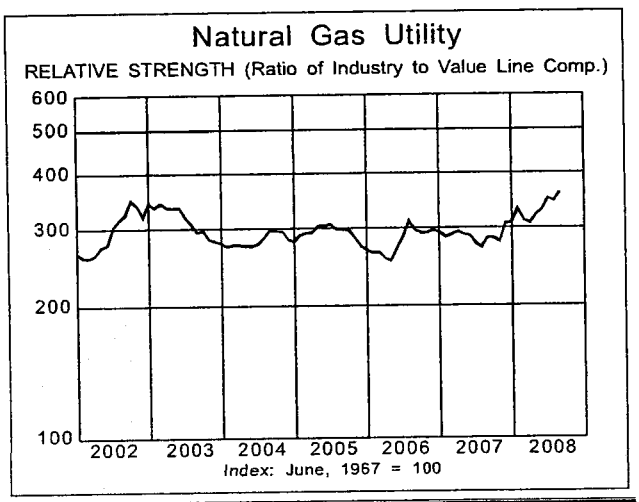
Investment Advice

The Natural Gas Industry is ranked near the middle of our industry spectrum for Timeliness. Most of the companies here offer uninspiring prospects in the year ahead. What's more, the long-term picture is not much better. However, many of these stocks offer attractive dividend yields. In fact, the average yield for this group (3.7%) is well above the *Value Line* median (2.2%). Thus, conservative accounts may be enticed by some of these stocks for their solid businesses and attractive yields. Interested investors should look for utilities with a favorable regulatory environment, as these issues are more likely to post gains over the coming years. Still, we recommend most investors look elsewhere given the limited growth potential in this sector.

Richard Gallagher

Composite Statistics: Natural Gas Utility

2004	2005	2006	2007	2008	2009		11-13
21683	28176	30783	30588	*32000*	*34000*	Revenues ($mill)	*40500*
908.1	1087.3	1218.7	1250.4	*1325*	*1400*	Net Profit ($mill)	*1650*
36.4%	36.7%	35.4%	33.5%	*36.0%*	*36.0%*	Income Tax Rate	*36.0%*
4.2%	3.9%	4.0%	4.1%	*4.1%*	*4.1%*	Net Profit Margin	*4.1%*
50.9%	51.3%	51.5%	49.5%	*51.0%*	*51.0%*	Long-Term Debt Ratio	*52.0%*
48.9%	48.6%	48.4%	50.4%	*48.0%*	*48.0%*	Common Equity Ratio	*46.0%*
16806	18933	20687	21592	*22500*	*24000*	Total Capital ($mill)	*27500*
18979	21340	22849	23904	*25250*	*26500*	Net Plant ($mill)	*40000*
6.9%	7.5%	7.5%	7.4%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.0%*
11.0%	11.8%	12.2%	11.5%	*11.0%*	*11.5%*	Return on Shr. Equity	*12.0%*
11.0%	11.8%	12.2%	11.5%	*11.0%*	*11.5%*	Return on Com Equity	*12.0%*
4.3%	4.9%	5.4%	4.9%	*5.3%*	*5.5%*	Retained to Com Eq	*6.0%*
61%	59%	55%	57%	*60%*	*60%*	All Div'ds to Net Prof	*60%*
15.5	15.9	14.7	16.1	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.0*
.82	.85	.79	.85			Relative P/E Ratio	*.85*
3.9%	3.7%	3.8%	3.6%			Avg Ann'l Div'd Yield	*4.6%*
359%	371%	381%	397%	*375%*	*375%*	Fixed Charge Coverage	*400%*



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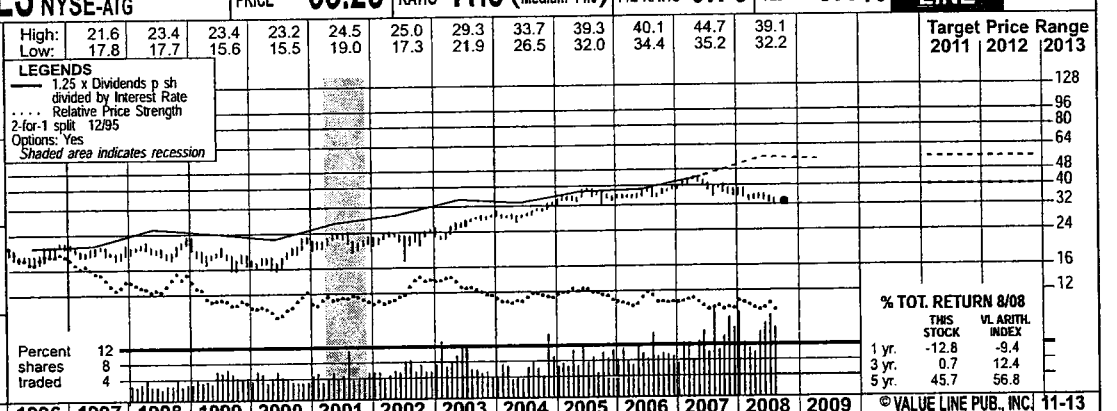
AGL RESOURCES NYSE-ATG

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
33.23	11.9	(Trailing: 16.3 Median: 14.0)	0.76	5.1%	VALUE LINE

TIMELINESS 4 Lowered 5/9/08
SAFETY 2 New 7/27/90
TECHNICAL 3 Raised 12/21/07
BETA .85 (1.00 = Market)

High:	21.6	23.4	23.4	23.2	24.5	25.0	29.3	33.7	39.3	40.1	44.7	39.1
Low:	17.8	17.7	15.6	15.5	19.0	17.3	21.9	26.5	32.0	34.4	35.2	32.2

Target Price Range 2011 | 2012 | 2013



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+65%)	17%
Low	40	(+20%)	9%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	3	2	1	0	3	0
to Sell	0	0	0	0	1	0	0	2	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	128	105	131
to Sell	99	127	106
Hld's(000)	47469	47696	46762

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	-12.8	-9.4
3 yr.	0.7	12.4
5 yr.	45.7	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
20.43	22.73	23.59	19.32	21.91	22.75	23.36	18.71	11.25	19.04	15.32	15.25	23.89	34.98	33.73	32.64	*34.10*	*35.25*	Revenues per sh A	*40.65*
2.31	2.25	2.24	2.33	2.49	2.42	2.65	2.29	2.86	3.31	3.39	3.47	3.29	4.20	4.50	4.64	*4.70*	*4.80*	"Cash Flow" per sh	*5.40*
1.13	1.08	1.17	1.33	1.37	1.37	1.41	.91	1.29	1.50	1.82	2.08	2.28	2.48	2.72	2.72	*2.75*	*2.85*	Earnings per sh A B	*3.15*
1.03	1.04	1.04	1.04	1.06	1.08	1.08	1.08	1.08	1.08	1.08	1.11	1.15	1.30	1.48	1.64	*1.68*	*1.72*	Div'ds Decl'd per sh C■	*1.84*
2.74	2.49	2.37	2.17	2.37	2.59	2.05	2.51	2.92	2.83	3.30	2.46	3.44	3.44	3.26	3.39	*4.00*	*4.25*	Cap'l Spending per sh	*4.00*
9.70	9.90	10.19	10.12	10.56	10.99	11.42	11.59	11.50	12.19	12.52	14.66	18.06	19.29	20.71	21.74	*22.10*	*22.45*	Book Value per sh D	*22.50*
48.69	49.72	50.86	55.02	55.70	56.60	57.30	57.10	54.00	55.10	56.70	64.50	76.70	77.70	77.70	76.40	*77.00*	*78.00*	Common Shs Outst'g E	*80.00*
15.5	17.9	15.1	12.6	13.8	14.7	13.9	21.4	13.6	14.6	12.5	12.5	13.1	14.3	13.5	14.7	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.94	1.06	.99	.84	.86	.85	.72	1.22	.88	.75	.68	.71	.69	.76	.73	.78	*Value Line*		Relative P/E Ratio	*1.00*
5.9%	5.4%	5.9%	6.2%	5.6%	5.4%	5.5%	5.5%	6.2%	4.9%	4.7%	4.3%	3.9%	3.7%	4.0%	4.1%	*estimates*		Avg Ann'l Div'd Yield	*3.9%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $2150.0 mill. **Due in 5 Yrs** $830.0 mill.
LT Debt $1637.0 mill. **LT Interest** $85.0 mill.

(Total interest coverage: 3.0x)
Leases, Uncapitalized Annual rentals $26.0 mill.

Pension Assets-12/07 $383.0 mill. **Oblig.** $427.0 mill.

Pfd Stock None
Common Stock 76,671,051 shs. as of 7/22/08

MARKET CAP: $2.5 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
1338.6	1068.6	607.4	1049.3	868.9	983.7	1832.0	2718.0	2621.0	2494.0	*2625*	*2750*	Revenues ($mill) A	*3250*
80.6	52.1	71.1	82.3	103.0	132.4	153.0	193.0	212.0	210.5	*210*	*220*	Net Profit ($mill)	*250*
32.5%	33.1%	34.3%	40.7%	36.0%	35.9%	37.0%	37.7%	37.8%	37.6%	*38.0%*	*38.0%*	Income Tax Rate	*38.0%*
6.0%	4.9%	11.7%	7.8%	11.9%	13.5%	8.4%	7.1%	8.1%	8.4%	*8.0%*	*8.0%*	Net Profit Margin	*7.7%*
47.5%	45.3%	45.9%	61.3%	58.3%	50.3%	54.0%	51.9%	50.2%	50.2%	*49.0%*	*48.5%*	Long-Term Debt Ratio	*45.5%*
47.1%	49.2%	48.3%	38.7%	41.7%	49.7%	46.0%	48.1%	49.8%	49.8%	*51.0%*	*51.5%*	Common Equity Ratio	*54.5%*
1388.4	1345.8	1286.2	1736.3	1704.3	1901.4	3008.0	3114.0	3231.0	3335.0	*3335*	*3385*	Total Capital ($mill)	*3300*
1534.0	1598.9	1637.5	2058.9	2194.2	2352.4	3178.0	3271.0	3436.0	3566.0	*3700*	*3800*	Net Plant ($mill)	*4150*
7.6%	5.7%	7.4%	6.5%	8.1%	8.9%	6.3%	7.9%	8.0%	7.7%	*7.5%*	*8.0%*	Return on Total Cap'l	*9.0%*
11.1%	7.1%	10.2%	12.3%	14.5%	14.0%	11.0%	12.9%	13.2%	12.7%	*12.5%*	*12.5%*	Return on Shr. Equity	*14.0%*
12.3%	7.9%	11.5%	12.3%	14.5%	14.0%	11.0%	12.9%	13.2%	12.7%	*12.5%*	*12.5%*	Return on Com Equity	*14.0%*
4.4%	NMF	3.2%	4.2%	7.0%	6.6%	5.6%	6.2%	6.3%	5.3%	*4.5%*	*5.0%*	Retained to Com Eq	*5.5%*
64%	101%	72%	65%	52%	53%	49%	52%	52%	58%	*62%*	*61%*	All Div'ds to Net Prof	*59%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	20.0	21.0	19.0
Other	1802.0	1790.0	2024.0
Current Assets	1822.0	1811.0	2043.0
Accts Payable	213.0	172.0	158.0
Debt Due	539.0	580.0	513.0
Other	875.0	893.0	1308.0
Current Liab.	1627.0	1645.0	1979.0
Fix. Chg. Cov.	397%	391%	316%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	3.5%	13.5%	*3.0%*
"Cash Flow"	5.5%	7.0%	*3.5%*
Earnings	7.0%	15.0%	*3.0%*
Dividends	2.5%	4.0%	*4.0%*
Book Value	6.5%	10.5%	*1.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	908	430	387	993	2718
2006	1044	436	434	707	2621
2007	973	467	369	685	2494
2008	1012	444	*410*	*759*	*2625*
2009	*1030*	*480*	*440*	*800*	*2750*

Cal-endar	EARNINGS PER SHARE B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	1.14	.30	.19	.85	2.48
2006	1.41	.25	.46	.60	2.72
2007	1.29	.40	.17	.86	2.72
2008	1.16	.30	*.35*	*.94*	*2.75*
2009	*1.20*	*.35*	*.35*	*.95*	*2.85*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.28	.29	.29	.29	1.15
2005	.31	.31	.31	.37	1.30
2006	.37	.37	.37	.37	1.48
2007	.41	.41	.41	.41	1.64
2008	.42	.42	.42		

BUSINESS: AGL Resources, Inc. is a public utility holding company. Its distribution subsidiaries include Atlanta Gas Light, Chattanooga Gas, and Virginia Natural Gas. The utilities have more than 2.2 million customers in Georgia, Virginia, Tennessee, New Jersey, Florida, and Maryland. Engaged in nonregulated natural gas marketing and other allied services. Also wholesales and retails propane. Deregulated subsidiaries: Georgia Natural Gas markets natural gas at retail. Sold Utilipro, 3/01. Acquired Compass Energy Services, 10/07. Officers/directors own less than 1.0% of common (3/08 Proxy). Pres. & CEO: John W. Somerhalder II. Inc.: GA. Addr.: Ten Peachtree Place N.E., Atlanta, GA 30309. Telephone: 404-584-4000. Internet: www.aglresources.com.

AGL Resources' performance has been unimpressive lately. The company's Distribution Operations reported a moderate decline in operating earnings in the most recent period. Customer growth has slowed in this business, partly due to weakness in the real estate market. Elsewhere, the Wholesale Services segment posted an operating loss of $65 million. This was largely a result of a hedging loss of $55 million ($0.45 per share) due to a significant run-up in forward natural gas prices and widening transportation basis spreads. (In keeping with *Value Line* convention, we are excluding this nonrecurring charge from our presentation). On the bright side, dramatic growth in operating income at the Energy Investments business provided some support. This unit benefited from greater contributions from an expansion project at AGL Networks and higher revenues at Jefferson Island Storage & Hub.

We anticipate moderate top-line growth for full-year 2008. The company has reaffirmed its share-earnings guidance of $2.75-$2.85 for the current year. Our estimate remains at the low end of this range, just above the prior year's tally. This assumes normal weather patterns and average volatility for gas prices in the coming months.

The company continues to make progress on the Hampton Roads Crossing Project (located in Virginia). This initiative will connect two pipeline systems crossing the Hampton Roads harbor, and provide for an ample supply of natural gas to the region. The project will likely be completed in the fourth quarter of 2009, and should generate solid returns for the company thereafter.

The stock is untimely. Patient investors may want to give AGL Resources another look. The shares earn high marks for Safety, Price Stability, and Earnings Predictability. In addition, the stock's healthy dividend yield may appeal to income-seeking investors. The payout may be raised regularly, too, provided earnings growth comes in as forecast. Moreover, we project steady bottom-line growth at the company from 2009 to 2011-2013. Overall, the shares offer attractive total return potential for a utility.

Michael Napoli, CPA *September 12, 2008*

(A) Fiscal year ends December 31st. Ended September 30th prior to 2002.
(B) Diluted earnings per share. Excl. nonrecurring gains (losses): '95, ($0.83); '99, $0.39; '00, $0.13; '01, $0.13; '03, ($0.07); '08, ($0.45). Next earnings report due late October/early November. (C) Dividends historically paid early March, June, Sept., and Dec. ■ Div'd reinvest. plan available. (D) Includes intangibles. At 6/30/08: $420 million, $5.48/share.
(E) In millions, adjusted for stock split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	75

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ATMOS ENERGY CORP. NYSE-ATO

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
27.50	13.0	(Trailing: 14.2 Median: 16.0)	0.83	4.8%	VALUE LINE

TIMELINESS 3 Raised 1/25/08
SAFETY 2 Raised 12/16/05
TECHNICAL 3 Lowered 7/11/08
BETA .80 (1.00 = Market)

High:	30.5	32.3	33.0	26.3	25.8	24.5	25.5	27.6	30.0	33.1	33.5	29.3
Low:	22.1	24.8	19.6	14.3	19.5	17.6	20.8	23.4	25.0	25.5	23.9	25.0

Target Price Range 2011 | 2012 | 2013

2011-13 PROJECTIONS

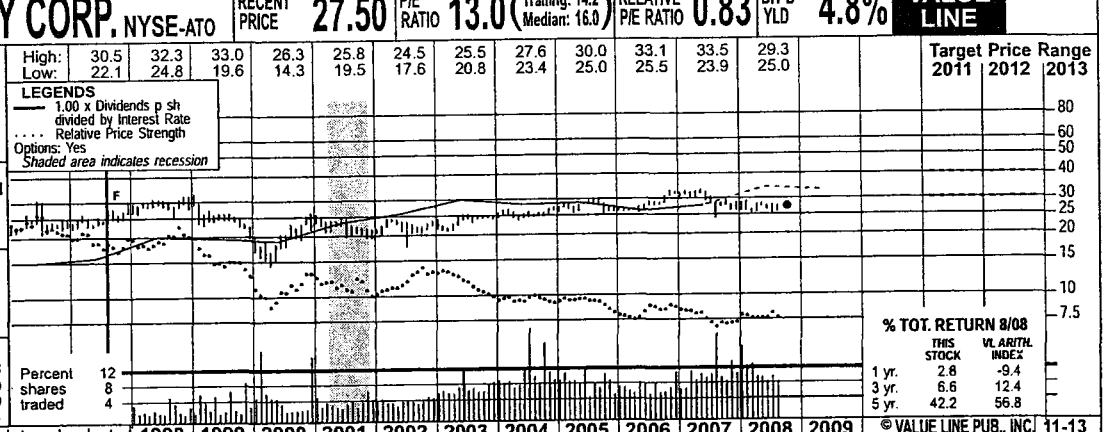
	Price	Gain	Ann'l Total Return
High	40	(+45%)	13%
Low	30	(+10%)	6%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	2	2	0	0	1	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	3	0	0	0	0	0	0	3

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	113	112	119
to Sell	104	103	89
Hld's(000)	59007	58504	58318



% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	2.8	-9.4
3 yr.	6.6	12.4
5 yr.	42.2	56.8

Atmos Energy's history dates back to 1906 in the Texas Panhandle. Over the years, through various mergers, it became part of Pioneer Corporation, and, in 1981, Pioneer named its gas distribution division Energas. In 1983, Pioneer organized Energas as a separate subsidiary and distributed the outstanding shares of Energas to Pioneer shareholders. Energas changed its name to Atmos in 1988. Atmos acquired Trans Louisiana Gas in 1986, Western Kentucky Gas Utility in 1987, Greeley Gas in 1993, United Cities Gas in 1997, and others.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
27.90	22.09	26.61	35.36	22.82	54.39	46.50	61.75	75.27	66.03	*78.90*	*83.15*	Revenues per sh A	*89.55*
3.38	2.62	3.01	3.03	3.39	3.23	2.91	3.90	4.26	4.14	*4.20*	*4.30*	"Cash Flow" per sh	*4.65*
1.84	.81	1.03	1.47	1.45	1.71	1.58	1.72	2.00	1.94	*1.98*	*2.10*	Earnings per sh A B	*2.45*
1.06	1.10	1.14	1.16	1.18	1.20	1.22	1.24	1.26	1.28	*1.30*	*1.32*	Div'ds Decl'd per sh C■	*1.40*
4.44	3.53	2.36	2.77	3.17	3.10	3.03	4.14	5.20	4.39	*5.05*	*5.20*	Cap'l Spending per sh	*6.20*
12.21	12.09	12.28	14.31	13.75	16.66	18.05	19.90	20.16	22.01	*23.65*	*24.10*	Book Value per sh	*25.55*
30.40	31.25	31.95	40.79	41.68	51.48	62.80	80.54	81.74	89.33	*91.00*	*95.00*	Common Shs Outst'g D	*115.00*
15.4	33.0	18.9	15.6	15.2	13.4	15.9	16.1	13.5	15.9	*Bold figures are*		Avg Ann'l P/E Ratio	*14.5*
.80	1.88	1.23	.80	.83	.76	.84	.86	.73	.83	*Value Line*		Relative P/E Ratio	*.95*
3.7%	4.1%	5.9%	5.1%	5.4%	5.2%	4.9%	4.5%	4.7%	4.2%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*
848.2	690.2	850.2	1442.3	950.8	2799.9	2920.0	4973.3	6152.4	5898.4	*7180*	*7900*	Revenues ($mill) A	*10300*
55.3	25.0	32.2	56.1	59.7	79.5	86.2	135.8	162.3	170.5	*180*	*200*	Net Profit ($mill)	*280*
36.5%	35.0%	36.1%	37.3%	37.1%	37.1%	37.4%	37.7%	37.6%	35.8%	*36.0%*	*36.5%*	Income Tax Rate	*38.0%*
6.5%	3.6%	3.8%	3.9%	6.3%	2.8%	3.0%	2.7%	2.6%	2.9%	*2.5%*	*2.5%*	Net Profit Margin	*3.0%*
51.8%	50.0%	48.1%	54.3%	53.9%	50.2%	43.2%	57.7%	57.0%	52.0%	*50.0%*	*50.0%*	Long-Term Debt Ratio	*51.0%*
48.2%	50.0%	51.9%	45.7%	46.1%	49.8%	56.8%	42.3%	43.0%	48.0%	*50.0%*	*50.0%*	Common Equity Ratio	*49.0%*
769.7	755.1	755.7	1276.3	1243.7	1721.4	1994.8	3785.5	3828.5	4092.1	*4300*	*4580*	Total Capital ($mill)	*6000*
917.9	965.8	982.3	1335.4	1300.3	1516.0	1722.5	3374.4	3629.2	3836.8	*4050*	*4270*	Net Plant ($mill)	*5700*
9.0%	5.1%	6.5%	5.9%	6.8%	6.2%	5.8%	5.3%	6.1%	5.9%	*5.5%*	*6.0%*	Return on Total Cap'l	*6.0%*
14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	9.8%	8.7%	*8.5%*	*8.5%*	Return on Shr. Equity	*9.5%*
14.9%	6.6%	8.2%	9.6%	10.4%	9.3%	7.6%	8.5%	9.8%	8.7%	*8.5%*	*8.5%*	Return on Com Equity	*9.5%*
6.3%	NMF	NMF	2.1%	1.9%	2.8%	1.7%	2.3%	3.6%	3.0%	*3.0%*	*3.5%*	Retained to Com Eq	*4.0%*
58%	NMF	112%	79%	82%	70%	77%	73%	63%	65%	*66%*	*63%*	All Div'ds to Net Prof	*58%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $2234.0 mill. **Due in 5 Yrs** $920.0 mill.
LT Debt $2119.7 mill. **LT Interest** $125.0 mill.
(LT interest earned: 2.9x; total interest coverage: 2.8x)
Leases, Uncapitalized Annual rentals $16.9 mill.
Pfd Stock None
Pension Assets-9/07 $389.1 mill. **Oblig.** $335.6 mill.
Common Stock 90,627,522 shs. as of 7/31/08
MARKET CAP: $2.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	75.8	60.7	46.5
Other	1041.7	1008.2	1350.5
Current Assets	1117.5	1068.9	1397.0
Accts Payable	345.1	355.3	582.4
Debt Due	385.6	154.4	114.3
Other	388.5	410.0	472.1
Current Liab.	1119.2	919.7	1168.8
Fix. Chg. Cov.	408%	405%	410%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.5%	19.0%	5.0%
"Cash Flow"	4.0%	5.5%	2.0%
Earnings	3.5%	7.5%	4.5%
Dividends	2.5%	1.5%	2.0%
Book Value	7.0%	9.0%	3.5%

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	1371.0	1687.8	909.9	1004.6	4973.3
2006	2283.8	2033.8	863.2	971.6	6152.4
2007	1602.6	2075.6	1218.2	1002.0	5898.4
2008	1657.5	2484.0	1639.1	*1399.4*	*7180*
2009	*1830*	*2900*	*1710*	*1460*	*7900*

Fiscal Year Ends	EARNINGS PER SHARE A B E Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.79	1.11	.06	d.21	1.72
2006	.88	1.10	d.22	.25	2.00
2007	.97	1.20	d.15	d.05	1.94
2008	.82	1.24	d.07	*d.01*	*1.98*
2009	*.90*	*1.30*	*d.06*	*d.04*	*2.10*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.305	.305	.305	.31	1.23
2005	.31	.31	.31	.315	1.25
2006	.315	.315	.315	.32	1.27
2007	.32	.32	.32	.325	1.29
2008	.325	.325	.325		

BUSINESS: Atmos Energy Corporation is engaged primarily in the distribution and sale of natural gas to 3.2 million customers via six regulated natural gas utility operations: Louisiana Division, West Texas Division, Mid-Tex Division, Mississippi Division, Colorado-Kansas Division, and Kentucky/Mid-States Division. Combined 2007 gas volumes: 297 MMcf. Breakdown: 56%, residential; 32%, commercial; 8%, industrial; and 4% other. 2007 depreciation rate 3.7%. Has around 4,470 employees. Officers and directors own approximately 1.8% of common stock (12/07 Proxy). Chairman and Chief Executive Officer: Robert W. Best. Incorporated: Texas. Address: P.O. Box 650205, Dallas, Texas 75265. Telephone: 972-934-9227. Internet: www.atmosenergy.com.

Atmos Energy's natural gas utility and regulated transmission and storage operations are posting good results in fiscal 2008 (ends September 30th). The former division, which accounts for the biggest portion of profits, is benefiting greatly from higher rates in the Texas, Louisiana, Tennessee, Kansas, and Kentucky service areas. Meanwhile, the performance of the regulated transmission and storage segment is enjoying a jump in throughput, reflecting increased production in the Barnett Shale region of Texas, plus higher per-unit margins due to greater demand.

But profits for the nonregulated marketing segment are substantially lower, as less volatility in natural gas prices is squeezing margins. That being the case,

Share net may advance only modestly, to $1.98, this fiscal year. The bottom line stands to increase at a somewhat stronger 6% rate, to $2.10 a share, in fiscal 2009. That's based partly on our assumption that the nonregulated marketing unit perks up.

We anticipate steady, though unexciting, annual earnings growth over the 2011-2013 time frame. The utility division does not depend on the business climate in any one region of the country, given that it currently provides services in 12 states. Furthermore, the unregulated segments seem to possess healthy overall prospects. Lastly, management should continue to implement its successful strategy of purchasing less-efficient utilities and shoring up their profitability via expense-reduction efforts, rate relief, and aggressive marketing initiatives. (Future acquisitions are not included in our figures, however.) In the present corporate configuration, annual share-net gains ought to be in the mid-single-digit range over the 3- to 5-year horizon.

The good-quality stock offers an appealing dividend yield. Additional moderate increases in the distribution are likely, as well. Earnings coverage should remain adequate.

On a risk-adjusted basis, total-return possibilities appear promising. But Atmos shares are just an average selection for Timeliness.

Frederick L. Harris, III September 12, 2008

(A) Fiscal year ends Sept. 30th. (B) Diluted shrs. Excl. nonrec. items: '99, d23¢; '00, 12¢; '03, d17¢; '06, d18¢; '07, d2¢. Next egs. rpt. due early Nov. (C) Dividends historically paid in early March, June, Sept., and Dec. ■ Div. reinvestment plan. Direct stock purchase plan avail. (D) In millions. (E) Qtrs may not add due to change in shrs outstanding. (F) ATO completed United Cities merger 7/97.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	35
Earnings Predictability	80

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LACLEDE GROUP NYSE-LG

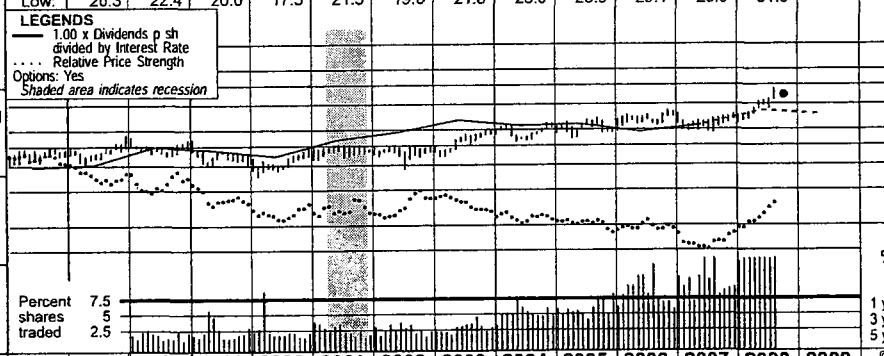
RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD	
44.68	17.9	(Trailing: 15.8 Median: 15.0)	1.15	3.4%	VALUE LINE

TIMELINESS 3 Raised 9/14/07
SAFETY 2 Raised 6/20/03
TECHNICAL 3 Lowered 9/5/08
BETA .80 (1.00 = Market)

High:	28.6	27.9	27.0	24.8	25.5	25.0	30.0	32.5	34.3	37.5	36.0	48.0
Low:	20.3	22.4	20.0	17.5	21.3	19.0	21.8	26.0	26.9	29.1	28.8	31.9

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	55	(+25%)	8%
Low	40	(-10%)	1%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	1	0	0	0	0	0	0
Options	0	0	1	0	0	1	0	9	0
to Sell	0	0	1	0	0	1	0	9	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	64	72	97
to Sell	51	55	50
Hld's(000)	9951	10492	11750

Percent shares traded 7.5 5 2.5

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	43.7	-9.4
3 yr.	58.6	12.4
5 yr.	105.5	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
26.83	32.33	33.43	24.79	31.03	34.33	31.04	26.04	29.99	53.08	39.84	54.95	59.59	75.43	93.51	93.40	*95.70*	*91.55*	Revenues per sh	*107.85*
2.32	2.81	2.65	2.55	3.29	3.32	3.02	2.56	2.68	3.00	2.56	3.15	2.79	2.98	3.81	3.87	*4.50*	*4.45*	"Cash Flow" per sh	*5.30*
1.17	1.61	1.42	1.27	1.87	1.84	1.58	1.47	1.37	1.61	1.18	1.82	1.82	1.90	2.37	2.31	*2.75*	*2.50*	Earnings per sh A B	*2.85*
1.20	1.22	1.22	1.24	1.26	1.30	1.32	1.34	1.34	1.34	1.34	1.34	1.35	1.37	1.40	1.45	*1.49*	*1.53*	Div'ds Decl'd per sh C■	*1.65*
2.87	2.62	2.50	2.63	2.35	2.44	2.68	2.58	2.77	2.51	2.80	2.67	2.45	2.84	2.97	2.72	*2.75*	*2.85*	Cap'l Spending per sh	*3.70*
11.79	12.19	12.44	13.05	13.72	14.26	14.57	14.96	14.99	15.26	15.07	15.65	16.96	17.31	18.85	19.79	*23.00*	*22.55*	Book Value per sh D	*26.00*
15.59	15.59	15.67	17.42	17.56	17.56	17.63	18.88	18.88	18.88	18.96	19.11	20.98	21.17	21.36	21.65	*22.00*	*22.50*	Common Shs Outst'g E	*25.50*
15.8	13.5	16.4	15.5	11.9	12.5	15.5	15.8	14.9	14.5	20.0	13.6	15.7	16.2	13.6	14.2	*Bold figures are*		Avg Ann'l P/E Ratio	*16.5*
.96	.80	1.08	1.04	.75	.72	.81	.90	.97	.74	1.09	.78	.83	.86	.73	.75	*Value Line*		Relative P/E Ratio	*1.10*
6.5%	5.6%	5.3%	6.3%	5.6%	5.6%	5.4%	5.8%	6.6%	5.7%	5.7%	5.4%	4.7%	4.4%	4.3%	4.4%	*estimates*		Avg Ann'l Div'd Yield	*3.5%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $368.0 mill. **Due in 5 Yrs** $275.0 mill.
LT Debt $309.2 mill. **LT Interest** $20.0 mill.
(Total interest coverage: 3.0x)

Leases, Uncapitalized Annual rentals $.9 mill.
Pension Assets-9/07 $260.3 mill. **Oblig.** $293.3 mill.
Pfd Stock $.5 mill. **Pfd Div'd** $.04 mill.
Common Stock 21,971,760 shs. as of 8/5/08

MARKET CAP: $975 million (Small Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
547.2	491.6	566.1	1002.1	755.2	1050.3	1250.3	1597.0	1997.6	2021.6	*2105*	*2060*	Revenues ($mill) A	*2750*
27.9	26.9	26.0	30.5	22.4	34.6	36.1	40.1	50.5	49.8	*60.5*	*56.5*	Net Profit ($mill)	*75.0*
35.6%	35.5%	35.2%	32.7%	35.4%	35.0%	34.8%	34.1%	32.5%	33.4%	*33.5%*	*34.0%*	Income Tax Rate	*36.0%*
5.1%	5.5%	4.6%	3.0%	3.0%	3.3%	2.9%	2.5%	2.5%	2.5%	*2.9%*	*2.7%*	Net Profit Margin	*2.7%*
40.9%	41.8%	45.2%	49.5%	47.5%	50.4%	51.6%	48.1%	49.5%	45.3%	*39.0%*	*42.0%*	Long-Term Debt Ratio	*47.0%*
58.6%	57.8%	54.5%	50.2%	52.3%	49.4%	48.3%	51.8%	50.4%	54.6%	*61.0%*	*58.0%*	Common Equity Ratio	*53.0%*
438.0	488.6	519.2	574.1	546.6	605.0	737.4	707.9	798.9	784.5	*830*	*875*	Total Capital ($mill)	*1250*
490.6	519.4	575.4	602.5	594.4	621.2	646.9	679.5	763.8	793.8	*825*	*855*	Net Plant ($mill)	*1150*
8.1%	7.1%	6.7%	6.9%	6.0%	7.4%	6.6%	7.6%	8.4%	8.5%	*8.5%*	*7.5%*	Return on Total Cap'l	*7.5%*
10.8%	9.5%	9.1%	10.5%	7.8%	11.5%	10.1%	10.9%	12.5%	11.6%	*12.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
10.8%	9.5%	9.1%	10.5%	7.8%	11.6%	10.1%	10.9%	12.5%	11.6%	*12.0%*	*11.0%*	Return on Com Equity	*11.5%*
1.8%	1.0%	.2%	1.8%	NMF	3.1%	2.7%	3.1%	5.1%	4.3%	*5.5%*	*4.5%*	Retained to Com Eq	*5.0%*
83%	89%	98%	83%	113%	74%	73%	72%	59%	63%	*54%*	*61%*	All Div'ds to Net Prof	*56%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	50.8	52.7	33.0
Other	409.0	414.6	395.9
Current Assets	459.8	467.3	428.9
Accts Payable	103.3	106.8	191.4
Debt Due	207.5	251.6	58.8
Other	120.1	115.3	75.3
Current Liab.	430.9	473.7	325.5
Fix. Chg. Cov.	285%	282%	285%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	11.5%	16.5%	*3.5%*
"Cash Flow"	1.5%	5.5%	*7.0%*
Earnings	3.0%	9.5%	*4.5%*
Dividends	1.0%	1.0%	*2.5%*
Book Value	3.0%	4.5%	*5.5%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.)A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	442.5	576.5	311.3	266.7	1597.0
2006	689.2	708.8	330.6	269.0	1997.6
2007	539.6	700.8	457.9	323.3	2021.6
2008	504.0	747.7	505.5	*347.8*	*2105*
2009	*515*	*515*	*515*	*515*	*2060*

Fiscal Year Ends	EARNINGS PER SHARE A B F Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.79	1.06	.29	d.24	1.90
2006	1.23	1.05	.13	d.04	2.37
2007	.89	.97	.43	.03	2.31
2008	.99	1.39	.41	*d.04*	*2.75*
2009	*.96*	*1.16*	*.33*	*.05*	*2.50*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.335	.34	.34	.34	1.36
2005	.34	.345	.345	.345	1.38
2006	.345	.355	.355	.355	1.41
2007	.365	.365	.365	.365	1.46
2008	.375	.375	.375		

BUSINESS: Laclede Group, Inc., is a holding company for Laclede Gas, which distributes natural gas in eastern Missouri, including the city of St. Louis, St. Louis County, and parts of 10 other counties. Has roughly 632,000 customers. Purchased SM&P Utility Resources, 1/02; divested, 3/08. Therms sold and transported in fiscal 2007: 1.12 mill. Revenue mix for regulated operations: residential, 60%; commercial and industrial, 24%; transportation, 1%; other, 15%. Has around 3,845 employees. Officers and directors own approximately 7.0% of common shares (1/08 proxy). Chairman, Chief Executive Officer, and President: Douglas H. Yaeger. Incorporated: Missouri. Address: 720 Olive Street, St. Louis, Missouri 63101. Telephone: 314-342-0500. Internet: www.thelacledegroup.com.

Laclede Group's bread-and-butter subsidiary, Laclede Gas, has performed quite well in fiscal 2008 (which ends September 30th). That is attributable primarily to a general rate increase that became effective on August 1st of last year. Higher volumes within the service area and the recording of previously unrecognized tax benefits are also helping matters. But results are being constrained somewhat by lower income from off-system operations and a rise in the provision for uncollectible accounts. Still, it seems that this division is about to close the book on a strong year.

Things are also looking bright for Laclede Energy Resources, arising partially from expanded margins on sales of natural gas. The reversal of tax-related expenses has been another contributor to profits.

All told, consolidated share net ought to surge nearly 20%, to $2.75, this fiscal year (which would be a record). But the bottom line may fall back in fiscal 2009, to $2.50 a share, given the difficult comparison.

The company's prospects out to 2011-2013 appear unexciting, though. The market in which the regulated gas unit operates continues to be in a mature phase. Consequently, achieving significant customer growth should be difficult going forward. Furthermore, it seems that management has no intention to conduct a major acquisition anytime soon. At this juncture, annual bottom-line advances may be only between 4% and 5% over the next three to five years.

These shares offer a decent amount of current dividend income. But we expect further hikes in the payout to be gradual, given Laclede Gas' unspectacular long-term expansion possibilities.

The good-quality stock is currently trading near record-high levels. It appears that the company's strong year-to-date earnings are the main reason why this is happening.

But total-return potential is unexciting. That reflects the equity's substantial rise in value, as well as our assumption that modest increases in the dividend will continue. Meanwhile, the Timeliness rank is 3 (Average).

Frederick L. Harris, III September 12, 2008

(A) Fiscal year ends Sept. 30th.
(B) Based on average shares outstanding thru. '97, then diluted. Excludes nonrecurring loss: '06, 7¢. Excludes gain from discontinued operations: '08, 96¢. Next earnings report due late Oct. (C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available. (D) Incl. deferred charges. In '07: $289.7 mill., $13.38/sh.
(E) In millions.
(F) Qtly. egs. may not sum due to rounding or change in shares outstanding.

Company's Financial Strength	B+
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	70

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NEW JERSEY RES. NYSE-NJR

RECENT PRICE 36.35 | P/E RATIO 29.6 (Trailing: 40.3 Median: 15.0) | RELATIVE P/E RATIO 1.90 | DIV'D YLD 3.1% | VALUE LINE

TIMELINESS 3 Raised 6/6/08
SAFETY 1 Raised 9/15/06
TECHNICAL 3 Lowered 6/6/08
BETA .80 (1.00 = Market)

High:	18.7	17.9	18.3	19.8	21.7	22.4	26.4	29.7	32.9	35.4	37.6	37.0
Low:	12.5	14.0	14.9	16.1	16.6	16.2	20.0	24.3	27.1	27.7	30.3	29.2

Target Price Range 2011 | 2012 | 2013

2011-13 PROJECTIONS

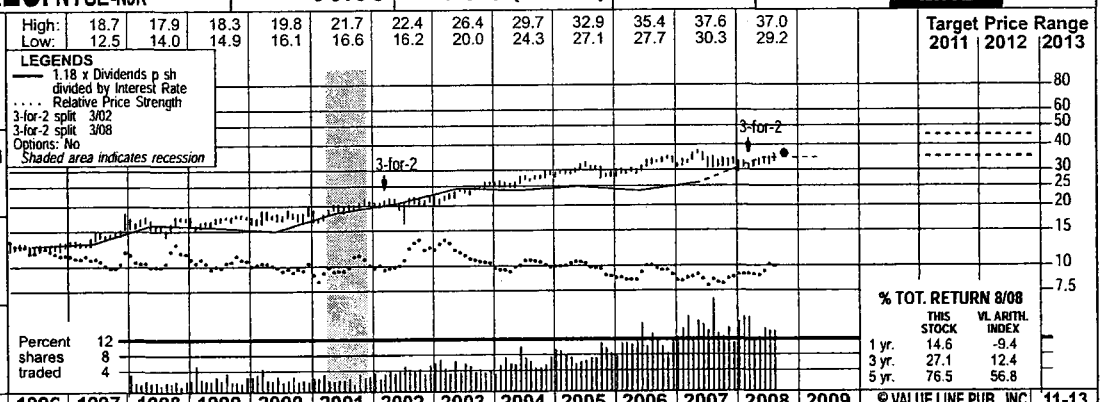
	Price	Gain	Ann'l Total Return
High	45	(+25%)	6%
Low	35	(-5%)	Nil

Insider Decisions

	D	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	1	4	2	0	0	1	2	0
to Sell	0	0	6	0	2	0	0	2	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	82	85	90
to Sell	68	70	62
Hld's(000)	25741	26518	26910



% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	14.6	-9.4
3 yr.	27.1	12.4
5 yr.	76.5	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
11.25	12.02	12.81	11.36	13.48	17.31	17.73	22.65	29.42	51.22	44.11	62.29	60.89	76.19	79.63	72.62	*85.70*	*87.30*	Revenues per sh A	*92.05*
1.30	1.42	1.54	1.42	1.48	1.63	1.74	1.86	1.99	2.12	2.14	2.38	2.50	2.62	2.73	2.44	*2.00*	*3.05*	"Cash Flow" per sh	*3.70*
.73	.76	.84	.86	.92	.99	1.04	1.11	1.20	1.30	1.39	1.59	1.70	1.77	1.87	1.55	*1.10*	*2.15*	Earnings per sh B	*2.80*
.68	.68	.68	.68	.69	.71	.73	.75	.76	.78	.80	.83	.87	.91	.96	1.01	*1.11*	*1.17*	Div'ds Decl'd per sh C■	*1.36*
1.33	1.54	1.40	1.18	1.19	1.15	1.07	1.21	1.23	1.10	1.02	1.14	1.45	1.28	1.28	1.46	*1.55*	*1.65*	Cap'l Spending per sh	*1.80*
6.29	6.54	6.43	6.47	6.73	6.92	7.26	7.57	8.29	8.80	8.71	10.26	11.25	10.60	15.00	15.50	*15.45*	*16.95*	Book Value per sh D	*22.85*
36.64	37.84	38.93	40.03	40.69	40.23	40.07	39.92	39.59	40.00	41.50	40.85	41.61	41.32	41.44	41.61	*42.00*	*42.50*	Common Shs Outst'g E	*44.00*
12.4	15.1	13.0	11.7	13.6	13.5	15.3	15.2	14.7	14.2	14.7	14.0	15.3	16.8	16.1	21.6	*Bold figures are*		Avg Ann'l P/E Ratio	*14.0*
.75	.89	.85	.78	.85	.78	.80	.87	.96	.73	.80	.80	.81	.89	.87	1.13	*Value Line*		Relative P/E Ratio	*.95*
7.5%	5.8%	6.2%	6.7%	5.6%	5.3%	4.6%	4.5%	4.4%	4.2%	3.9%	3.7%	3.3%	3.1%	3.2%	3.0%	*estimates*		Avg Ann'l Div'd Yield	*4.0%*

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
710.3	904.3	1164.5	2048.4	1830.8	2544.4	2533.6	3148.3	3299.6	3021.8	*3600*	*3710*	Revenues ($mill) A	*4050*
43.3	44.9	47.9	52.3	56.8	65.4	71.6	74.4	78.5	65.3	*46.0*	*91.5*	Net Profit ($mill)	*125*
30.4%	36.2%	37.8%	38.0%	38.7%	39.4%	39.1%	39.1%	38.9%	38.8%	*39.0%*	*39.0%*	Income Tax Rate	*40.0%*
6.1%	5.0%	4.1%	2.6%	3.1%	2.6%	2.8%	2.4%	2.4%	2.2%	*1.3%*	*2.5%*	Net Profit Margin	*3.1%*
51.2%	48.7%	47.0%	50.1%	50.6%	38.1%	40.3%	42.0%	34.8%	37.3%	*43.5%*	*41.0%*	Long-Term Debt Ratio	*35.5%*
45.6%	51.2%	52.9%	49.9%	49.4%	61.9%	59.7%	58.0%	65.2%	62.7%	*56.5%*	*59.0%*	Common Equity Ratio	*64.5%*
638.2	590.4	620.1	706.2	732.4	676.8	783.8	755.3	954.0	1028.0	*1150*	*1220*	Total Capital ($mill)	*1560*
680.0	705.4	730.6	743.9	756.4	852.6	880.4	905.1	934.9	970.9	*990*	*1010*	Net Plant ($mill)	*1070*
8.1%	9.0%	9.0%	8.5%	8.7%	10.7%	10.1%	11.2%	9.6%	7.7%	*5.0%*	*8.5%*	Return on Total Cap'l	*9.0%*
13.9%	14.8%	14.6%	14.8%	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	*7.0%*	*12.5%*	Return on Shr. Equity	*12.5%*
14.4%	14.8%	14.6%	14.9%	15.7%	15.6%	15.3%	17.0%	12.6%	10.1%	*7.0%*	*12.5%*	Return on Com Equity	*12.5%*
4.4%	5.0%	5.4%	6.1%	6.9%	7.7%	7.8%	8.5%	6.3%	3.6%	*NMF*	*6.0%*	Retained to Com Eq	*6.5%*
71%	67%	63%	59%	56%	51%	49%	50%	50%	64%	*101%*	*54%*	All Div'ds to Net Prof	*48%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $626.6 mill. **Due in 5 Yrs** $300.0 mill.
LT Debt $481.6 mill. **LT Interest** $17.0 mill.
Incl. $7.4 mill. capitalized leases.
(LT interest earned: 4.8x; total interest coverage: 4.8x)
Pension Assets-9/07 $105.4 mill. **Oblig.** $107.9 mill.

Pfd Stock None

Common Stock 42,034,445 shs. as of 8/1/08
MARKET CAP: $1.5 billion (Mid Cap)

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	5.0	5.1	25.9
Other	960.5	794.8	1167.6
Current Assets	965.5	799.9	1193.5
Accts Payable	46.8	64.4	53.1
Debt Due	284.4	260.8	145.0
Other	566.0	378.1	837.5
Current Liab.	897.2	703.3	1035.6
Fix. Chg. Cov.	570%	461%	450%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	18.5%	13.0%	*3.5%*
"Cash Flow"	5.5%	4.5%	*6.5%*
Earnings	6.5%	6.0%	*8.5%*
Dividends	3.5%	4.0%	*6.0%*
Book Value	7.5%	10.0%	*9.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	854.1	1065	544.3	684.9	3148.3
2006	1164	1064	536.1	535.5	3299.6
2007	737.4	1029	662.2	593.2	3021.8
2008	811.1	1178	1000	*610.9*	*3600*
2009	*820*	*1190*	*1050*	*650*	*3710*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.61	1.23	.05	d.12	1.77
2006	.82	1.43	d.09	d.29	1.87
2007	.70	.19	.60	.06	1.55
2008	.87	.30	d.18	*.11*	*1.10*
2009	*.90*	*.40*	*.73*	*.12*	*2.15*

Cal-endar	QUARTERLY DIVIDENDS PAID C E■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.217	.217	.217	.217	.87
2005	.227	.227	.227	.227	.91
2006	.24	.24	.24	.24	.96
2007	.253	.253	.253	.253	1.01
2008	.267	.28	.28		

BUSINESS: New Jersey Resources Corp. is a holding company providing retail/wholesale energy svcs. to customers in New Jersey, and in states from the Gulf Coast to New England, and Canada. New Jersey Natural Gas had about 478,000 customers at 9/30/07 in Monmouth and Ocean Counties, and other N.J. Counties. Fiscal 2007 volume: 102.8 bill. cu. ft. (58% firm, 6% interruptible industrial and electric utility, 36% off-system and capacity release). N.J. Natural Energy subsidiary provides unregulated retail/wholesale natural gas and related energy svcs. 2007 dep. rate: 2.8%. Has 808 empls. Off./dir. own about 2% of common (12/07 Proxy). Chrmn., CEO, & Pres. : Laurence M. Downes. Inc.: N.J. Addr.: 1415 Wyckoff Road, Wall, NJ 07719. Tel.: 732-938-1480. Web: www.njresources.com.

New Jersey Resources' results over the first nine months of fiscal 2008 were lackluster. Gas expenses have risen by 10.7% and now sit at roughly 95% of total revenues for the June period. Meanwhile, warmer-than-normal weather patterns eased demand across much of the company's service areas. Helping the top and bottom lines, however, is an ever-increasing customer base. For example, NJR has added almost 5,000 new accounts so far this year. Even so, share earnings fell approximately 34% in the first nine months. And we believe the overall spottiness in the economy, coupled with higher natural gas prices, will continue to apply pressure to margins this year. In all, we look for earnings to decline about 30% for the year.

The company's bottom line ought to rebound in 2009. The NJNG division has a pending rate case in New Jersey. A favorable ruling would increase the base rates by 7.5%, or about $58.6 million. Meanwhile, a second case was initiated last quarter. It deals with off-system sales, capacity release, storage optimization, and financial risk management programs. Should these cases be approved, they would benefit both revenues and earnings, as well as provide customer savings.

Capital projects ought to bear fruit in the years to come. The FERC recently approved the development of 12 billion cubic feet of working natural gas storage capacity in Pennsylvania for the Steckman Ridge location. This facility will provide extra capacity during the peak winter and summer months to the Northeast. Meanwhile, construction has begun on a new 16-inch main pipeline that will bring natural gas service to Whiting, NJ. Combined, these projects should provide a boon NJR's prospects in the coming years.

These shares may appeal to conservative, income-oriented accounts. A solid dividend yield and high marks for Price Stability make this stock a selectively attractive purchase. Meanwhile, the equity is ranked to mirror the broader market for the coming year. On the downside, the stock's current quotation sits within our Target Price Range. This suggests the issue offers little, if any, appreciation potential for the pull to 2011-2013.

Bryan Fong *September 12, 2008*

(A) Fiscal year ends Sept. 30th.
(B) Diluted earnings. Next earnings report due late Oct.
(C) Dividends historically paid in early January, April, July, and October. ■ Dividend reinvestment plan available.
(D) Includes regulatory assets in 2007: $312.4 million, $11.24/share.
(E) In millions, adjusted for split.
(F) Restated.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	65
Earnings Predictability	50

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NICOR, INC. NYSE-GAS

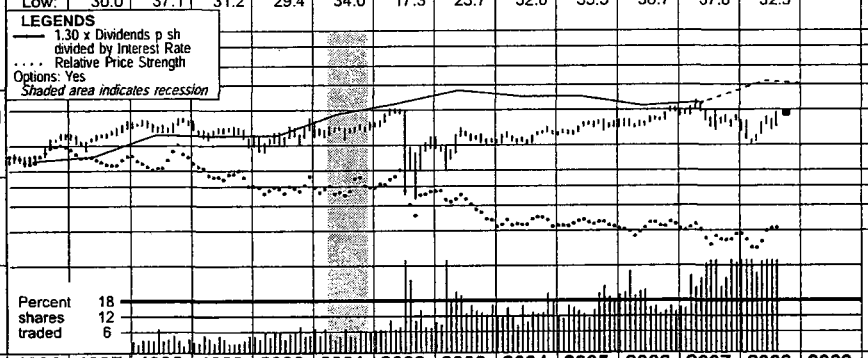
RECENT PRICE **46.30** | P/E RATIO **19.4** (Trailing: 15.0 Median: 15.0) | RELATIVE P/E RATIO **1.24** | DIV'D YLD **4.0%** | VALUE LINE

TIMELINESS **3** Raised 12/7/07
SAFETY **3** Lowered 6/17/05
TECHNICAL **3** Lowered 4/4/08
BETA .90 (1.00 = Market)

High:	42.9	44.4	42.9	43.9	42.4	49.0	39.3	39.7	43.0	49.9	53.7	46.8
Low:	30.0	37.1	31.2	29.4	34.0	17.3	23.7	32.0	35.5	38.7	37.8	32.3

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.30 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	70	(+50%)	14%
Low	45	(-5%)	4%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	0	0	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	96	91	119
to Sell	111	120	90
Hld's(000)	32986	31875	32273

Percent shares traded 18 12 6

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	15.6	-9.4
3 yr.	26.5	12.4
5 yr.	70.8	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
28.90	31.02	31.23	29.42	37.39	41.33	30.84	34.45	50.52	57.30	43.11	60.46	62.12	76.00	65.92	69.20	*84.45*	*86.65*	Revenues per sh	*100.00*
4.14	3.80	4.11	4.19	4.97	5.29	5.21	5.59	6.16	6.41	6.03	5.37	6.00	6.19	6.82	6.96	*6.85*	*7.25*	"Cash Flow" per sh	*8.85*
1.92	1.97	2.07	1.96	2.42	2.55	2.31	2.57	2.94	3.01	2.88	2.11	2.22	2.27	2.87	2.99	*2.40*	*2.60*	Earnings per sh A	*3.65*
1.18	1.22	1.25	1.28	1.32	1.40	1.48	1.54	1.66	1.76	1.84	1.86	1.86	1.86	1.86	1.86	*1.86*	*1.86*	Div'ds Decl'd per sh B	*1.86*
3.12	2.62	3.34	3.12	2.42	2.34	2.87	3.28	3.48	4.18	4.37	4.12	4.32	4.57	4.17	3.77	*4.20*	*4.35*	Cap'l Spending per sh	*4.80*
12.76	13.05	13.26	13.67	14.74	15.43	15.97	16.80	15.56	16.39	16.55	17.13	16.99	18.36	19.43	20.58	*20.90*	*21.60*	Book Value per sh	*25.90*
55.77	53.96	51.54	50.30	49.49	48.22	47.51	46.89	45.49	44.40	44.01	44.04	44.10	44.18	44.90	45.90	*45.00*	*45.00*	Common Shs Outst'g C	*45.00*
11.6	14.1	12.5	13.1	12.5	14.2	17.6	14.6	11.9	12.8	13.1	15.8	15.9	17.3	15.0	15.0	*Bold figures are*		Avg Ann'l P/E Ratio	*16.0*
.70	.83	.82	.88	.78	.82	.92	.83	.77	.66	.72	.90	.84	.92	.81	.80	*Value Line*		Relative P/E Ratio	*1.05*
5.3%	4.4%	4.8%	5.0%	4.4%	3.9%	3.6%	4.1%	4.7%	4.6%	4.9%	5.6%	5.3%	4.7%	4.3%	4.2%	*estimates*		Avg Ann'l Div'd Yield	*3.2%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $516.5 mill. **Due in 5 Yrs** $544.0 mill.
LT Debt $373.5 mill. **LT Interest** $30.0 mill.
(Total interest coverage: 5.9x)

Pension Assets-12/07 $478.7 mill. **Oblig.** $263.2 mill.

Pfd Stock $.6 mill. **Pfd Div'd** None

Common Stock 45,149,020 shares as of 7/30/08
MARKET CAP: $2.1 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
1465.1	1615.2	2298.1	2544.1	1897.4	2662.7	2739.7	3357.8	2960.0	3176.3	*3800*	*3900*	Revenues ($mill)	*4500*
111.1	121.9	136.4	136.3	128.0	93.1	98.1	101.1	128.3	135.2	*110*	*115*	Net Profit ($mill)	*165*
34.4%	34.7%	34.8%	33.5%	31.0%	35.2%	31.8%	28.3%	26.3%	26.6%	*31.0%*	*31.5%*	Income Tax Rate	*33.0%*
7.6%	7.5%	5.9%	5.4%	6.7%	3.5%	3.6%	3.0%	4.3%	4.3%	*2.8%*	*3.0%*	Net Profit Margin	*3.6%*
42.1%	35.5%	32.7%	37.8%	35.1%	39.6%	39.8%	37.4%	36.3%	30.9%	*27.0%*	*24.0%*	Long-Term Debt Ratio	*20.0%*
57.4%	64.0%	66.7%	61.7%	64.5%	60.3%	60.1%	62.5%	63.7%	69.0%	*73.0%*	*76.0%*	Common Equity Ratio	*80.0%*
1322.6	1230.1	1061.2	1180.1	1128.9	1251.5	1246.0	1297.7	1370.7	1368.0	*1290*	*1270*	Total Capital ($mill)	*1465*
1731.8	1735.2	1729.6	1768.6	1796.8	2484.2	2549.8	2659.1	2714.1	2757.3	*2850*	*2950*	Net Plant ($mill)	*3250*
9.9%	10.9%	13.7%	12.3%	12.2%	8.3%	8.8%	9.4%	10.9%	11.2%	*9.5%*	*10.0%*	Return on Total Cap'l	*12.0%*
14.5%	15.4%	19.1%	18.6%	17.5%	12.3%	13.1%	12.5%	14.7%	14.3%	*11.5%*	*12.0%*	Return on Shr. Equity	*14.0%*
14.6%	15.4%	19.2%	18.7%	17.5%	12.3%	13.1%	12.5%	14.7%	14.3%	*11.5%*	*12.0%*	Return on Com Equity	*14.0%*
5.4%	6.2%	8.5%	7.9%	6.5%	1.5%	2.1%	2.3%	5.2%	5.4%	*2.5%*	*3.5%*	Retained to Com Eq	*7.0%*
63%	60%	56%	58%	63%	88%	84%	81%	65%	62%	*78%*	*72%*	All Div'ds to Net Prof	*51%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	67.6	91.9	303.8
Other	843.1	931.9	940.1
Current Assets	910.7	1023.8	1243.9
Accts Payable	564.5	428.2	555.1
Debt Due	350.0	444.0	143.0
Other	227.9	404.2	863.3
Current Liab.	1142.4	1276.4	1561.4
Fix. Chg. Cov.	543%	544%	471%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	7.0%	7.0%	*6.0%*
"Cash Flow"	3.5%	1.5%	*5.0%*
Earnings	1.5%	-1.5%	*5.0%*
Dividends	3.5%	1.0%	*Nil*
Book Value	3.0%	4.0%	*5.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	1179.9	484.4	336.0	1357.5	3357.8
2006	1319.4	451.3	351.1	838.2	2960.0
2007	1334.7	556.9	365.2	919.5	3176.3
2008	1595.7	699.8	*425*	*1079.5*	*3800*
2009	*1650*	*715*	*435*	*1100*	*3900*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.98	.35	d.06	1.02	2.29
2006	.99	.19	.39	1.30	2.87
2007	1.04	.40	.32	1.22	2.98
2008	.91	.64	*.20*	*.65*	*2.40*
2009	*.90*	*.35*	*.25*	*1.10*	*2.60*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.465	.465	.465	.465	1.86
2005	.465	.465	.465	.465	1.86
2006	.465	.465	.465	.465	1.86
2007	.465	.465	.465	.465	1.86
2008	.465	.465	.465		

BUSINESS: Nicor Inc. is a holding company with gas distribution as its primary business. Serves over 2.2 million customers in northern and western Illinois. 2007 gas delivered: 468.3 Bcf, incl. 212.1 Bcf from transportation. 2007 gas sales (256.2 bcf): residential, 79%; commercial, 19%; industrial, 2%. Principal supplying pipelines: Natural Gas Pipeline, Horizon Pipeline, and TGPC. Current operations include Tropical Shipping subsidiary and several energy related ventures. Divested oil and gas E&P, 6/93. Has about 3,900 employees. Officers/directors own about 2.2% of common stock (3/08 proxy). Chairman and CEO: Russ Strobel. Incorporated: Illinois. Address: 1844 Ferry Road, Naperville, Illinois 60563. Telephone: 630-305-9500. Internet: www.nicor.com.

Nicor bounced back after a lackluster first quarter. Indeed, the company reported share net of $0.64 in the second quarter, which beat the prior-year tally of $0.40 as well as our $0.30 estimate. The better-than-expected performance caused investors to take notice and, as a result, shares of GAS have increased over 10% in price since our June report. Management attributed the strong showing to good performances in its gas operations and its other energy-related businesses.

2008 will likely be a down year for the company. Despite the strong second quarter, we expect Nicor to struggle for the remainder of the year. High natural gas prices coupled with a challenging environment in the shipping business should weigh on results. Moreover, increasing operating costs continue to place pressure on the bottom line. In response, Nicor is seeking rate relief (discussed below). For the yearend, we look for earnings of $2.40 a share, down almost 20% from 2007, to reflect declining usage and the difficult environment. This estimate is at the upper end of management's guidance ($2.20 to 2.40 a share) though, which it reiterated when the June-period results were released.

Nicor is awaiting a decision on the rate case it filed with the Illinois Commerce Commission. Management is trying to increase Nicor's base rate by $140.3 million. This reflects a 11.05% return on equity on a $1.5 billion base. Additionally, the company asked for a rate decoupling mechanism, which would better align customer interests with those of GAS through conservation and energy efficiency programs. The process will probably go into the second quarter of 2009. As a result, the bottom line will likely continue to be pressured by rising operating costs. Investors should monitor this process as any decision, good or bad, will likely act as a catalyst for Nicor stock in the months ahead.

These shares are ranked to perform in line with the broader market over the coming six to 12 months. We recommend investors stay on the sidelines for now. The uncertainty surrounding the rate case along with the near-term earnings pressure from rising costs make this issue an unattractive selection for now.

Richard Gallagher *September 12, 2008*

(A) Based on primary earnings thru. '96, then diluted. Excl. nonrecurring gains/(loss): '97, 6¢; '98, 11¢; '99, 5¢; '00, ($1.96); '01, 16¢; '03, (27¢); '04, (52¢); '05, 80¢; '06, (17¢); '07 (13¢). Excl. items from discontinued ops.: '93, 4¢; '96, 30¢. Next egs. report due late October.
(B) Dividends historically paid mid February, May, August, November. ■ Dividend reinvestment plan available. (C) In millions.

Company's Financial Strength	A
Stock's Price Stability	95
Price Growth Persistence	30
Earnings Predictability	75

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N.W. NAT'L GAS NYSE-NWN

RECENT PRICE	P/E RATIO		RELATIVE P/E RATIO	DIV'D YLD
49.07	18.4	(Trailing: 18.6 / Median: 16.0)	1.18	3.2%

VALUE LINE

TIMELINESS **3** Raised 8/8/08

SAFETY **1** Raised 3/18/05

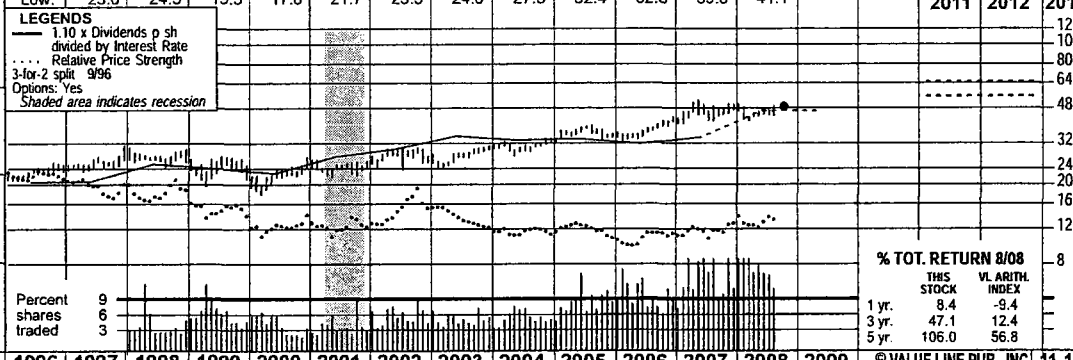
TECHNICAL **3** Raised 8/1/08

BETA .75 (1.00 = Market)

High:	31.4	30.8	27.9	27.5	26.8	30.7	31.3	34.1	39.6	43.7	52.8	50.7
Low:	23.0	24.3	19.5	17.8	21.7	23.5	24.0	27.5	32.4	32.8	39.8	41.1

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.10 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
3-for-2 split 9/96
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	65	(+30%)	10%
Low	55	(+10%)	6%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	1	0	0	0	1
Options	0	4	0	0	0	0	0	0	1
to Sell	0	5	1	0	0	0	0	0	1

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	95	77	78
to Sell	60	92	71
Hld's(000)	16848	16772	16947

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	8.4	-9.4
3 yr.	47.1	12.4
5 yr.	106.0	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
14.10	18.15	18.30	16.02	16.86	15.82	16.77	18.17	21.09	25.78	25.07	23.57	25.69	33.01	37.20	39.13	*40.55*	*43.95*	Revenues per sh	*50.00*
3.25	3.74	3.50	3.41	3.86	3.72	3.24	3.72	3.68	3.86	3.65	3.85	3.92	4.34	4.76	5.41	*5.40*	*5.75*	"Cash Flow" per sh	*6.60*
.74	1.74	1.63	1.61	1.97	1.76	1.02	1.70	1.79	1.88	1.62	1.76	1.86	2.11	2.35	2.76	*2.60*	*2.80*	Earnings per sh A	*3.35*
1.15	1.17	1.17	1.18	1.20	1.21	1.22	1.23	1.24	1.25	1.26	1.27	1.30	1.32	1.39	1.44	*1.52*	*1.60*	Div'ds Decl'd per sh B■	*1.88*
3.73	3.61	4.23	3.02	3.70	5.07	4.02	4.78	3.46	3.23	3.11	4.90	5.52	3.48	3.56	4.48	*5.45*	*9.00*	Cap'l Spending per sh	*4.50*
12.41	13.08	13.63	14.55	15.37	16.02	16.59	17.12	17.93	18.56	18.88	19.52	20.64	21.28	22.01	22.52	*23.65*	*23.75*	Book Value per sh	*26.50*
19.46	19.77	20.13	22.24	22.56	22.86	24.85	25.09	25.23	25.23	25.59	25.94	27.55	27.58	27.24	26.41	*26.50*	*26.50*	Common Shs Outst'g C	*28.00*
27.0	12.9	13.0	12.9	11.7	14.4	26.7	14.5	12.4	12.9	17.2	15.8	16.7	17.0	15.9	16.7	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
1.64	.76	.85	.86	.73	.83	1.39	.83	.81	.66	.94	.90	.88	.91	.86	.88	*Value Line*		Relative P/E Ratio	*1.20*
5.7%	5.2%	5.5%	5.7%	5.2%	4.8%	4.5%	5.0%	5.6%	5.1%	4.5%	4.6%	4.2%	3.7%	3.7%	3.1%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $584.7 mill. Due in 5 Yrs $144.0 mill.
LT Debt $512.0 mill. LT Interest $37.0 mill.

(Total interest coverage: 4.0x)

Pension Assets-12/07 $241 mill.
Oblig. $260 mill.
Pfd Stock None

Common Stock 26,435,373 shs.
as of 7/31/08
MARKET CAP $1.3 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
416.7	455.8	532.1	650.3	641.4	611.3	707.6	910.5	1013.2	1033.2	*1075*	*1150*	Revenues ($mill)	*1400*
27.3	44.9	47.8	50.2	43.8	46.0	50.6	58.1	65.2	74.5	*69.0*	*74.0*	Net Profit ($mill)	*94.0*
31.0%	35.4%	35.9%	35.4%	34.9%	33.7%	34.4%	36.0%	36.3%	37.2%	*37.0%*	*37.0%*	Income Tax Rate	*37.0%*
6.6%	9.9%	9.0%	7.7%	6.8%	7.5%	7.1%	6.4%	6.4%	7.2%	*6.4%*	*6.4%*	Net Profit Margin	*6.7%*
45.0%	46.0%	45.1%	43.0%	47.6%	49.7%	46.0%	47.0%	46.3%	46.3%	*47.0%*	*48.0%*	Long-Term Debt Ratio	*48.0%*
50.6%	49.9%	50.9%	53.2%	51.5%	50.3%	54.0%	53.0%	53.7%	53.7%	*53.0%*	*52.0%*	Common Equity Ratio	*52.0%*
815.6	861.5	887.8	880.5	937.3	1006.6	1052.5	1108.4	1116.5	1106.8	*1150*	*1200*	Total Capital ($mill)	*1500*
894.7	895.9	934.0	965.0	995.6	1205.9	1318.4	1373.4	1425.1	1495.9	*1550*	*1650*	Net Plant ($mill)	*2000*
5.0%	6.8%	6.7%	6.9%	5.9%	5.7%	5.9%	6.5%	7.1%	8.5%	*7.5%*	*7.7%*	Return on Total Cap'l	*7.0%*
6.1%	9.7%	9.8%	10.0%	8.9%	9.1%	8.9%	9.9%	10.9%	12.5%	*11.5%*	*11.5%*	Return on Shr. Equity	*11.0%*
6.0%	9.9%	10.0%	10.2%	8.5%	9.0%	8.9%	9.9%	10.9%	12.5%	*11.5%*	*11.5%*	Return on Com Equity	*11.0%*
NMF	2.8%	3.1%	3.5%	1.9%	2.6%	2.7%	3.7%	4.5%	6.0%	*5.0%*	*5.0%*	Retained to Com Eq	*5.0%*
118%	74%	70%	67%	79%	72%	69%	63%	59%	52%	*58%*	*57%*	All Div'ds to Net Prof	*56%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	5.8	6.1	5.2
Other	303.0	268.8	175.4
Current Assets	308.8	274.9	180.6
Accts Payable	113.6	119.7	75.8
Debt Due	129.6	148.1	72.7
Other	98.3	122.1	131.0
Current Liab.	341.5	389.9	279.5
Fx. Chg. Cov.	349%	408%	NMF

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.5%	8.5%	*6.5%*
"Cash Flow"	3.0%	5.5%	*5.0%*
Earnings	3.0%	6.5%	*7.0%*
Dividends	1.5%	2.0%	*5.5%*
Book Value	3.5%	3.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	308.7	153.7	106.7	341.4	910.5
2006	390.4	171.0	114.9	336.9	1013.2
2007	394.1	183.2	124.2	331.7	1033.2
2008	387.6	191.3	*130*	*366.1*	*1075*
2009	*420*	*200*	*140*	*390*	*1150*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	1.44	.04	d.31	.94	2.11
2006	1.48	.07	d.35	1.15	2.35
2007	1.77	.10	d.22	1.11	2.76
2008	1.63	.08	*d.28*	*1.17*	*2.60*
2009	*1.70*	*.13*	*d.27*	*1.24*	*2.80*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.325	.325	.325	.325	1.30
2005	.325	.325	.325	.345	1.32
2006	.345	.345	.345	.355	1.39
2007	.355	.355	.355	.375	1.44
2008	.375	.375	.375		

BUSINESS: Northwest Natural Gas Co. distributes natural gas to 90 communities, 657,000 customers, in Oregon (90% of customers) and in southwest Washington state. Principal cities served: Portland and Eugene, OR; Vancouver, WA. Service area population: 2.5 mill. (77% in OR). Company buys gas supply from Canadian and U.S. producers; has transportation rights on Northwest Pipeline system. Owns local underground storage. Rev. breakdown: residential, 55%; commercial, 28%; industrial, gas transportation, and other, 17%. Employs 1,130. Barclays Global owns 6.5% of shares; officers and directors, 1.3% (4/08 proxy). CEO: Mark S. Dodson. Inc.: Oregon. Address: 220 NW 2nd Ave., Portland, OR 97209. Telephone: 503-226-4211. Internet: www.nwnatural.com.

Northwest Natural's second-quarter earnings reflected a rare loss on gas costs. In Oregon, the company retains one-third of the difference between its forecast and actual gas costs. (All gas costs are passed on to customers in Washington.) Northwest usually makes money from the purchased gas adjustment mechanism (PGA), but in the June period, the PGA cost it about $0.12 a share. In the first half of 2007, the PGA boosted earnings by around $0.23 a share. Lower operations and maintenance expenses partially offset the PGA loss in the second quarter.

We look for little earnings progress in the second half of 2009 . . . The decline in operating expenses that helped in the June period is unlikely to continue, since some costs will probably be moved to the second half. And the company received a positive tax adjustment in the summer quarter last year. Customer growth, however, continues, though at roughly 2% per year, compared with the 3% pace that Northwest tallied for years through 2007. Conversions from oil to natural gas heating are replacing some of the falloff in new home construction.

. . . but earnings gains should resume next year. Northwest is working with the Oregon public utility commission to modify the gas cost-sharing mechanism, and a new version will likely take effect with the start of the heating season in November. The new arrangement will probably minimize, if not quite eliminate, earnings fluctuations due to profits or losses from gas costs. Customer growth will probably continue at around 2% for the first half of 2009, and new construction should begin to revive by the second half of the year.

Two large projects could significantly boost earnings by 2013. Northwest and PG&E plan to build a gas storage facility at Gill Ranch, near Fresno, which should come on stream by 2011. The eastern half of the Palomar pipeline, which would give Northwest a second source of gas, could open by 2012. Northwest's portions of the two projects could amount to $500 million and contribute up to $0.80 a share beyond our current, conservative forecast.

These top-quality shares offer solid risk-adjusted total-return potential out to 2011-2013.

Sigourney B. Romaine September 12, 2008

(A) Diluted earnings per share. Excludes nonrecurring items: '98, $0.15; '00, $0.11; '06, ($0.06). Next earnings report due early November.

(B) Dividends historically paid in mid-February, mid-May, mid-August, and mid-November.
■ Dividend reinvestment plan available.
(C) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	70
Earnings Predictability	80

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PIEDMONT NAT'L. GAS NYSE-PNY

RECENT PRICE	P/E RATIO	RELATIVE P/E RATIO	DIV'D YLD
29.19	18.2 (Trailing: 18.8 Median: 17.0)	1.17	3.6%

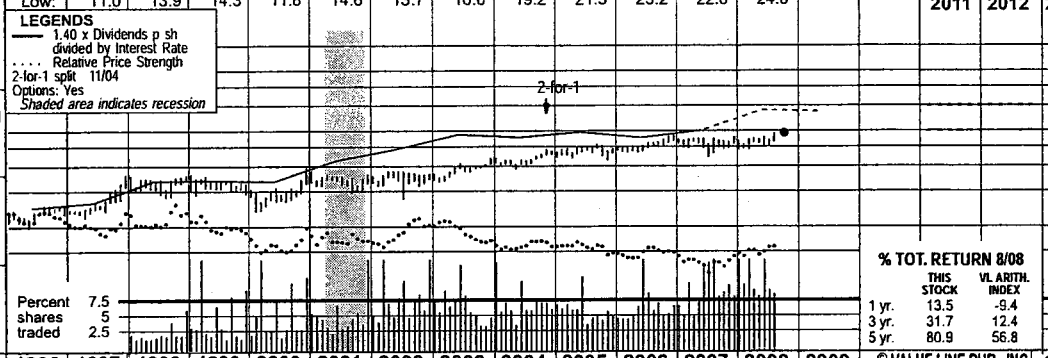
VALUE LINE

TIMELINESS 3 Raised 6/15/07
SAFETY 2 New 7/27/90
TECHNICAL 3 Lowered 9/12/08
BETA .80 (1.00 = Market)

High:	18.2	18.1	18.3	19.7	19.0	19.0	22.0	24.3	25.8	28.4	28.0	29.5
Low:	11.0	13.9	14.3	11.8	14.6	13.7	16.6	19.2	21.3	23.2	22.0	24.0

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.40 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 11/04
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	(+35%)	11%
Low	30	(+5%)	5%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	0	0	0	0	2	0	0	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	85	78	97
to Sell	81	85	77
Hld's(000)	36470	36778	36688

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	13.5	-9.4
3 yr.	31.7	12.4
5 yr.	80.9	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
8.91	10.57	10.82	8.76	11.59	12.84	12.45	10.97	13.01	17.06	12.57	18.14	19.95	22.96	25.80	23.37	*27.05*	*27.95*	Revenues per sh A	*30.90*
1.07	1.14	1.13	1.25	1.49	1.62	1.72	1.70	1.77	1.81	1.81	2.04	2.31	2.43	2.51	2.64	*2.80*	*2.85*	"Cash Flow" per sh	*3.25*
.70	.73	.68	.73	.84	.93	.98	.93	1.01	1.01	.95	1.11	1.27	1.32	1.27	1.40	*1.55*	*1.60*	Earnings per sh B	*1.95*
.46	.48	.51	.54	.57	.61	.64	.68	.72	.76	.80	.82	.85	.91	.95	.99	*1.03*	*1.07*	Div'ds Decl'd per sh C■	*1.19*
1.41	1.58	1.95	1.72	1.64	1.52	1.48	1.58	1.65	1.29	1.21	1.16	1.85	2.50	2.74	1.85	*2.00*	*2.05*	Cap'l Spending per sh	*2.30*
5.13	5.45	5.68	6.16	6.53	6.95	7.45	7.86	8.26	8.63	8.91	9.36	11.15	11.53	11.83	11.99	*12.45*	*12.95*	Book Value per sh D	*15.05*
51.59	52.30	53.15	57.67	59.10	60.39	61.48	62.59	63.83	64.93	66.18	67.31	76.67	76.70	74.61	73.23	*73.00*	*72.75*	Common Shs Outst'g E	*72.00*
12.3	15.4	15.7	13.8	13.9	13.6	16.3	17.7	14.3	16.7	18.4	16.7	16.6	17.9	19.2	18.7	*Bold figures are*		Avg Ann'l P/E Ratio	*18.0*
.75	.91	1.03	.92	.87	.78	.85	1.01	.93	.86	1.01	.95	.88	.95	1.04	.98	*Value Line*		Relative P/E Ratio	*1.50*
5.3%	4.3%	4.8%	5.4%	4.9%	4.8%	4.0%	4.1%	5.0%	4.5%	4.6%	4.4%	4.1%	3.8%	3.9%	3.8%	*estimates*		Avg Ann'l Div'd Yield	*3.1%*

CAPITAL STRUCTURE as of 4/30/08
Total Debt $903.2 mill. **Due in 5 Yrs** $150.0 mill.
LT Debt $824.7 mill. **LT Interest** $55.7 mill.
(LT interest earned: 4.0x; total interest coverage: 4.0x)

Pension Assets-10/07 $225.0 mill. **Oblig.** $188.7 mill.

Pfd Stock None

Common Stock 73,377,001 shs. as of 6/2/08
MARKET CAP: $2.1 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
765.3	686.5	830.4	1107.9	832.0	1220.8	1529.7	1761.1	1924.7	1711.3	*1975*	*2035*	Revenues ($mill) A	*2225*
60.3	58.2	64.0	65.5	62.2	74.4	95.2	101.3	97.2	104.4	*113*	*117*	Net Profit ($mill)	*145*
39.2%	39.7%	34.7%	34.6%	33.1%	34.8%	35.1%	33.7%	34.2%	33.0%	*35.0%*	*35.0%*	Income Tax Rate	*35.0%*
7.9%	8.5%	7.7%	5.9%	7.5%	6.1%	6.2%	5.8%	5.0%	6.1%	*5.7%*	*5.8%*	Net Profit Margin	*6.5%*
44.7%	46.2%	46.1%	47.6%	43.9%	42.2%	43.6%	41.4%	48.3%	48.4%	*48.0%*	*47.6%*	Long-Term Debt Ratio	*45.5%*
55.3%	53.8%	53.9%	52.4%	56.1%	57.8%	56.4%	58.6%	51.7%	51.6%	*52.0%*	*52.4%*	Common Equity Ratio	*54.5%*
829.3	914.7	978.4	1069.4	1051.6	1090.2	1514.9	1509.2	1707.9	1703.3	*1750*	*1800*	Total Capital ($mill)	*1985*
990.6	1047.0	1072.0	1114.7	1158.5	1812.3	1849.8	1939.1	2075.3	2141.5	*2200*	*2250*	Net Plant ($mill)	*2400*
9.2%	8.1%	8.3%	7.9%	7.8%	8.6%	7.8%	8.2%	7.2%	7.8%	*8.0%*	*8.0%*	Return on Total Cap'l	*8.5%*
13.2%	11.8%	12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	*12.5%*	*12.5%*	Return on Shr. Equity	*13.0%*
13.2%	11.8%	12.1%	11.7%	10.6%	11.8%	11.1%	11.5%	11.0%	11.9%	*12.5%*	*12.5%*	Return on Com Equity	*13.0%*
4.7%	3.3%	3.5%	3.0%	1.7%	3.1%	3.7%	3.6%	2.8%	3.5%	*4.0%*	*4.0%*	Retained to Com Eq	*5.0%*
65%	72%	71%	75%	83%	74%	66%	68%	74%	70%	*66%*	*67%*	All Div'ds to Net Prof	*60%*

CURRENT POSITION ($MILL.)	2006	2007	4/30/08
Cash Assets	8.9	7.5	9.6
Other	467.1	427.8	429.0
Current Assets	476.0	435.3	438.6
Accts Payable	80.3	97.2	144.7
Debt Due	170.0	195.0	78.5
Other	150.1	132.3	145.8
Current Liab.	400.4	424.5	369.0
Fix. Chg. Cov.	261%	225%	220%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	8.0%	11.0%	*4.5%*
"Cash Flow"	5.5%	7.0%	*4.0%*
Earnings	5.0%	6.0%	*7.0%*
Dividends	5.0%	4.5%	*4.0%*
Book Value	6.0%	6.5%	*4.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2005	680.6	508.0	232.9	339.6	1761.1
2006	921.4	483.2	237.9	282.2	1924.7
2007	677.2	531.5	224.4	278.2	1711.3
2008	788.5	634.2	*250*	*302.3*	*1975*
2009	*815*	*655*	*255*	*310*	*2035*

Fiscal Year Ends	EARNINGS PER SHARE A B F Jan.31	Apr.30	Jul.31	Oct.31	Full Fiscal Year
2005	.93	.52	d.06	d.07	1.32
2006	.94	.57	d.16	d.08	1.27
2007	.94	.69	d.12	d.11	1.40
2008	1.12	.66	*d.12*	*d.11*	*1.55*
2009	*1.08*	*.75*	*d.13*	*d.10*	*1.60*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.208	.215	.215	.215	.85
2005	.215	.23	.23	.23	.91
2006	.23	.24	.24	.24	.95
2007	.24	.25	.25	.25	.99
2009	.25	.26	.26		

BUSINESS: Piedmont Natural Gas Company is primarily a regulated natural gas distributor, serving over 932,097 customers in North Carolina, South Carolina, and Tennessee. 2007 revenue mix: residential (54%), commercial (30%), industrial (14%), other (2%). Principal suppliers: Transco and Tennessee Pipeline. Gas costs: 69.4% of revenues. '07 deprec. rate: 3.4%. Estimated plant age: 8.7 years. Non-regulated operations: sale of gas-powered heating equipment; natural gas brokering; propane sales. Has about 1,876 employees. Officers & directors own less than 1% of common stock (1/08 proxy). Chairman, CEO, & President: Thomas E. Skains. Inc.: NC. Addr.: 4720 Piedmont Row Drive, Charlotte, NC 28210. Telephone: 704-364-3120. Internet: www.piedmontng.com.

Piedmont Natural Gas continues to perform well despite a difficult operating environment. Its revenues have been advancing at a nice clip. This trend stems from additions to its customer base resulting in higher top-line volumes. But margins have been impacted as rising commodity prices pushed up the cost of gas by 5%. This metric now sits at 75% of operating revenues. These factors hurt PNY's April-period results. However,

We look for the company to have posted July-period results in line with last year. This would represent a 20% improvement compared to our previous estimate. Greater efficiency likely stemmed from solid cost-control efforts. Piedmont has been implementing process improvements that have been starting to take hold in the form of lower expenses. Consequently, we have improved our share-net estimates for the second half of the year.

The bottom line ought to advance approximately 11% and 3% for this year and next, respectively. The bulk of the efficiency initiatives will likely take hold this year. Thus, we estimate 2009's share-earnings will moderate on a year-to-year comparable basis. Meanwhile, a bit of uncertainty stems from the company's joint venture with Southstar. Its profitability has been hurt as a result of the difficult natural gas markets.

On a brighter note, capital projects augur well for Piedmont's longer-term prospects. The company recently announced its plans to construct a liquefied natural gas peak storage facility in North Carolina. This project is in its preliminary stages, and PNY expects its cost to range from $300 million-$350 million. The new facility should be capable of storing roughly 1.25 billion cubic feet of natural gas for use during times of peak demand. It is expected to be in service for the 2012-2013 winter heating season.

These shares may appeal to income-oriented accounts stressing safety. This is made possible by the solid dividend yield and high mark for Price Stability. However, given the fact that the stock's current quotation sits near our Target Price Range, its total return potential for the coming 3 to 5 years is only average for a gas utility.

Bryan Fong *September 12, 2008*

(A) Fiscal year ends October 31st.
(B) Diluted earnings. Excl. extraordinary item: '00, 8¢. Excl. nonrecurring charge: '97, 2¢. Next earnings report due early Nov.
(C) Dividends historically paid mid-January, April, July, October.
■ Div'd reinvest. plan available; 5% discount.
(D) Includes deferred charges. In 2007: $23.9 million, 33¢/share.
(E) In millions, adjusted for stock split.
(F) Quarters may not add to total due to change in shares outstanding.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	60
Earnings Predictability	85

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SOUTH JERSEY INDS. NYSE-SJI

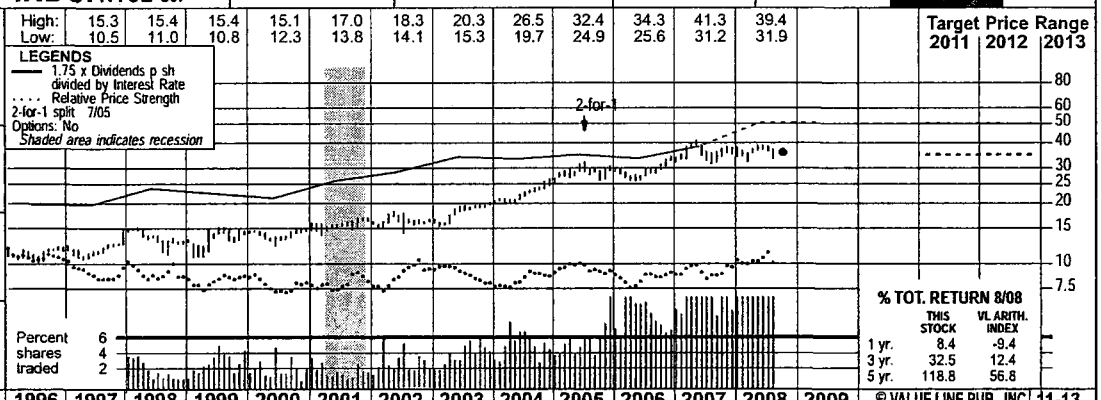
RECENT PRICE 35.91 | P/E RATIO 15.4 (Trailing: 16.6 Median: 14.0) | RELATIVE P/E RATIO 0.99 | DIV'D YLD 3.1% | VALUE LINE

TIMELINESS 3 Raised 5/23/08
SAFETY 2 Lowered 1/4/91
TECHNICAL 3 Lowered 5/23/08
BETA .80 (1.00 = Market)

High:	15.3	15.4	15.4	15.1	17.0	18.3	20.3	26.5	32.4	34.3	41.3	39.4
Low:	10.5	11.0	10.8	12.3	13.8	14.1	15.3	19.7	24.9	25.6	31.2	31.9

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.75 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 7/05
Options: No
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+40%)	12%
Low	35	(-5%)	3%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	1	0	0	0	1	0	0
Options	0	0	0	0	0	0	0	0	0
to Sell	0	2	0	0	0	2	0	2	1

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	66	57	85
to Sell	59	71	58
Hld's(000)	16995	17182	17430

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	8.4	-9.4
3 yr.	32.5	12.4
5 yr.	118.8	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
16.67	17.03	17.45	16.50	16.52	16.18	20.89	17.60	22.43	35.30	20.69	26.34	29.51	31.78	31.76	32.30	*30.35*	*31.45*	Revenues per sh	*34.85*
1.56	1.54	1.35	1.65	1.54	1.60	1.44	1.84	1.95	1.90	2.12	2.24	2.44	2.51	3.51	3.20	*3.30*	*3.50*	"Cash Flow" per sh	*4.10*
.81	.78	.61	.83	.85	.86	.64	1.01	1.08	1.15	1.22	1.37	1.58	1.71	2.46	2.09	*2.30*	*2.50*	Earnings per sh A	*3.00*
.71	.72	.72	.72	.72	.72	.72	.72	.73	.74	.75	.78	.82	.86	.92	1.01	*1.10*	*1.16*	Div'ds Decl'd per sh B ■	*1.28*
1.69	1.87	1.93	2.08	2.01	2.30	3.06	2.19	2.21	2.82	3.47	2.36	2.67	3.21	2.51	1.88	*2.00*	*2.25*	Cap'l Spending per sh	*3.05*
6.95	7.17	7.23	7.34	8.03	6.43	6.23	6.74	7.25	7.81	9.67	11.26	12.41	13.50	15.11	16.25	*16.00*	*16.95*	Book Value per sh C	*18.20*
19.00	19.61	21.43	21.44	21.51	21.54	21.56	22.30	23.00	23.72	24.41	26.46	27.76	28.98	29.33	29.61	*30.00*	*31.00*	Common Shs Outst'g D	*33.00*
13.2	15.8	16.1	12.2	13.3	13.8	21.2	13.3	13.0	13.6	13.5	13.3	14.1	16.6	11.9	17.2	*Bold figures are*		Avg Ann'l P/E Ratio	*14.0*
.80	.93	1.06	.82	.83	.80	1.10	.76	.85	.70	.74	.76	.74	.88	.64	.91	*Value Line*		Relative P/E Ratio	*.95*
6.6%	5.9%	7.4%	7.2%	6.4%	6.1%	5.3%	5.4%	5.2%	4.7%	4.6%	4.3%	3.7%	3.0%	3.2%	2.8%	*estimates*		Avg Ann'l Div'd Yield	*3.0%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $447.2 mill. Due in 5 Yrs $152.0 mill.
LT Debt $332.8 mill. LT Interest $18.0 mill.
(Total interest coverage: 3.3x)

Pension Assets-12/07 $120.4 mill. Oblig. $133.0 mill.

Pfd Stock none

Common Stock 29,728,697 common shs. as of 8/1/08

MARKET CAP: $1.1 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
450.2	392.5	515.9	837.3	505.1	696.8	819.1	921.0	931.4	956.4	*910*	*975*	Revenues ($mill)	*1150*
13.8	22.0	24.7	26.8	29.4	34.6	43.0	48.6	72.0	61.8	*70.0*	*77.5*	Net Profit ($mill)	*100*
46.2%	42.8%	43.1%	42.2%	41.4%	40.6%	40.9%	41.5%	41.3%	41.9%	*40.0%*	*40.0%*	Income Tax Rate	*40.0%*
3.1%	5.6%	4.8%	3.2%	5.8%	5.0%	5.2%	5.3%	7.7%	6.5%	*7.7%*	*7.9%*	Net Profit Margin	*8.7%*
57.3%	53.8%	54.1%	57.0%	53.6%	50.8%	48.7%	44.9%	44.7%	42.7%	*40.5%*	*41.5%*	Long-Term Debt Ratio	*41.5%*
33.5%	37.0%	37.6%	35.9%	46.1%	49.0%	51.0%	55.1%	55.3%	57.3%	*59.5%*	*58.5%*	Common Equity Ratio	*58.5%*
401.1	405.9	443.5	516.2	512.5	608.4	675.0	710.3	801.1	839.0	*805*	*900*	Total Capital ($mill)	*1025*
504.3	533.3	562.2	607.0	666.6	748.3	799.9	877.3	920.0	948.9	*980*	*1015*	Net Plant ($mill)	*1200*
5.3%	7.4%	7.4%	6.9%	7.6%	7.3%	7.9%	8.3%	10.1%	8.6%	*10.0%*	*10.0%*	Return on Total Cap'l	*11.0%*
8.1%	11.7%	12.1%	12.1%	12.4%	11.5%	12.4%	12.4%	16.3%	12.8%	*14.5%*	*15.0%*	Return on Shr. Equity	*16.5%*
10.3%	14.6%	14.8%	12.8%	12.5%	11.6%	12.5%	12.4%	16.3%	12.8%	*14.5%*	*15.0%*	Return on Com Equity	*16.5%*
NMF	4.2%	4.8%	3.5%	4.7%	5.0%	5.9%	6.2%	10.2%	6.7%	*7.5%*	*8.0%*	Retained to Com Eq	*9.5%*
112%	72%	67%	76%	62%	57%	52%	50%	37%	48%	*47%*	*46%*	All Div'ds to Net Prof	*42%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	7.9	11.7	8.9
Other	363.8	316.6	343.3
Current Assets	371.7	328.3	352.2
Accts Payable	101.6	101.2	138.5
Debt Due	197.0	118.4	114.4
Other	124.2	108.7	131.2
Current Liab.	422.8	328.3	384.1
Fix. Chg. Cov.	527%	476%	324%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	7.0%	4.0%	*1.5%*
"Cash Flow"	7.0%	9.0%	*5.0%*
Earnings	9.5%	12.5%	*6.0%*
Dividends	2.5%	4.5%	*5.5%*
Book Value	7.5%	12.5%	*3.5%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	328.6	154.0	157.0	281.4	921.0
2006	372.6	153.8	154.7	250.3	931.4
2007	368.4	171.7	156.2	260.1	956.4
2008	348.0	135.8	*160*	*266.2*	*910*
2009	*365*	*160*	*175*	*275*	*975*

Cal-endar	EARNINGS PER SHARE A Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.96	.27	.09	.39	1.71
2006	1.06	.20	.51	.69	2.46
2007	1.30	.21	d.05	.63	2.09
2008	1.32	.26	*.05*	*.67*	*2.30*
2009	*1.35*	*.30*	*.15*	*.70*	*2.50*

Cal-endar	QUARTERLY DIVIDENDS PAID B ■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	--	.202	.202	.415	.82
2005	--	.213	.213	.438	.86
2006	--	.225	.225	.470	.92
2007	--	.245	.245	.515	1.01
2008	--	.270	.270		

BUSINESS: South Jersey Industries, Inc. is a holding company. Its subsidiary, South Jersey Gas Co., distributes natural gas to 335,663 customers in New Jersey's southern counties, which covers 2,500 square miles and includes Atlantic City. Gas revenue mix '07: residential, 46%; commercial, 23%; cogeneration and electric generation, 8%; industrial, 23%. Non-utility operations include: South Jersey Energy, South Jersey Resources Group, Marina Energy, and South Jersey Energy Service Plus. Has 604 employees. Off./dir. control 1.0% of com. shares; Dimensional Fund Advisors, 6.5%; Barclays, 6.1% (3/08 proxy). Chrmn. & CEO: Edward Graham. Incorp.: NJ. Address: 1 South Jersey Plaza, Folsom, NJ 08037. Tel.: 609-561-9000. Internet: www.sjindustries.com.

South Jersey Industries has reported decent performance in recent times, given a challenging environment. Customer growth at South Jersey Gas has continued at a respectable pace, despite weakness in the housing market. Elsewhere, the on-site energy production business, Marina Energy, experienced improved operating results, posting strong bottom-line growth. The commodity marketing business also fared well. Overall, the company reported solid share net growth for the second quarter. Readers are advised that our EPS figures are based on economic earnings, a non-GAAP measure that excludes unrealized gains and losses from commodity derivative transactions.

The company has solid long-term prospects. Natural gas remains the fuel of choice in the markets served by South Jersey Gas, where the fuel enjoys a considerable price advantage over alternatives. Additionally, economic development in the Atlantic City area should boost housing demand in the coming years. Elsewhere, the commodity marketing business ought to continue to benefit from excess gas storage and pipeline capacity, which allow it to capture attractive margins resulting from volatility in pricing.

Marina Energy's joint-venture project to develop and operate a thermal plant serving the Echelon Resort has been delayed. Construction of Boyd Gaming's Las Vegas resort has been pushed back by nine to 12 months. Boyd cited a difficult capital market environment, along with weak economic conditions. Still, we expect this project will ultimately benefit performance at Marina.

South Jersey Gas is seeking a rate increase from the New Jersey Board of Public Utilities. It is proposing a 17.8% increase to the average residential customer's bill. The company cited higher natural gas prices, and is looking to recoup the additional cost. Assuming approval, the rate hike would likely take effect in October.

We expect continued bottom-line growth at South Jersey to 2011-2013. That supports good dividend growth prospects, although the stock's yield is below the group average. But overall, the issue offers decent total return potential for a natural gas utility.

Michael Napoli, CPA *September 12, 2008*

(A) Based on GAAP EPS through 2006, economic earnings thereafter. GAAP EPS: '07, $2.10. Excl. nonrecur. gain (loss): '01, $0.13; Q2 '08, ($0.70). Excl gain (losses) from disc. ops.: '96, $1.14; '97, ($0.24); '98, ($0.26); '99, ($0.02); '00, ($0.04); '01, ($0.02); '02, ($0.04); '03, ($0.09); '05, ($0.02); '06, ($0.02); '07, $0.01. Next egs. report due in November. (B) Div'ds paid early Apr., Jul., Oct., and late Dec. ■ Div. reinvest. plan avail. (C) Incl. regulatory assets. At 6/30/08: $187.1 mill., $6.29 per shr. (D) In millions, adjusted for split.

Company's Financial Strength	B++
Stock's Price Stability	100
Price Growth Persistence	95
Earnings Predictability	75

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SOUTHWEST GAS NYSE-SWX

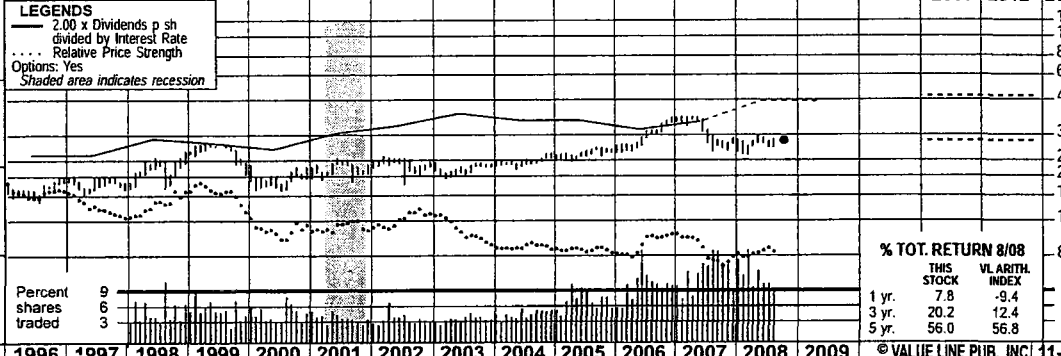
RECENT PRICE 30.18 | P/E RATIO 14.7 (Trailing: 16.2 Median: 18.0) | RELATIVE P/E RATIO 0.94 | DIV'D YLD 3.0% | VALUE LINE

TIMELINESS 3 Raised 5/23/08
SAFETY 3 Lowered 1/4/91
TECHNICAL 3 Lowered 6/27/08
BETA .80 (1.00 = Market)

High:	20.3	26.9	29.5	23.0	24.7	25.3	23.6	26.2	28.1	39.4	39.9	31.7
Low:	16.1	17.3	20.4	16.9	18.6	18.1	19.3	21.5	23.5	26.0	26.5	25.1

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 2.00 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	50	(+65%)	16%
Low	30	(Nil)	3%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	0	0
Options	0	0	0	0	0	1	0	1	0
to Sell	0	0	1	0	0	2	0	3	0

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	82	80	85
to Sell	84	88	65
Hld's(000)	34975	34496	34150

Percent shares traded 9 6 3

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	7.8	-9.4
3 yr.	20.2	12.4
5 yr.	56.0	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
25.93	25.68	28.16	23.03	24.09	26.73	30.17	30.24	32.61	42.98	39.68	35.96	40.14	43.59	48.47	50.27	*51.15*	*53.35*	Revenues per sh A	*60.40*
3.34	3.24	5.09	2.65	3.00	3.85	4.48	4.45	4.57	4.79	5.07	5.11	5.57	5.20	5.97	6.21	*6.30*	*6.65*	"Cash Flow" per sh	*7.10*
.81	.63	1.22	.10	.25	.77	1.65	1.27	1.21	1.15	1.16	1.13	1.66	1.25	1.98	1.95	*2.00*	*2.20*	Earnings per sh A B	*2.65*
.70	.74	.80	.82	.82	.82	.82	.82	.82	.82	.82	.82	.82	.82	.82	.86	*.90*	*.94*	Div'ds Decl'd per sh C■	*1.06*
5.02	5.43	6.64	6.79	8.19	6.19	6.40	7.41	7.04	8.17	8.50	7.03	8.23	7.49	8.27	7.96	*7.40*	*8.90*	Cap'l Spending per sh	*10.50*
15.99	15.96	16.38	14.55	14.20	14.09	15.67	16.31	16.82	17.27	17.91	18.42	19.18	19.10	21.58	22.98	*23.86*	*25.55*	Book Value per sh	*27.10*
20.60	21.00	21.28	24.47	26.73	27.39	30.41	30.99	31.71	32.49	33.29	34.23	36.79	39.33	41.77	42.81	*44.00*	*45.00*	Common Shs Outst'g D	*48.00*
16.6	26.5	14.0	NMF	69.3	24.1	13.2	21.1	16.0	19.0	19.9	19.2	14.3	20.6	15.9	18.4	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
1.01	1.57	.92	NMF	4.34	1.39	.69	1.20	1.04	.97	1.09	1.09	.76	1.10	.86	.98	*Value Line*		Relative P/E Ratio	*1.00*
5.2%	4.4%	4.7%	5.4%	4.7%	4.4%	3.8%	3.1%	4.2%	3.8%	3.6%	3.8%	3.5%	3.2%	2.6%	2.4%	*estimates*		Avg Ann'l Div'd Yield	*2.7%*

CAPITAL STRUCTURE as of 6/30/08

Total Debt $1306.8 mill. Due in 5 Yrs $606.3 mill.
LT Debt $1268.7 mill. LT Interest $90.0 mill.
(Total interest coverage: 2.3x)

Pension Assets-12/07 $441.7 mill. Oblig. $546.4 mill.

Pfd Stock None

Common Stock 43,532,836 shs. as of 8/1/08

MARKET CAP: $1.3 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
917.3	936.9	1034.1	1396.7	1320.9	1231.0	1477.1	1714.3	2024.7	2152.1	*2250*	*2400*	Revenues ($mill) A	*2900*
47.5	39.3	38.3	37.2	38.6	38.5	58.9	48.1	80.5	83.3	*88.0*	*100*	Net Profit ($mill)	*125*
43.4%	35.5%	26.2%	34.5%	32.8%	30.5%	34.8%	29.7%	37.3%	36.5%	*37.0%*	*36.0%*	Income Tax Rate	*35.0%*
5.2%	4.2%	3.7%	2.7%	2.9%	3.1%	4.0%	2.8%	4.0%	3.9%	*3.9%*	*4.2%*	Net Profit Margin	*4.3%*
60.2%	60.3%	60.2%	56.2%	62.5%	66.0%	64.2%	63.8%	60.6%	58.1%	*54.5%*	*52.5%*	Long-Term Debt Ratio	*50.5%*
35.3%	35.5%	35.8%	39.6%	34.1%	34.0%	35.8%	36.2%	39.4%	41.9%	*45.5%*	*47.5%*	Common Equity Ratio	*49.5%*
1349.3	1424.7	1489.9	1417.6	1748.3	1851.6	1968.6	2076.0	2287.8	2349.8	*2300*	*2430*	Total Capital ($mill)	*2625*
1459.4	1581.1	1686.1	1825.6	1979.5	2175.7	2336.0	2489.1	2668.1	2845.3	*2950*	*3100*	Net Plant ($mill)	*3600*
5.8%	4.8%	4.6%	5.1%	4.3%	4.2%	5.0%	4.3%	5.5%	5.5%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
8.9%	7.0%	6.5%	6.0%	5.9%	6.1%	8.3%	6.4%	8.9%	8.5%	*8.5%*	*8.5%*	Return on Shr. Equity	*9.5%*
10.0%	7.8%	7.2%	6.6%	6.5%	6.1%	8.3%	6.4%	8.9%	8.5%	*8.5%*	*8.5%*	Return on Com Equity	*9.5%*
5.0%	2.8%	2.4%	1.9%	1.9%	1.7%	4.3%	2.2%	5.2%	4.8%	*4.5%*	*5.0%*	Retained to Com Eq	*5.5%*
50%	64%	67%	71%	70%	72%	49%	65%	42%	44%	*44%*	*42%*	All Div'ds to Net Prof	*41%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	18.8	32.0	16.5
Other	482.8	470.5	252.9
Current Assets	501.6	502.5	269.4
Accts Payable	265.7	220.7	98.0
Debt Due	27.5	47.1	38.1
Other	202.9	260.1	250.2
Current Liab.	496.1	527.9	386.3
Fix. Chg. Cov.	220%	229%	232%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	6.0%	4.5%	*4.0%*
"Cash Flow"	4.5%	4.0%	*3.5%*
Earnings	12.0%	6.0%	*7.5%*
Dividends	--	--	*4.0%*
Book Value	3.0%	3.5%	*4.0%*

Cal-endar	QUARTERLY REVENUES ($ mill.) Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	542.9	361.1	313.3	497.0	1714.3
2006	676.9	430.9	351.8	565.1	2024.7
2007	793.7	426.6	371.5	560.3	2152.1
2008	813.6	447.3	*400*	*589.1*	*2250*
2009	*850*	*490*	*435*	*625*	*2400*

Cal-endar	EARNINGS PER SHARE B Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2005	.88	d.07	d.43	.87	1.25
2006	1.11	.02	d.26	1.11	1.98
2007	1.17	d.01	d.22	1.00	1.95
2008	1.14	d.06	*d.20*	*1.12*	*2.00*
2009	*1.20*	*Nil*	*d.20*	*1.20*	*2.20*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.205	.205	.205	.205	.82
2005	.205	.205	.205	.205	.82
2006	.205	.205	.205	.205	.82
2007	.205	.215	.215	.215	.85
2008	.215	.225	.225		

BUSINESS: Southwest Gas Corporation is a regulated gas distributor serving approximately 1.8 million customers in sections of Arizona, Nevada, and California. Comprised of two business segments: natural gas operations and construction services. 2007 margin mix: residential and small commercial, 86%; large commercial and industrial, 5%; transportation, 9%. Total throughput: 2.4 billion therms. Sold PriMerit Bank, 7/96. Has 5,073 employees. Off. & Dir. own 1.8% of common stock; T. Rowe Price Associates, Inc., 6.7%; GAMCO Investors, Inc., 5.8% (3/08 Proxy). Chairman: James J. Kropid. Chief Executive Officer: Jeffrey W. Shaw. Inc.: California. Address: 5241 Spring Mountain Road, Las Vegas, Nevada 89193. Telephone: 702-876-7237. Internet: www.swgas.com.

Southwest Gas reported a modest top-line advance for the second quarter. This was mainly a result of slow customer growth. The company has added 19,000 customers over the past year, an increase of roughly 1%. Favorable weather variations also boosted revenues. That said, operating costs advanced at a slightly faster clip, and Southwest posted a share loss of $0.06 for the period. Due to the seasonal nature of the industry, losses during the second and third quarters are common, and generally not a cause for concern. We look for modest share-earnings growth for full-year 2008, assuming a favorable performance in the fourth quarter. Share net may advance at a faster pace in 2009, provided customer growth picks up.

Southwest remains focused on procuring rate relief and improving rate design. The company presently has two rate cases on file. It has requested an increase in operating revenues of $50.2 million in Arizona. Also, Southwest is seeking a rate structure that encourages energy efficiency and protects the company and customers from weather-related volatility. SWX is hopeful that a ruling will be made prior to the winter heating season. Meanwhile, the company has requested a rate increase of $9.1 million in California. It expects this case will be resolved by yearend. These requests seem fair, although it's unclear what pressures the rate boards may face, if any. In addition, a project to convert customers to electronic meter reading is roughly 90% complete. SWX should continue to realize efficiencies from this initiative, which ought to temper growth in operating costs.

The company is not without risk. Warmer-than-usual temperatures during the winter months can hurt profitability at the company. Insufficient, or lagging, rate relief could also hinder performance. In addition, operating expenses will likely continue to increase, as the company further expands.

At the present quotation, this issue offers decent total return potential for a utility, based on the solid share-net growth that we expect at SWX over the pull to 2011-2013. Another pullback in the share price may offer patient investors a more attractive entry point.

Michael Napoli, CPA *September 12, 2008*

(A) Incl. income for PriMerit Bank on the equity basis through 1994. (B) Based on avg. shares outstand. thru. '96, then diluted. Excl. nonrec. gains (losses): '93, 8¢; '97, 16¢; '02, (10¢); '05, (11¢); '06, 7¢. Incl. asset writedown: '93, 44¢. Excl. loss from disc. ops.: '95, 75¢. Totals may not sum due to rounding. Next egs. report due late October/early November. (C) Dividends historically paid early March, June, September, December. ■ Div'd reinvest. plan avail. (D) In millions.

Company's Financial Strength	B
Stock's Price Stability	100
Price Growth Persistence	45
Earnings Predictability	70

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WGL HOLDINGS NYSE-WGL

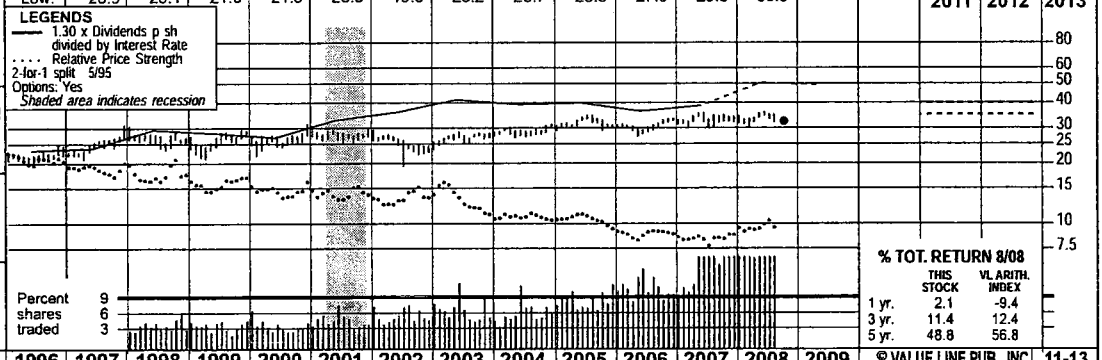
RECENT PRICE	32.48	P/E RATIO	14.4 (Trailing: 8.2 / Median: 15.0)	RELATIVE P/E RATIO	0.93	DIV'D YLD	4.4%	VALUE LINE

TIMELINESS **3** Raised 5/25/07
SAFETY **1** Raised 4/2/93
TECHNICAL **3** Lowered 5/30/08
BETA .85 (1.00 = Market)

High:	31.4	30.8	29.4	31.5	30.5	29.5	28.8	31.4	34.8	33.6	35.9	36.2
Low:	20.9	23.1	21.0	21.8	25.3	19.3	23.2	26.7	28.8	27.0	29.8	30.3

Target Price Range 2011 | 2012 | 2013

LEGENDS
— 1.30 x Dividends p sh divided by Interest Rate
.... Relative Price Strength
2-for-1 split 5/95
Options: Yes
Shaded area indicates recession



2011-13 PROJECTIONS

	Price	Gain	Ann'l Total Return
High	40	25%	10%
Low	35	10%	7%

Insider Decisions

	O	N	D	J	F	M	A	M	J
to Buy	0	0	0	0	0	0	0	1	0
Options	3	0	0	0	0	0	0	5	1
to Sell	3	0	1	2	0	0	0	7	1

Institutional Decisions

	4Q2007	1Q2008	2Q2008
to Buy	92	106	95
to Sell	94	89	100
Hld's(000)	35393	35559	34195

Percent shares traded 9 6 3

% TOT. RETURN 8/08

	THIS STOCK	VL ARITH. INDEX
1 yr.	2.1	-9.4
3 yr.	11.4	12.4
5 yr.	48.8	56.8

1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	© VALUE LINE PUB., INC.	11-13
18.37	21.55	21.69	19.30	22.19	24.16	23.74	20.92	22.19	29.80	32.63	42.45	42.93	44.94	53.96	53.51	*52.55*	*53.45*	Revenues per sh A	*54.60*
2.17	2.25	2.43	2.51	2.93	3.02	2.79	2.74	3.20	3.24	2.63	4.00	3.87	3.97	3.93	3.89	*4.25*	*4.35*	"Cash Flow" per sh	*4.55*
1.27	1.31	1.42	1.45	1.85	1.85	1.54	1.47	1.79	1.88	1.14	2.30	1.98	2.11	1.94	2.10	*2.40*	*2.45*	Earnings per sh B	*2.55*
1.07	1.09	1.11	1.12	1.14	1.17	1.20	1.22	1.24	1.26	1.27	1.28	1.30	1.32	1.34	1.37	*1.40*	*1.44*	Div'ds Decl'd per sh C■	*1.56*
2.17	2.43	2.84	2.63	2.85	3.20	3.62	3.42	2.67	2.68	3.34	2.65	2.33	2.32	3.27	3.33	*3.35*	*3.00*	Cap'l Spending per sh	*2.50*
10.66	11.04	11.51	11.95	12.79	13.48	13.86	14.72	15.31	16.24	15.78	16.25	16.95	17.80	18.28	19.83	*21.15*	*22.15*	Book Value per sh D	*25.40*
40.62	41.50	42.19	42.93	43.70	43.70	43.84	46.47	46.47	48.54	48.56	48.63	48.67	48.65	48.89	49.45	*49.50*	*49.60*	Common Shs Outst'g E	*50.00*
13.6	15.6	14.0	12.7	11.5	12.7	17.2	17.3	14.6	14.7	23.1	11.1	14.2	14.7	15.5	15.6	*Bold figures are*		Avg Ann'l P/E Ratio	*15.0*
.82	.92	.92	.85	.72	.73	.89	.99	.95	.75	1.26	.63	.75	.78	.84	.82	*Value Line*		Relative P/E Ratio	*1.00*
6.2%	5.3%	5.6%	6.1%	5.4%	5.0%	4.5%	4.8%	4.8%	4.6%	4.8%	5.0%	4.6%	4.2%	4.5%	4.2%	*estimates*		Avg Ann'l Div'd Yield	*4.2%*

CAPITAL STRUCTURE as of 6/30/08
Total Debt $695.8 mill. Due in 5 Yrs $399.5 mill.
LT Debt $600.5 mill. LT Interest $40.1 mill.
(LT interest earned: 6.7x; total interest coverage: 5.7x)
Pension Assets-9/07 $740.7 mill. Oblig. $680.3 mill.
Preferred Stock $28.2 mill. Pfd. Div'd $1.3 mill.

Common Stock 49,912,444 shs. as of 7/31/08

MARKET CAP: $1.6 billion (Mid Cap)

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009		11-13
1040.6	972.1	1031.1	1446.5	1584.8	2064.2	2089.6	2186.3	2637.9	2646.0	*2600*	*2650*	Revenues ($mill) A	*2730*
68.6	68.8	84.6	89.9	55.7	112.3	98.0	104.8	95.1	102.9	*120*	*122*	Net Profit ($mill)	*130*
35.6%	36.0%	36.1%	39.6%	34.0%	38.0%	38.2%	37.4%	39.0%	39.1%	*38.0%*	*38.0%*	Income Tax Rate	*38.0%*
6.6%	7.1%	8.2%	6.2%	3.5%	5.4%	4.7%	4.8%	3.6%	3.9%	*4.6%*	*4.6%*	Net Profit Margin	*4.7%*
40.3%	41.5%	43.1%	41.7%	45.7%	43.8%	40.9%	39.5%	38.5%	37.9%	*36.0%*	*34.5%*	Long-Term Debt Ratio	*32.0%*
57.1%	56.1%	54.8%	56.3%	52.4%	54.3%	57.2%	58.6%	61.5%	60.3%	*62.5%*	*63.5%*	Common Equity Ratio	*67.0%*
1064.8	1218.5	1299.2	1400.8	1462.5	1454.9	1443.6	1478.1	1497.8	1625.4	*1675*	*1730*	Total Capital ($mill)	*1895*
1319.5	1402.7	1460.3	1519.7	1606.8	1874.9	1915.6	1969.7	2067.9	2150.4	*2235*	*2325*	Net Plant ($mill)	*2615*
8.0%	7.1%	7.9%	7.9%	5.3%	9.1%	8.2%	8.5%	7.7%	7.6%	*8.5%*	*8.0%*	Return on Total Cap'l	*8.0%*
10.8%	9.7%	11.4%	11.0%	7.0%	13.7%	11.5%	11.7%	10.3%	10.2%	*11.5%*	*11.0%*	Return on Shr. Equity	*10.0%*
11.1%	9.9%	11.7%	11.2%	7.2%	14.0%	11.7%	12.0%	10.2%	10.4%	*12.0%*	*11.5%*	Return on Com Equity	*10.5%*
2.5%	1.8%	3.7%	3.8%	NMF	6.2%	4.1%	4.6%	3.1%	3.5%	*4.5%*	*4.5%*	Retained to Com Eq	*4.0%*
78%	82%	69%	67%	112%	56%	65%	62%	70%	66%	*58%*	*59%*	All Div'ds to Net Prof	*61%*

CURRENT POSITION ($MILL.)	2006	2007	6/30/08
Cash Assets	4.4	4.9	21.6
Other	556.9	568.8	698.7
Current Assets	561.3	573.7	720.3
Accts Payable	208.5	216.9	351.6
Debt Due	238.4	205.4	95.3
Other	113.9	134.8	177.8
Current Liab.	560.8	557.1	624.7
Fix. Chg. Cov.	465%	460%	460%

ANNUAL RATES of change (per sh)	Past 10 Yrs.	Past 5 Yrs.	Est'd '05-'07 to '11-'13
Revenues	9.0%	12.5%	*1.0%*
"Cash Flow"	3.5%	5.0%	*2.5%*
Earnings	2.0%	5.0%	*3.5%*
Dividends	1.5%	1.5%	*2.5%*
Book Value	4.0%	3.5%	*5.0%*

Fiscal Year Ends	QUARTERLY REVENUES ($ mill.) A Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	623.4	929.8	349.0	284.1	2186.3
2006	902.9	1064.5	346.9	323.6	2637.9
2007	732.9	1119.9	467.5	325.7	2646.0
2008	751.6	1020.0	464.7	*363.7*	*2600*
2009	*760*	*1050*	*480*	*360*	*2650*

Fiscal Year Ends	EARNINGS PER SHARE A B Dec.31	Mar.31	Jun.30	Sep.30	Full Fiscal Year
2005	.88	1.63	d.17	d.23	2.11
2006	.93	1.17	d.01	d.15	1.94
2007	.92	1.27	.22	d.31	2.10
2008	.96	1.66	.06	*d.28*	*2.40*
2009	*.97*	*1.50*	*.23*	*d.25*	*2.45*

Cal-endar	QUARTERLY DIVIDENDS PAID C■ Mar.31	Jun.30	Sep.30	Dec.31	Full Year
2004	.32	.325	.325	.325	1.30
2005	.325	.333	.333	.333	1.32
2006	.333	.338	.338	.338	1.34
2007	.34	.34	.34	.34	1.36
2008	.34	.36	.36		

BUSINESS: WGL Holdings, Inc. is the parent of Washington Gas Light, a natural gas distributor in Washington, D.C. and adjacent areas of VA and MD to resident'l and comm'l users (1,046,201 meters). Hampshire Gas, a federally regulated sub., operates an underground gas-storage facility in WV. Non-regulated subs.: Wash. Gas Energy Svcs. sells and delivers natural gas and provides energy related products in the D.C. metro area; Wash. Gas Energy Sys. designs/installs comm'l heating, ventilating, and air cond. systems. American Century Inv. own 8.2% of common stock; Off./dir. less than 1% (1/08 proxy). Chrmn. & CEO: J.H. DeGraffenreidt. Inc.: D.C. and VA. Addr.: 1100 H St., N.W., Washington, D.C. 20080. Tel.: 202-624-6410. Internet: www.wglholdings.com.

WGL Holdings posted lower-than-expected financial results for the June period. Revenues declined a bit, as warmer-than-normal weather led to weaker demand. Too, the company's electric volumes have slowed. Its retail energy marketing segment has been seeing a shift in its business mix away from larger commercial accounts toward an increasing retail residential base. Meanwhile, its regulated utility segment experienced diminished profitability as this unit was affected by the seasonal nature of the utility operations business. In all, WGL's third-quarter results were lackluster. Still, **The company ought to register a share-net advance of roughly 14% this year.** The earnings miss in the June period was offset by a solid performance during the first half of the year. Meanwhile, the implementation of new rates in Maryland, the increase in realized margins from the asset optimization program, and the addition of over 8,000 active customer meters since last year, all stand to benefit both the top and bottom lines in the remaining months of 2008. However, the economic slowdown may be an offsetting factor, as consumers begin to conserve energy in an effort to save money.

In 2009, WGL will likely experience low single-digit growth in revenues and earnings. Financial results should moderate a bit in the coming year. This trend will likely stem from the previously mentioned shift in the electric segment's customer mix. Meanwhile, the downturn in the U.S. housing and construction markets will likely continue to limit growth from new customer accounts. Too, rising commodity prices will remain an issue in the near term, as they may continue pressuring margins. However, the expansion of the company's asset management program should help offset those effects. Also, pending rate cases in Maryland ought to augur well for earnings.

These neutrally ranked shares may appeal to conservative income-oriented accounts. The equity offers an above-average dividend yield in relation to its peers. Furthermore, investors can take comfort in the stock's top mark for Price Stability (100), and Above-Average Safety rank (1).

Bryan Fong *September 12, 2008*

(A) Fiscal years end Sept. 30th.
(B) Based on diluted shares. Excludes nonrecurring losses: '01, (13¢); '02, (34¢); '07, (4¢) discontinued operations: '06, (15¢). Next earnings report due late Oct. (C) Dividends historically paid early February, May, August, and November. ■ Dividend reinvestment plan available.
(D) Includes deferred charges and intangibles. '07: $322.2 million, $6.51/sh.
(E) In millions, adjusted for stock split.

Company's Financial Strength	A
Stock's Price Stability	100
Price Growth Persistence	50
Earnings Predictability	65

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ATTACHMENT C

Zacks.com Quotes and Research

AMERICAN STS WTR CO (NYSE)

Scottrade

AWR	37.13	-0.65	(-1.72%)	Vol. 132,434	15:18 ET

American States is a public utility company engaged principally in thepurchase, production, distribution and sale of water. The company alsodistributes electricity in some communities. In the customer service areas for both water and electric, rates and operations are subject to the jurisdiction of the California Public Utilities Commission.

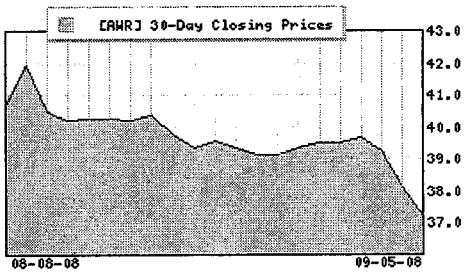
General Information

AMER STATES WTR
630 East Foothill Boulevard
San Dimas, CA 91773-1212
Phone: 909 394-3600
Fax: 909 394-0711
Web: www.gswater.com
Email: investorinfo@aswater.com

Industry	UTIL-WATER SPLY
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/06/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	37.78
52 Week High	46.14
52 Week Low	31.78
Beta	0.66
20 Day Moving Average	128,454.00
Target Price Consensus	42.67



% Price Change		% Price Change Relative to S&P 500	
4 Week	-9.85	4 Week	-7.19
12 Week	4.60	12 Week	12.22
YTD	0.27	YTD	16.60

Share Information		Dividend Information	
Shares Outstanding (millions)	17.25	Dividend Yield	2.65%
		Annual Dividend	$1.00
Market Capitalization (millions)	651.86	Payout Ratio	0.61
Short Ratio	10.63	Change in Payout Ratio	-0.15
Last Split Date	06/10/2002	Last Dividend Payout / Amount	08/06/2008 / $0.25

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.62	Current (1=Strong Buy, 5=Strong Sell)	2.40
Current Year EPS Consensus Estimate	1.79	30 Days Ago	2.25
Estimated Long-Term EPS Growth Rate	10.00	60 Days Ago	2.00
Next EPS Report Date	11/06/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	21.17	vs. Previous Year	28.57%	vs. Previous Year	1.35%
Trailing 12 Months:	23.18	vs. Previous Quarter	80.00%	vs. Previous Quarter:	16.49%
PEG Ratio	2.12				

Price Ratios		ROE		ROA	
Price/Book	2.11	06/30/08	9.33	06/30/08	2.90

Price/Cash Flow	11.72	03/31/08	8.81	03/31/08	2.73
Price / Sales	2.18	12/31/07	8.98	12/31/07	2.76
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.59	06/30/08	0.57	06/30/08	9.47
03/31/08	0.58	03/31/08	0.56	03/31/08	8.84
12/31/07	0.67	12/31/07	0.65	12/31/07	8.79
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	16.35	06/30/08	16.35	06/30/08	17.93
03/31/08	15.56	03/31/08	15.56	03/31/08	17.60
12/31/07	16.20	12/31/07	16.20	12/31/07	17.57
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	59.45	06/30/08	0.86	06/30/08	46.35
03/31/08	58.96	03/31/08	0.88	03/31/08	46.82
12/31/07	57.63	12/31/07	0.88	12/31/07	46.94

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CALIFORNIA WTR SVC GROUP (NYSE)

Scottrade

CWT	38.68	▼-0.06	(-0.15%)	Vol. 105,928	15:24 ET

California Water Service Company's business, which is carried on through its operating subsidiaries, consists of the production, purchase, storage, purification, distribution and sale of water for domestic, industrial, public and irrigation uses, and for fire protection. It also provides water related services under agreements with municipalities and other private companies. The nonregulated services include full water system operation, and billing and meter reading services.

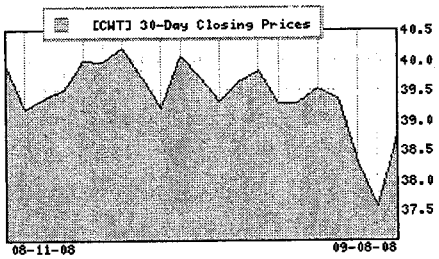
General Information

CALIF WATER SVC
1720 North First Street
San Jose, CA 95112
Phone: 408 367-8200
Fax: 408 437-9185
Web: www.calwatergroup.com
Email: klichtenberg@calwater.com

Industry	UTIL-WATER SPLY
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/05/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	38.74
52 Week High	44.50
52 Week Low	30.84
Beta	1.26
20 Day Moving Average	137,703.30
Target Price Consensus	43



% Price Change		% Price Change Relative to S&P 500	
4 Week	-2.98	4 Week	-0.11
12 Week	5.59	12 Week	13.28
YTD	4.65	YTD	19.92

Share Information		Dividend Information	
Shares Outstanding (millions)	20.72	Dividend Yield	3.02%
		Annual Dividend	$1.17
Market Capitalization (millions)	802.58	Payout Ratio	0.80
Short Ratio	10.24	Change in Payout Ratio	-0.06
Last Split Date	01/26/1998	Last Dividend Payout / Amount	07/31/2008 / $0.29

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.79	Current (1=Strong Buy, 5=Strong Sell)	1.67
Current Year EPS Consensus Estimate	1.67	30 Days Ago	1.40
Estimated Long-Term EPS Growth Rate	9.30	60 Days Ago	1.33
Next EPS Report Date	11/05/2008	90 Days Ago	1.57

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	23.20	vs. Previous Year	29.73%	vs. Previous Year	10.23%
Trailing 12 Months:	26.35	vs. Previous Quarter	4,700.00%	vs. Previous Quarter:	44.79%
PEG Ratio	2.51				

Price Ratios		ROE		ROA	
Price/Book	2.08	06/30/08	7.95	06/30/08	2.53
Price/Cash Flow	14.07	03/31/08	7.39	03/31/08	2.37
Price / Sales	2.12	12/31/07	7.80	12/31/07	2.51
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.61	06/30/08	0.57	06/30/08	8.05
03/31/08	0.65	03/31/08	0.59	03/31/08	7.62
12/31/07	-	12/31/07	-	12/31/07	8.03
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	-	06/30/08	-	06/30/08	18.60
03/31/08	-	03/31/08	-	03/31/08	18.38
12/31/07	-	12/31/07	-	12/31/07	-
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	-	06/30/08	0.75	06/30/08	42.57
03/31/08	-	03/31/08	0.76	03/31/08	42.94
12/31/07	-	12/31/07	-	12/31/07	-

Zacks.com Quotes and Research

SOUTHWEST WTR CO (NASD)

Scottrade

SWWC	10.90	▼-0.10	(-0.91%)	Vol. 54,796	15:25 ET

Southwest Water Company provides a broad range of utility and utility management services and serves people from coast to coast. Through its various subsidiaries, Southwest operates and manages water and wastewater treatment facilities along with providing utility submetering and billing and collection services.

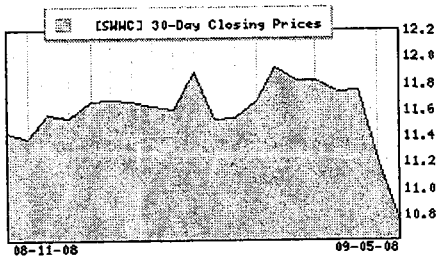
General Information

SOUTHWEST WATER
One Wilshire Building 624 South Grand Avenue
Suite 2900
Los Angeles, CA 90017-3782
Phone: 213 929-1800
Fax: 626-915-1558
Web: www.southwestwater.com
Email: swwc@swwc.com

Industry	UTIL-WATER SPLY
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/07/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	11.00
52 Week High	13.88
52 Week Low	9.41
Beta	0.50
20 Day Moving Average	82,427.25
Target Price Consensus	12



% Price Change		% Price Change Relative to S&P 500	
4 Week	-3.76	4 Week	-0.91
12 Week	5.26	12 Week	12.93
YTD	-12.14	YTD	1.30

Share Information		Dividend Information	
Shares Outstanding (millions)	24.59	Dividend Yield	2.18%
		Annual Dividend	$0.24
Market Capitalization (millions)	270.51	Payout Ratio	1.09
Short Ratio	21.08	Change in Payout Ratio	0.46
Last Split Date	12/28/2005	Last Dividend Payout / Amount	06/26/2008 / $0.06

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.13	Current (1=Strong Buy, 5=Strong Sell)	2.50
Current Year EPS Consensus Estimate	0.30	30 Days Ago	2.50
Estimated Long-Term EPS Growth Rate	8.50	60 Days Ago	3.00
Next EPS Report Date	11/07/2008	90 Days Ago	3.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	36.97	vs. Previous Year	-55.56%	vs. Previous Year	3.80%
Trailing 12 Months:	50.00	vs. Previous Quarter	500.00%	vs. Previous Quarter:	12.42%
PEG Ratio	4.35				

Price Ratios	ROE	ROA

Price/Book	1.72	06/30/08	3.39	06/30/08	1.03
Price/Cash Flow	13.45	03/31/08	4.13	03/31/08	1.30
Price / Sales	1.22	12/31/07	4.62	12/31/07	1.51
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.82	06/30/08	1.82	06/30/08	2.45
03/31/08	1.65	03/31/08	1.65	03/31/08	3.08
12/31/07	1.33	12/31/07	1.33	12/31/07	3.55
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	-3.43	06/30/08	-3.43	06/30/08	6.41
03/31/08	-2.54	03/31/08	-2.54	03/31/08	6.51
12/31/07	-1.94	12/31/07	-1.94	12/31/07	6.55
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	-	06/30/08	1.22	06/30/08	54.91
03/31/08	-	03/31/08	1.15	03/31/08	53.49
12/31/07	-	12/31/07	0.92	12/31/07	47.73

Proven Ratings, Research & Recommendations

Zacks.com Quotes and Research

AQUA AMERICA INC (NYSE)

Scottrade

WTR	17.26	▼-0.11	(-0.63%)	Vol. 1,062,185	15:28 ET

Aqua America is the largest publicly-traded U.S.-based water utility serving residents in Pennsylvania, Ohio, Illinois, Texas, New Jersey, Indiana, Virginia, Florida, North Carolina, Maine, Missouri, New York, South Carolina and Kentucky. The company has been committed to the preservation and improvement of the environment throughout its history, which spans more than 100 years.

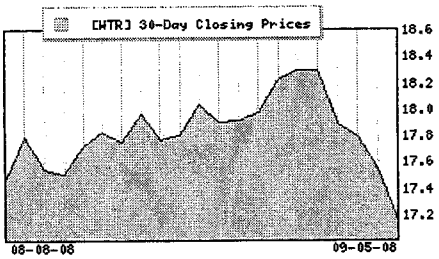
General Information

AQUA AMER INC
762 W Lancaster Avenue
Bryn Mawr, PA 19010-3489
Phone: 610 527-8000
Fax: 610-645-1061
Web: www.suburbanwater.com
Email: ir.aquaamerica.com

Industry	UTIL-WATER SPLY
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/05/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	17.37
52 Week High	25.10
52 Week Low	14.46
Beta	0.67
20 Day Moving Average	796,566.88
Target Price Consensus	22.25



% Price Change		% Price Change Relative to S&P 500	
4 Week	-2.36	4 Week	0.53
12 Week	3.09	12 Week	10.60
YTD	-18.07	YTD	-4.38

Share Information		Dividend Information	
Shares Outstanding (millions)	134.86	Dividend Yield	2.88%
		Annual Dividend	$0.50
Market Capitalization (millions)	2,342.52	Payout Ratio	0.72
Short Ratio	13.84	Change in Payout Ratio	0.10
Last Split Date	12/02/2005	Last Dividend Payout / Amount	08/14/2008 / $0.13

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.24	Current (1=Strong Buy, 5=Strong Sell)	1.89
Current Year EPS Consensus Estimate	0.73	30 Days Ago	2.00
Estimated Long-Term EPS Growth Rate	8.80	60 Days Ago	2.00
Next EPS Report Date	11/05/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	23.75	vs. Previous Year	-5.56%	vs. Previous Year	0.08%
Trailing 12 Months:	25.17	vs. Previous Quarter	54.55%	vs. Previous Quarter:	8.23%
PEG Ratio	2.70				

Price Ratios	ROE	ROA

Price/Book	2.27	06/30/08	9.26	06/30/08	2.84
Price/Cash Flow	12.65	03/31/08	9.57	03/31/08	2.92
Price / Sales	3.87	12/31/07	9.97	12/31/07	3.05
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.73	06/30/08	0.67	06/30/08	15.10
03/31/08	0.63	03/31/08	0.57	03/31/08	15.30
12/31/07	0.63	12/31/07	0.58	12/31/07	15.77
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	24.80	06/30/08	24.80	06/30/08	7.65
03/31/08	25.08	03/31/08	25.08	03/31/08	7.35
12/31/07	25.82	12/31/07	25.82	12/31/07	7.33
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	0.00	06/30/08	1.19	06/30/08	54.30
03/31/08	0.00	03/31/08	1.24	03/31/08	55.35
12/31/07	0.00	12/31/07	1.24	12/31/07	55.49

Zacks.com Quotes and Research

AGL RES INC (NYSE)

Scottrade

ATG	32.23	▼-0.39	(-1.20%)	Vol. 424,605	15:39 ET

AGL Resources principal business is the distribution of natural gas to customers in central, northwest, northeast and southeast Georgia and the Chattanooga, Tennessee area through its natural gas distribution subsidiary. AGL's major service area is the ten county metropolitan Atlanta area.

General Information

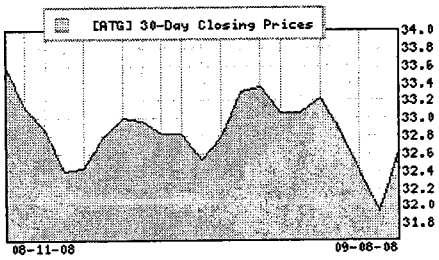
AGL RESOURCES
Ten Peachtree Place NE
Atlanta, GA 30309
Phone: 404 584-4000
Fax: 404 584-3945
Web: www.aglresources.com
Email: scave@aglresources.com

Industry	UTIL-GAS DISTR
Sector:	Utilities

Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/06/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	32.62
52 Week High	41.16
52 Week Low	31.37
Beta	0.33
20 Day Moving Average	472,252.34
Target Price Consensus	39.79



% Price Change		% Price Change Relative to S&P 500	
4 Week	-2.92	4 Week	-0.04
12 Week	-4.28	12 Week	2.69
YTD	-13.34	YTD	0.30

Share Information		Dividend Information	
Shares Outstanding (millions)	76.67	Dividend Yield	5.15%
		Annual Dividend	$1.68
Market Capitalization (millions)	2,501.01	Payout Ratio	0.67
Short Ratio	2.13	Change in Payout Ratio	0.11
Last Split Date	12/04/1995	Last Dividend Payout / Amount	08/13/2008 / $0.42

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.36	Current (1=Strong Buy, 5=Strong Sell)	2.14
Current Year EPS Consensus Estimate	2.75	30 Days Ago	2.14
Estimated Long-Term EPS Growth Rate	4.80	60 Days Ago	2.11
Next EPS Report Date	11/06/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	11.87	vs. Previous Year	-25.00%	vs. Previous Year	-4.93%
Trailing 12 Months:	13.10	vs. Previous Quarter	-74.14%	vs. Previous Quarter:	-56.13%
PEG Ratio	2.50				

Price Ratios		ROE		ROA	
Price/Book	1.48	06/30/08	11.42	06/30/08	3.08

Price/Cash Flow	7.04	03/31/08	11.86	03/31/08	3.29
Price / Sales	1.00	12/31/07	12.72	12/31/07	3.57
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.03	06/30/08	0.67	06/30/08	7.61
03/31/08	1.01	03/31/08	0.80	03/31/08	7.82
12/31/07	1.10	12/31/07	0.77	12/31/07	8.46
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	9.96	06/30/08	9.96	06/30/08	22.03
03/31/08	12.52	03/31/08	12.52	03/31/08	22.52
12/31/07	13.55	12/31/07	13.55	12/31/07	21.69
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	2.60	06/30/08	0.97	06/30/08	49.78
03/31/08	2.64	03/31/08	0.88	03/31/08	47.34
12/31/07	2.49	12/31/07	1.01	12/31/07	50.89

Zacks.com Quotes and Research

ATMOS ENERGY CORP (NYSE)

Scottrade

ATO	26.12	▼-0.39	(-1.47%)	Vol. 399,473	15:42 ET

Atmos Energy Corporation distributes and sells natural gas to residential, commercial, industrial, agricultural and other customers. Atmos operates through five divisions in cities, towns and communities in service areas located in Colorado, Georgia, Illinois, Iowa, Kansas, Kentucky, Louisiana, Missouri, South Carolina, Tennessee, Texas and Virginia. The Company has entered into an agreement to sell all of its natural gas utility operations in South Carolina. The Company also transports natural gas for others through its distribution system.

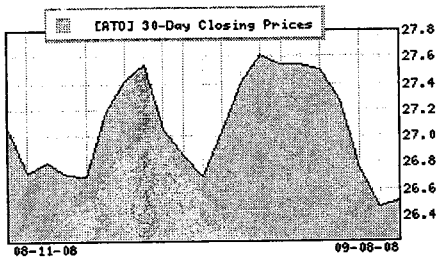
General Information

ATMOS ENERGY CP
Three Lincoln Centre, 5430 Lbj Freeway
Suite 1800
Dallas, TX 75240
Phone: 972 934-9227
Fax: 972 855-3040
Web: www.atmosenergy.com
Email: InvestorRelations@atmosenergy.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	September
Last Reported Quarter	06/30/08
Next EPS Date	11/05/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	26.51
52 Week High	29.63
52 Week Low	25.00
Beta	0.61
20 Day Moving Average	361,637.00
Target Price Consensus	28.83



% Price Change		% Price Change Relative to S&P 500	
4 Week	-2.10	4 Week	0.79
12 Week	-0.60	12 Week	6.64
YTD	-5.46	YTD	11.54

Share Information		Dividend Information	
Shares Outstanding (millions)	90.63	Dividend Yield	4.90%
		Annual Dividend	$1.30
Market Capitalization (millions)	2,402.55	Payout Ratio	0.67
Short Ratio	5.64	Change in Payout Ratio	0.00
Last Split Date	05/17/1994	Last Dividend Payout / Amount	08/21/2008 / $0.32

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.04	Current (1=Strong Buy, 5=Strong Sell)	2.50
Current Year EPS Consensus Estimate	1.97	30 Days Ago	2.30
Estimated Long-Term EPS Growth Rate	5.40	60 Days Ago	2.30
Next EPS Report Date	11/05/2008	90 Days Ago	2.30

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	13.47	vs. Previous Year	53.33%	vs. Previous Year	34.56%
Trailing 12 Months:	13.60	vs. Previous Quarter	-105.65%	vs. Previous Quarter:	-34.01%
PEG Ratio	2.48				

Price Ratios		ROE		ROA	
Price/Book	1.14	06/30/08	8.50	06/30/08	2.79
Price/Cash Flow	6.36	03/31/08	8.29	03/31/08	2.71
Price / Sales	0.35	12/31/07	8.14	12/31/07	2.67
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.20	06/30/08	0.71	06/30/08	2.58
03/31/08	1.22	03/31/08	0.87	03/31/08	2.64
12/31/07	1.14	12/31/07	0.72	12/31/07	2.74
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	3.92	06/30/08	3.92	06/30/08	23.34
03/31/08	4.00	03/31/08	4.00	03/31/08	23.63
12/31/07	4.22	12/31/07	4.22	12/31/07	22.62
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	10.64	06/30/08	1.01	06/30/08	50.17
03/31/08	10.40	03/31/08	1.00	03/31/08	49.93
12/31/07	9.87	12/31/07	1.05	12/31/07	51.11

Proven Ratings, Research & Recommendations

Zacks.com Quotes and Research

LACLEDE GROUP INC (NYSE)

Scottrade

LG	44.01	▼-0.21	(-0.47%)	Vol. 218,777	15:50 ET

The Laclede Group, Inc. is a public utility engaged in the retail distribution and transportation of natural gas. The Company, which is subject to the jurisdiction of the Missouri Public Service Commission, serves the City of St. Louis, St. Louis County, the City of St. Charles, St. Charles County, the town of Arnold, and parts of Franklin, Jefferson, St. Francois, Ste. Genevieve, Iron, Madison and Butler Counties, all in Missouri.

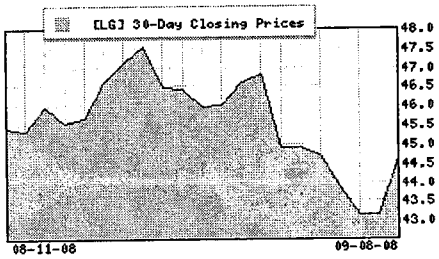
General Information

LACLEDE GRP INC
720 Olive Street
St. Louis, MO 63101
Phone: 314-342-0500
Fax: -
Web: www.thelacledegroup.com
Email: mkullman@lacledegas.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	September
Last Reported Quarter	06/30/08
Next EPS Date	10/24/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	44.22
52 Week High	47.98
52 Week Low	30.60
Beta	0.65
20 Day Moving Average	203,131.05
Target Price Consensus	N/A



% Price Change		% Price Change Relative to S&P 500	
4 Week	-1.78	4 Week	1.12
12 Week	11.31	12 Week	19.41
YTD	30.26	YTD	48.88

Share Information		Dividend Information	
Shares Outstanding (millions)	21.97	Dividend Yield	3.36%
		Annual Dividend	$1.50
Market Capitalization (millions)	979.95	Payout Ratio	0.53
Short Ratio	14.97	Change in Payout Ratio	-0.14
Last Split Date	03/08/1994	Last Dividend Payout / Amount	06/09/2008 / $0.38

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.08	Current (1=Strong Buy, 5=Strong Sell)	3.67
Current Year EPS Consensus Estimate	2.45	30 Days Ago	3.00
Estimated Long-Term EPS Growth Rate	10.00	60 Days Ago	3.00
Next EPS Report Date	10/24/2008	90 Days Ago	3.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	18.20	vs. Previous Year	-2.33%	vs. Previous Year	10.39%
Trailing 12 Months:	15.87	vs. Previous Quarter	-69.78%	vs. Previous Quarter:	-32.39%
PEG Ratio	1.82				

Price Ratios		ROE		ROA	
Price/Book	2.02	06/30/08	13.24	06/30/08	3.65

Price/Cash Flow	10.96	03/31/08	13.64	03/31/08	3.69
Price / Sales	0.46	12/31/07	11.91	12/31/07	3.20
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.32	06/30/08	0.98	06/30/08	2.86
03/31/08	1.29	03/31/08	1.16	03/31/08	2.94
12/31/07	1.02	12/31/07	0.73	12/31/07	2.55
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	4.21	06/30/08	4.21	06/30/08	22.13
03/31/08	4.41	03/31/08	4.41	03/31/08	22.06
12/31/07	3.84	12/31/07	3.84	12/31/07	20.32
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	14.15	06/30/08	0.64	06/30/08	39.01
03/31/08	14.24	03/31/08	0.74	03/31/08	42.49
12/31/07	13.60	12/31/07	0.81	12/31/07	44.63

Proven Ratings, Research & Recommendations

Zacks.com Quotes and Research

NEW JERSEY RES (NYSE)

Scottrade

NJR	35.76	▼-0.14	(-0.39%)	Vol. 277,651	15:52 ET

NJ RESOURCES is an exempt energy svcs holding company providing retail & wholesale natural gas & related energy services to customers from the Gulf Coast to New England. Subsidiaries include: (1) N J Natural Gas Co, a natural gas distribution company that provides regulated energy & appliance services to residential, commercial & industrial customers in central & northern N J. (2) NJR Energy Holdings Corp formerly NJR Energy Svcs Corp & (3) NJR Development Corp, a sub-holding company of NJR, which includes the Company's remaining unregulated operating subsidiaries.

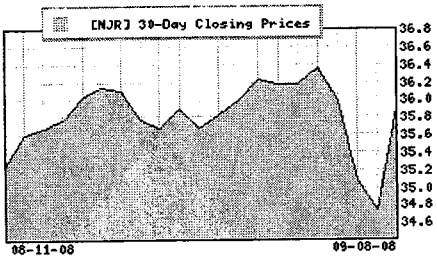
General Information

NJ RESOURCES
1415 Wyckoff Road
Wall, NJ 07719
Phone: 732 938-1480
Fax: 732 938-3154
Web: www.njresources.com
Email: investcont@njresources.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	September
Last Reported Quarter	06/30/08
Next EPS Date	11/13/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	35.90
52 Week High	37.00
52 Week Low	29.22
Beta	0.53
20 Day Moving Average	272,222.84
Target Price Consensus	35.5



% Price Change		% Price Change Relative to S&P 500	
4 Week	1.84	4 Week	4.86
12 Week	7.10	12 Week	14.90
YTD	7.66	YTD	23.14

Share Information		Dividend Information	
Shares Outstanding (millions)	42.03	Dividend Yield	3.12%
		Annual Dividend	$1.12
Market Capitalization (millions)	1,509.02	Payout Ratio	0.50
		Change in Payout Ratio	0.00
Short Ratio	15.32	Last Dividend Payout / Amount	06/11/2008 / $0.28
Last Split Date	03/04/2008		

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.41	Current (1=Strong Buy, 5=Strong Sell)	2.33
Current Year EPS Consensus Estimate	2.19	30 Days Ago	2.33
Estimated Long-Term EPS Growth Rate	8.00	60 Days Ago	2.00
Next EPS Report Date	11/13/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	16.39	vs. Previous Year	16.67%	vs. Previous Year	50.36%
Trailing 12 Months:	15.89	vs. Previous Quarter	-105.38%	vs. Previous Quarter:	-15.04%
PEG Ratio	2.05				

Price Ratios		ROE		ROA	
Price/Book	2.29	06/30/08	14.36	06/30/08	3.94
Price/Cash Flow	14.84	03/31/08	14.16	03/31/08	4.09
Price / Sales	0.42	12/31/07	14.64	12/31/07	4.26
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.15	06/30/08	0.79	06/30/08	2.65
03/31/08	1.10	03/31/08	0.81	03/31/08	2.89
12/31/07	1.12	12/31/07	0.63	12/31/07	3.12
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	-0.40	06/30/08	-0.40	06/30/08	15.69
03/31/08	-0.40	03/31/08	-0.40	03/31/08	16.04
12/31/07	3.42	12/31/07	3.42	12/31/07	16.07
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	8.90	06/30/08	0.73	06/30/08	42.27
03/31/08	7.87	03/31/08	0.53	03/31/08	34.78
12/31/07	6.88	12/31/07	0.54	12/31/07	34.93

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Scottrade

NICOR INC (NYSE)

GAS	46.04	▼-0.04	(-0.09%)	Vol. 1,327,056	15:54 ET

Nicor Inc. is a holding company and is a member of the Standard & Poor's 500 Index. Its primary business is Nicor Gas, one of the nation's largest natural gas distribution companies. Nicor owns Tropical Shipping, a containerized shipping business serving the Caribbean region and the Bahamas. In addition, the company owns and has an equity interest in several energy-related businesses.

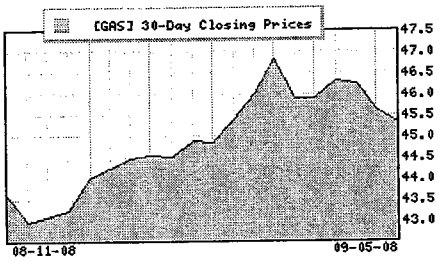
General Information

NICOR INC
1844 Ferry Road
Naperville, IL 60563-9600
Phone: 630-305-9500
Fax: 630-983-9328
Web: www.nicor.com
Email: None

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/06/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	46.08
52 Week High	46.84
52 Week Low	32.35
Beta	0.55
20 Day Moving Average	599,842.75
Target Price Consensus	41.56



% Price Change		% Price Change Relative to S&P 500	
4 Week	5.69	4 Week	8.82
12 Week	7.49	12 Week	15.32
YTD	8.81	YTD	26.40

Share Information		Dividend Information	
Shares Outstanding (millions)	45.15	Dividend Yield	4.04%
		Annual Dividend	$1.86
Market Capitalization (millions)	2,080.47	Payout Ratio	0.57
Short Ratio	9.04	Change in Payout Ratio	-0.19
Last Split Date	04/27/1993	Last Dividend Payout / Amount	06/26/2008 / $0.47

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.14	Current (1=Strong Buy, 5=Strong Sell)	3.25
Current Year EPS Consensus Estimate	2.37	30 Days Ago	3.50
Estimated Long-Term EPS Growth Rate	5.80	60 Days Ago	3.33
Next EPS Report Date	11/06/2008	90 Days Ago	3.20

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	19.47	vs. Previous Year	60.00%	vs. Previous Year	25.66%
Trailing 12 Months:	14.91	vs. Previous Quarter	-29.67%	vs. Previous Quarter:	-56.14%
PEG Ratio	3.39				

Price Ratios		ROE		ROA	
Price/Book	2.11	06/30/08	14.73	06/30/08	3.25

Price/Cash Flow	6.60	03/31/08	13.83	03/31/08	3.11
Price / Sales	0.58	12/31/07	14.12	12/31/07	3.21
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.80	06/30/08	0.75	06/30/08	3.92
03/31/08	0.80	03/31/08	0.78	03/31/08	3.76
12/31/07	0.80	12/31/07	0.68	12/31/07	4.09
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	5.27	06/30/08	5.27	06/30/08	21.81
03/31/08	5.07	03/31/08	5.07	03/31/08	21.53
12/31/07	5.80	12/31/07	5.80	12/31/07	20.95
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	24.11	06/30/08	0.38	06/30/08	27.46
03/31/08	24.66	03/31/08	0.38	03/31/08	27.71
12/31/07	22.95	12/31/07	0.45	12/31/07	30.89

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NORTHWEST NAT GAS CO (NYSE)

Scottrade

NWN	48.46	▼-0.26	(-0.53%)	Vol. 180,771	15:57 ET

NW Natural is principally engaged in the distribution of natural gas.The Oregon Public Utility Commission (OPUC) has allocated to NW Natural as its exclusive service area a major portion of western Oregon, including the Portland metropolitan area, most of the fertile Willamette Valley and the coastal area from Astoria to Coos Bay. NW Natural also holds certificates from the Washington Utilities and Transportation Commission (WUTC) granting it exclusive rights to serve portions of three Washington counties bordering the Columbia River.

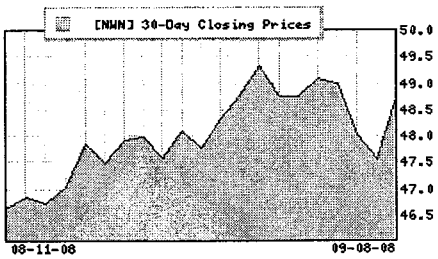
General Information

NORTHWEST NAT G
220 NW Second Avenue
Portland, OR 97209
Phone: 503 226-4211
Fax: 503 273-4824
Web: www.nwnatural.com
Email: Bob.Hess@nwnatural.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/06/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	48.72
52 Week High	50.89
52 Week Low	41.07
Beta	0.64
20 Day Moving Average	126,548.10
Target Price Consensus	52



% Price Change		% Price Change Relative to S&P 500	
4 Week	4.53	4 Week	7.62
12 Week	5.02	12 Week	12.67
YTD	0.12	YTD	15.48

Share Information		Dividend Information	
Shares Outstanding (millions)	26.43	Dividend Yield	3.08%
		Annual Dividend	$1.50
Market Capitalization (millions)	1,287.91	Payout Ratio	0.57
Short Ratio	14.30	Change in Payout Ratio	-0.07
Last Split Date	09/09/1996	Last Dividend Payout / Amount	07/29/2008 / $0.38

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.28	Current (1=Strong Buy, 5=Strong Sell)	1.80
Current Year EPS Consensus Estimate	2.58	30 Days Ago	1.80
Estimated Long-Term EPS Growth Rate	6.50	60 Days Ago	2.00
Next EPS Report Date	11/06/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	18.88	vs. Previous Year	20.00%	vs. Previous Year	4.37%
Trailing 12 Months:	18.39	vs. Previous Quarter	-92.64%	vs. Previous Quarter:	-50.67%
PEG Ratio	2.91				

Price Ratios	ROE	ROA

Price/Book	2.06	06/30/08	11.55	06/30/08	3.56
Price/Cash Flow	9.02	03/31/08	11.51	03/31/08	3.57
Price / Sales	1.24	12/31/07	12.31	12/31/07	3.87
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.65	06/30/08	0.49	06/30/08	6.79
03/31/08	0.76	03/31/08	0.65	03/31/08	6.78
12/31/07	0.71	12/31/07	0.50	12/31/07	7.21
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	10.81	06/30/08	10.81	06/30/08	23.64
03/31/08	10.80	03/31/08	10.80	03/31/08	23.83
12/31/07	11.47	12/31/07	11.47	12/31/07	22.48
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	10.39	06/30/08	0.82	06/30/08	45.05
03/31/08	9.50	03/31/08	0.81	03/31/08	44.86
12/31/07	9.07	12/31/07	0.86	12/31/07	46.26

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PIEDMONT NAT GAS INC (NYSE)

Scottrade

PNY	28.95	▲0.54	(1.90%)	Vol. 665,486	15:59 ET

Piedmont Natural Gas Co, Inc., is an energy and services company engaged in the transportation and sale of natural gas and the sale of propane to residential, commercial and industrial customers in North Carolina, South Carolina and Tennessee. The Company is the second-largest natural gas utility in the southeast. The Company and its non-utility subsidiaries and divisions are also engaged in acquiring, marketing and arranging for the transportation and storage of natural gas for large-volume purchasers, and in the sale of propane to customers in the Company's three-state service area.

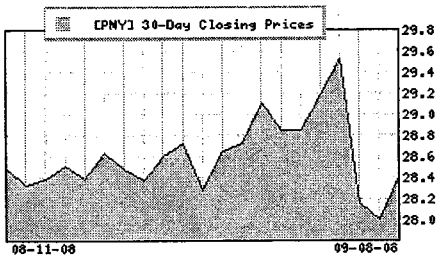
General Information

PIEDMONT NAT GA
4720 Piedmont Row Drive
Charlotte, NC 28210
Phone: 704 364-3120
Fax: 704-365-3849
Web: www.piedmontng.com
Email: margaret.griffith@piedmontng.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	October
Last Reported Quarter	07/31/08
Next EPS Date	12/26/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	28.41
52 Week High	29.74
52 Week Low	24.01
Beta	0.51
20 Day Moving Average	331,389.00
Target Price Consensus	28.6



% Price Change		% Price Change Relative to S&P 500	
4 Week	-0.28	4 Week	2.67
12 Week	4.99	12 Week	12.64
YTD	8.60	YTD	26.51

Share Information		Dividend Information	
Shares Outstanding (millions)	73.38	Dividend Yield	3.66%
		Annual Dividend	$1.04
Market Capitalization (millions)	2,084.64	Payout Ratio	0.00
Short Ratio	22.66	Change in Payout Ratio	0.00
Last Split Date	11/01/2004	Last Dividend Payout / Amount	06/23/2008 / $0.26

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.13	Current (1=Strong Buy, 5=Strong Sell)	2.20
Current Year EPS Consensus Estimate	1.51	30 Days Ago	1.80
Estimated Long-Term EPS Growth Rate	5.60	60 Days Ago	2.14
Next EPS Report Date	12/26/2008	90 Days Ago	2.57

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	18.83	vs. Previous Year	16.67%	vs. Previous Year	58.04%
Trailing 12 Months:	18.10	vs. Previous Quarter	-115.15%	vs. Previous Quarter:	-44.07%
PEG Ratio	3.36				

Price Ratios		ROE		ROA	
Price/Book	2.19	07/31/08	-	07/31/08	-
Price/Cash Flow	10.64	04/30/08	12.43	04/30/08	3.94
Price / Sales	1.01	01/31/08	12.80	01/31/08	4.10
Current Ratio		**Quick Ratio**		**Operating Margin**	
07/31/08	-	07/31/08	-	07/31/08	-
04/30/08	1.19	04/30/08	1.19	04/30/08	5.89
01/31/08	1.04	01/31/08	0.83	01/31/08	6.36
Net Margin		**Pre-Tax Margin**		**Book Value**	
07/31/08	-	07/31/08	-	07/31/08	-
04/30/08	8.04	04/30/08	8.04	04/30/08	12.96
01/31/08	10.44	01/31/08	10.44	01/31/08	12.57
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
07/31/08	-	07/31/08	-	07/31/08	-
04/30/08	12.87	04/30/08	0.87	04/30/08	46.44
01/31/08	9.41	01/31/08	0.90	01/31/08	47.24

Proven Ratings, Research & Recommendations

Zacks.com Quotes and Research

SOUTH JERSEY INDS INC (NYSE)

Scottrade

SJI	34.85	▲0.03	(0.09%)	Vol. 42,338	11:39 ET

South Jersey Inds Inc. is engaged in the business of operating, through subsidiaries, various business enterprises. The company's most significant subsidiary is South Jersey Gas Company (SJG). SJG is a public utility company engaged in the purchase, transmission and sale of natural gas for residential, commercial and industrial use. SJG also makes off-system sales of natural gas on a wholesale basis to various customers on the interstate pipeline system and transports natural gas.

General Information

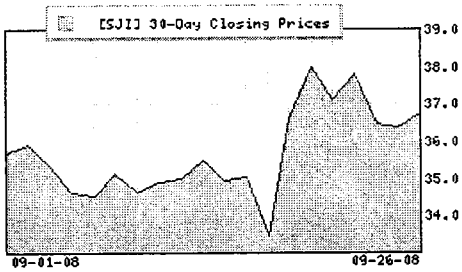
SOUTH JERSEY IN
1 South Jersey Plaza
Folsom, NJ 08037
Phone: 609 561-9000
Fax: 609 561-8225
Web: www.sjindustries.com
Email: sharehld@sjindustries.com

Industry	UTIL-GAS DISTR
Sector:	Utilities

Fiscal Year End	December
Last Reported Quarter	09/30/08
Next EPS Date	11/06/2008

Price and Volume Information

Zacks Rank	2
Yesterday's Close	34.82
52 Week High	39.36
52 Week Low	31.90
Beta	0.54
20 Day Moving Average	257,733.84
Target Price Consensus	40.33



% Price Change		% Price Change Relative to S&P 500	
4 Week	-2.38	4 Week	13.18
12 Week	-3.87	12 Week	8.81
YTD	-3.52	YTD	23.26

Share Information		Dividend Information	
Shares Outstanding (millions)	29.73	Dividend Yield	3.10%
		Annual Dividend	$1.08
Market Capitalization (millions)	1,035.16	Payout Ratio	0.50
Short Ratio	11.15	Change in Payout Ratio	-0.03
Last Split Date	07/01/2005	Last Dividend Payout / Amount	09/08/2008 / $0.27

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	0.09	Current (1=Strong Buy, 5=Strong Sell)	2.60
Current Year EPS Consensus Estimate	2.30	30 Days Ago	2.60
Estimated Long-Term EPS Growth Rate	7.80	60 Days Ago	1.80
Next EPS Report Date	11/06/2008	90 Days Ago	1.67

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	15.14	vs. Previous Year	23.81%	vs. Previous Year	-20.87%
Trailing 12 Months:	16.12	vs. Previous Quarter	-80.30%	vs. Previous Quarter:	-60.97%
PEG Ratio	1.95				

Price Ratios	ROE	ROA

Price/Book	2.16	06/30/08	13.31	06/30/08	4.16
Price/Cash Flow	10.88	03/31/08	13.08	03/31/08	4.14
Price / Sales	1.15	12/31/07	10.75	12/31/07	3.36
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.92	06/30/08	0.61	06/30/08	7.13
03/31/08	1.11	03/31/08	1.11	03/31/08	6.71
12/31/07	1.00	12/31/07	0.61	12/31/07	5.30
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	6.62	06/30/08	6.62	06/30/08	16.13
03/31/08	10.75	03/31/08	10.75	03/31/08	16.74
12/31/07	10.96	12/31/07	10.96	12/31/07	16.27
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	7.05	06/30/08	0.69	06/30/08	41.06
03/31/08	6.80	03/31/08	0.72	03/31/08	41.95
12/31/07	5.72	12/31/07	0.74	12/31/07	42.69

Zacks.com Quotes and Research

SOUTHWEST GAS CORP (NYSE)

Scottrade

SWX	30.14	▲0.24	(0.80%)	Vol. 402,269	16:04 ET

SOUTHWEST GAS CORP. is principally engaged in the business of purchasing,transporting, and distributing natural gas in portions of Arizona, Nevada,and California. The Company also engaged in financial services activities,through PriMerit Bank, Federal Savings Bank (PriMerit or the Bank), a wholly owned subsidiary.

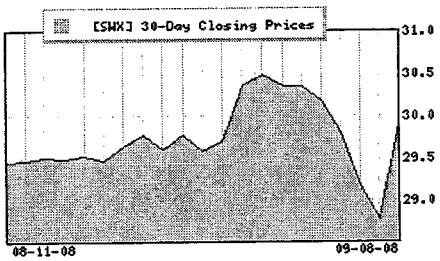
General Information

SOUTHWEST GAS
5241 Spring Mountain Road
P.O. Box 98510
Las Vegas, NV 89193-8510
Phone: 702 876-7237
Fax: 702-876-7037
Web: www.swgas.com
Email: None

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	December
Last Reported Quarter	06/30/08
Next EPS Date	11/11/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	29.90
52 Week High	31.74
52 Week Low	25.14
Beta	0.62
20 Day Moving Average	173,254.59
Target Price Consensus	33.88



% Price Change		% Price Change Relative to S&P 500	
4 Week	1.53	4 Week	4.53
12 Week	-1.58	12 Week	5.59
YTD	0.44	YTD	14.19

Share Information		Dividend Information	
Shares Outstanding (millions)	43.53	Dividend Yield	3.01%
		Annual Dividend	$0.90
Market Capitalization (millions)	1,301.64	Payout Ratio	0.48
Short Ratio	12.60	Change in Payout Ratio	-0.04
Last Split Date	N/A	Last Dividend Payout / Amount	08/13/2008 / $0.22

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.25	Current (1=Strong Buy, 5=Strong Sell)	2.50
Current Year EPS Consensus Estimate	2.03	30 Days Ago	2.50
Estimated Long-Term EPS Growth Rate	8.00	60 Days Ago	2.50
Next EPS Report Date	11/11/2008	90 Days Ago	2.50

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	14.74	vs. Previous Year	-500.00%	vs. Previous Year	4.87%
Trailing 12 Months:	16.08	vs. Previous Quarter	-105.26%	vs. Previous Quarter:	-45.02%
PEG Ratio	1.84				

Price Ratios		ROE		ROA	
Price/Book	1.26	06/30/08	8.05	06/30/08	2.27

Price/Cash Flow	4.80	03/31/08	8.45	03/31/08	2.35
Price / Sales	0.59	12/31/07	8.69	12/31/07	2.39
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	0.70	06/30/08	0.70	06/30/08	3.66
03/31/08	0.85	03/31/08	0.85	03/31/08	3.80
12/31/07	0.95	12/31/07	0.95	12/31/07	3.87
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	5.80	06/30/08	5.80	06/30/08	23.80
03/31/08	6.04	03/31/08	6.04	03/31/08	23.99
12/31/07	6.09	12/31/07	6.09	12/31/07	23.07
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	-	06/30/08	1.23	06/30/08	55.19
03/31/08	-	03/31/08	1.22	03/31/08	55.03
12/31/07	-	12/31/07	1.39	12/31/07	58.14

ZACKS INVESTMENT RESEARCH

Proven Ratings, Research & Recommendations

Zacks.com Quotes and Research

WGL HLDGS INC (NYSE)

Scottrade

WGL	32.48	▼-0.42	(-1.28%)	Vol. 640,569	16:02 ET

WASHINGTON GAS LIGHT CO is a public utility that delivers and sells natural gas to metropolitan Washington, D.C. and adjoining areas in Maryland and Virginia. A distribution subsidiary serves portions of Virginia and West Virginia. The Company has four wholly-owned active subsidiaries that include: Shenandoah Gas Company (Shenandoah) is engaged in the delivery and sale of natural gas at retail in the Shenandoah Valley, including Winchester, Middletown, Strasburg, Stephens City and New Market, Virginia, and Martinsburg, West Virginia.

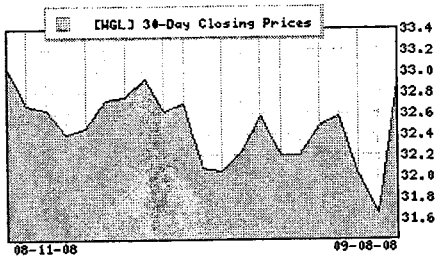
General Information

WGL HLDGS INC
101 Constitution Avenue NW
Washington, DC 20080
Phone: 703 750-2000
Fax: 703 750-4828
Web: www.wglholdings.com
Email: madams@washgas.com

Industry	UTIL-GAS DISTR
Sector:	Utilities
Fiscal Year End	September
Last Reported Quarter	06/30/08
Next EPS Date	11/05/2008

Price and Volume Information

Zacks Rank	
Yesterday's Close	32.90
52 Week High	36.22
52 Week Low	30.26
Beta	0.66
20 Day Moving Average	471,249.25
Target Price Consensus	34



% Price Change		% Price Change Relative to S&P 500	
4 Week	-0.39	4 Week	2.55
12 Week	-6.67	12 Week	0.13
YTD	0.43	YTD	14.15

Share Information		Dividend Information	
Shares Outstanding (millions)	49.91	Dividend Yield	4.32%
		Annual Dividend	$1.42
Market Capitalization (millions)	1,642.10	Payout Ratio	0.60
Short Ratio	9.46	Change in Payout Ratio	-0.08
Last Split Date	05/02/1995	Last Dividend Payout / Amount	07/08/2008 / $0.35

EPS Information		Consensus Recommendations	
Current Quarter EPS Consensus Estimate	-0.33	Current (1=Strong Buy, 5=Strong Sell)	2.25
Current Year EPS Consensus Estimate	2.35	30 Days Ago	2.25
Estimated Long-Term EPS Growth Rate	7.50	60 Days Ago	2.00
Next EPS Report Date	11/05/2008	90 Days Ago	2.00

Fundamental Ratios

P/E		EPS Growth		Sales Growth	
Current FY Estimate:	13.99	vs. Previous Year	-72.73%	vs. Previous Year	-0.60%
Trailing 12 Months:	13.88	vs. Previous Quarter	-96.39%	vs. Previous Quarter:	-54.45%
PEG Ratio	1.87				

Price Ratios	ROE	ROA

Price/Book	1.51	06/30/08	11.37	06/30/08	3.64
Price/Cash Flow	8.07	03/31/08	12.32	03/31/08	4.00
Price / Sales	0.64	12/31/07	10.53	12/31/07	3.41
Current Ratio		**Quick Ratio**		**Operating Margin**	
06/30/08	1.15	06/30/08	0.71	06/30/08	4.60
03/31/08	1.15	03/31/08	0.98	03/31/08	4.90
12/31/07	0.88	12/31/07	-	12/31/07	3.96
Net Margin		**Pre-Tax Margin**		**Book Value**	
06/30/08	7.32	06/30/08	7.32	06/30/08	21.72
03/31/08	8.23	03/31/08	8.23	03/31/08	21.80
12/31/07	6.81	12/31/07	6.81	12/31/07	20.49
Inventory Turnover		**Debt-to-Equity**		**Debt to Captial**	
06/30/08	7.96	06/30/08	0.56	06/30/08	35.26
03/31/08	8.82	03/31/08	0.55	03/31/08	35.06
12/31/07	9.33	12/31/07	0.59	12/31/07	36.30

ATTACHMENT D

Infrastructure costs in the Water Utility Industry will continue to rise over the long term. Larger companies will acquire smaller ones in an effort to achieve economies of scale.

Foreign companies had been buying a number of U.S. water utilities, but that trend appears to be waning.

Water utility stocks are ranked to underperform the market over the coming 12 months; however, conservative investors can find attractive risk-adjusted choices here.

The Need For Consolidation

Long-term trends in the Water Utility Industry indicate that infrastructure costs will steadily rise. Many of the facilities and pipes that now purify and transport drinking water were built about 100 years ago. Ongoing upgrading and replacement are necessary for these old systems to remain in compliance with rules laid out by the Environmental Protection Agency (EPA). The cost of fixing and upgrading these systems is significantly higher than in the past (even adjusting for inflation) because more-expensive materials need to be used for modern construction. Moreover, transportation costs are much higher and should continue to rise, as nearby sources of water are depleted and farther-away bodies of water must be used. Water is quite difficult and expensive to move because it is heavy and cannot be compressed. Also adding to industry costs is the ongoing issuance of guidelines from the EPA that typically require water utilities to comply with more-stringent water-purity standards. Industry sources estimate that about $140 billion will be needed over the next 20 years to fund necessary water-system infrastructure improvements.

Small and mid-sized water companies usually welcome large-scale suitors. Smaller utilities generally lack the funds needed for long-term structural improvements, and might risk being out of compliance with local and federal laws at some point down the road. In an effort to prevent this unpleasant scenario from happening, many of these smaller companies welcome larger utilities that have the capital resources to remain in compliance with the law. The larger company gains greater geographic diversity from its acquisitions, which helps lessen its susceptibility to weather fluctuations that might cause volatility in earnings. Acquirers also benefit from economies of scale in which costs are

INDUSTRY TIMELINESS: 81 (of 92)

generally reduced. Too, the regulatory-intensive nature of the Water Utility Industry means that some specific local governments might be more uncooperative with the utilities than other comparable local officials. A larger territory lessens the impact of a particularly onerous regulatory atmosphere.

Acquisition Update

Foreign companies have purchased a large number of domestic water utilities over the past year. These global water companies are attracted to this country's relatively safe political climate and its trend towards the privatization of municipal water and wastewater systems. Currently, there is concern among investors that the large premiums paid for U.S. takeover targets, which approached three times book value, will become more infrequent. British utilities are having regulatory difficulties at home that stand to weaken their designs on the U.S. market. Consequently, there appear to be fewer bidders in the market.

SDWA Regulations

The Safe Drinking Water Act (SDWA) of 1974 (amended in 1996) authorized the EPA to work with state and local governments to test for five potential impurities in drinking water every five years. The EPA mandates what levels of a certain contaminant is acceptable per a specified amount of water. Water utilities typically spend about 15% to 50% of their annual capital outlays in efforts to comply with SDWA guidelines. These companies must also stay in compliance with the Clean Water Act, and numerous state and local laws. At present, the EPA is considering lowering the allowable level of arsenic in drinking water from 50 parts per billion (ppb) to 5 ppb. This measure would be controversial because it would be lower than the standard of the World Health Organization (10 ppb) and would potentially cost domestic water companies billions of dollars.

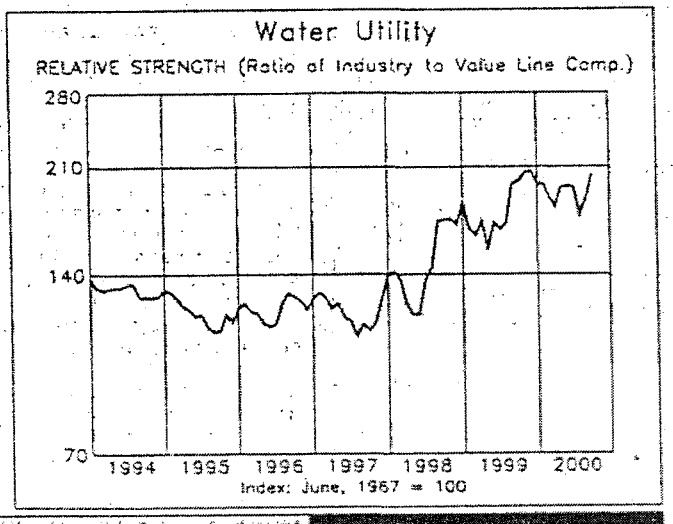
Investment Advice

Most of the water utility stocks that are covered in this review are not timely for the coming six to 12 months. Nonetheless, favorable Safety ranks among the group make some of these issues appealing for risk-averse investors seeking decent dividend yields.

Joseph Espaillat

Composite Statistics: Water Utility Industry

1996	1997	1998	1999	2000	2001		03-05
1793.9	1924.7	1994.2	2422.6	*2550*	*2750*	Revenues ($mill)	*3500*
214.4	2.92	265.6	295.3	*315*	*335*	Net Profit ($mill)	*415*
39.2%	37.8%	37.0%	38.2%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
7.0%	6.3%	7.5%	8.7%	*6.0%*	*6.0%*	AFUDC % to Net Profit	*6.0%*
55.7%	56.6%	56.9%	55.3%	*53.0%*	*52.0%*	Long-Term Debt Ratio	*50.0%*
40.0%	39.6%	39.7%	42.0%	*45.0%*	*46.0%*	Common Equity Ratio	*48.0%*
5271.8	5703.3	6188.6	7223.7	*7300*	*7900*	Total Capital ($mill)	*9300*
6377.2	6785.5	7361.9	8961.3	*8700*	*9300*	Net Plant ($mill)	*9700*
6.0%	6.2%	6.2%	6.0%	*6.5%*	*7.0%*	Return on Total Cap'l	*7.5%*
9.2%	9.7%	10.0%	9.3%	*10.5%*	*10.5%*	Return on Shr. Equity	*11.5%*
9.7%	10.2%	10.4%	9.5%	*11.0%*	*11.0%*	Return on Com Equity	*12.0%*
3.3%	3.6%	3.9%	3.2%	*3.5%*	*3.5%*	Retained to Com Eq	*4.5%*
68%	66%	64%	67%	*70%*	*70%*	All Div'ds to Net Prof	*60%*
14.5	15.8	18.3	20.2	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.0*
.91	.91	.96	1.15			Relative P/E Ratio	*.85*
4.6%	4.1%	3.4%	3.3%			Avg Ann'l Div'd Yield	*5.0%*



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The events of September 11th have altered many priorities in the Water Utility Industry.

Long-term trends in the industry indicate that the cost of maintaining and upgrading water/wastewater systems will rise. The industry is consolidating, with larger companies acquiring smaller operators to achieve economies of scale.

Water Utility stocks are ranked to underperform the year-ahead market, though some of these issues offer conservative investors appealing risk-adjusted, total-return potential.

INDUSTRY TIMELINESS: 85 (of 97)

Security Issues

In response to the events of September 11th, the need to secure water systems against terrorism has become a top priority for regulators and water utilities alike, pushing many other legislative issues to the side. The FBI has stated that water companies should be on alert for potential threats in the months ahead. Many water companies are already heeding this warning, and incurring additional costs in the process that may limit near-term bottom-line growth. Also, the industry and regulators are working together to provide approximately $5 billion in federal funds for immediate infrastructure improvements as part of the pending economic stimulus legislation.

Industry Consolidation

Infrastructure costs in the Water Utility Industry will likely rise dramatically over the next 20 years. These companies have to maintain and upgrade their systems continually in order to remain in compliance with increasingly stringent rules issued by the Environmental Protection Agency (EPA) and local regulators. Many of the facilities and pipes that now treat and transport drinking water were built about a century ago. The costs of replacing those systems are significantly higher these days, even adjusting for inflation. Adding to the cost is the fact that nearby bodies of water tend to get depleted and expensive to use, so more-distant sources of water must be brought in to keep up with increasing demand for purified water. Water is difficult and costly to transport, since it is heavy and incompressible. All in all, industry sources estimate that over $140 billion will be needed to upgrade the nation's water-distribution system over the next 20 years.

The costs of staying in compliance with drinking water laws are especially onerous for smaller regional operators, since they have a limited base of customers over which to spread these costs. Small and mid-sized utilities generally welcome takeover offers from larger acquirers because of their superior capital resources. The acquiring utility attempts to achieve economies of scale through the transactions. Also, it gains greater geographic diversity, and that can reduce its susceptibility to unfavorable weather patterns and potentially burdensome local regulators.

Large-scale foreign acquirers have been very interested in purchasing domestic water utilities over the past few years, and the latest evidence is the generous takeover offer RWE AG made for *American Water Works*, the nation's largest public water company. RWE, a Germany-based firm, stands to gain cost synergies in the deal, along with geographic diversity in a politically stable country. Foreign utilities have been fascinated with the risk-adjusted earnings potential of U.S. water companies, and they are likely to continuing their buying spree over the next few years. As such, the number of investor-owned water providers with large territories is steadily dwindling. This development gives additional hope to those U.S. water utilities and investors looking for substantial buyout offers.

SDWA Regulations

The Safe Drinking Water Act (SDWA) of 1974 (amended in 1996) authorizes the EPA to work with state and local governments to test for five potential impurities in drinking water every five years. The EPA mandates what levels of a certain contaminant is acceptable per a specified amount of water. Water utilities usually spend a significant portion of their annual capital budgets on efforts to stay in compliance with SDWA guidelines. These companies must also comply with the Clean Water Act, and numerous state and local laws.

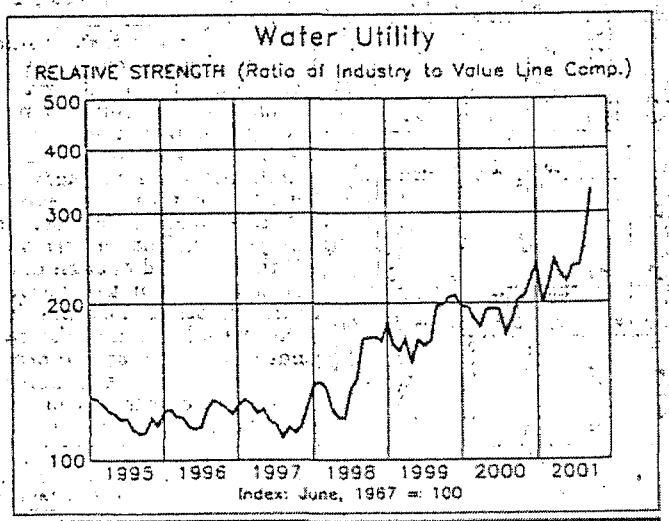
Investment Advice

The Water Utility stocks in this review are not timely for investment over the next six to 12 months. Nonetheless, a few of these issues possess favorable Safety ranks and solid dividend-growth prospects that may appeal to conservative investors.

Joseph Espaillat

Composite Statistics: Water Utility Industry

1997	1998	1999	2000	2001	2002		04-06
1439.5	1503.1	1898.0	2054.9	*2210*	*2315*	Revenues ($mill)	*2895*
163.2	192.9	232.3	254.2	*270*	*295*	Net Profit ($mill)	*410*
38.4%	39.1%	39.7%	40.1%	*40.0%*	*40.0%*	Income Tax Rate	*40.0%*
6.4%	7.9%	9.6%	5.5%	*6.5%*	*6.5%*	AFUDC % to Net Profit	*7.5%*
57.3%	58.0%	56.2%	54.9%	*54.5%*	*54.0%*	Long-Term Debt Ratio	*53.0%*
40.0%	39.7%	41.9%	44.0%	*44.5%*	*45.0%*	Common Equity Ratio	*46.0%*
4113.2	4524.6	5566.3	5654.6	*6055*	*6335*	Total Capital ($mill)	*7495*
5069.2	5544.7	7039.7	7545.4	*7975*	*8425*	Net Plant ($mill)	*9935*
6.5%	6.3%	6.2%	6.6%	*6.0%*	*6.0%*	Return on Total Cap'l	*6.5%*
10.4%	10.2%	9.6%	9.8%	*10.5%*	*11.0%*	Return on Shr. Equity	*11.5%*
10.9%	10.5%	9.8%	9.9%	*10.5%*	*11.0%*	Return on Com Equity	*11.5%*
4.7%	4.4%	4.1%	4.0%	*4.5%*	*4.5%*	Retained to Com Eq	*5.0%*
57%	58%	59%	61%	*60%*	*59%*	All Div'ds to Net Prof	*52%*
15.2	19.4	19.2	16.3	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.5*
.88	1.01	1.09	1.08			Relative P/E Ratio	*.90*
3.7%	3.0%	3.0%	3.7%			Avg Ann'l Div'd Yield	*3.0%*



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Infrastructure costs in the Water Utility Industry will rise considerably over the coming 20 years. Consequently, larger companies are buying smaller ones in an attempt to achieve economies of scale.

Water utility stocks are ranked to perform in the middle of the pack over the coming 12 months. Nonetheless, conservative investors can find above-average Safety ranks and attractive dividends in the group.

INDUSTRY TIMELINESS: 54 (of 98)

Industry Consolidation

Infrastructure costs in the water utility industry will likely soar over the next two decades. These companies must constantly repair and upgrade their existing water/wastewater systems in order to comply with increasingly strict rules issued by the Environmental Protection Agency (EPA) and local regulators. Many of the facilities and pipes that transport water were constructed over 100 years ago. The costs of replacing these systems is considerably higher now than it was in the past, even adjusting for inflation. Too, the ongoing depletion of nearby sources of water forces many water utilities to obtain water from more-distant, more-expensive sources. Water is difficult and costly to transport because it is heavy and incompressible. Nonetheless, utilities must continue to keep pace with rising demand for drinking water from growing residential and industrial customers. Recent estimates are that it will cost hundreds of billions of dollars to replace and upgrade failing water infrastructures over the next 20 years. This amounts to more than the entire current assets of the water industry in America. Much of these costs will likely be financed by federal spending and higher water rates. Nevertheless, water utilities are going to have to ante up much higher capital investments over the coming years.

The costs of staying in compliance with drinking water laws are especially onerous for smaller regional companies because they have fewer customers over which to spread their costs. Small and mid-sized water utilities tend to welcome takeover offers from larger, better-capitalized companies so that they can utilize the bigger firm's superior resources. For instance, the EPA's new rules on the allowable levels of arsenic in drinking water (10 parts per billion by January, 2006) is compelling some smaller utilities to merge with larger ones in an effort to remain in compliance with the new standards. By purchasing these smaller entities, large utilities seek to achieve economies of scale. Also, a bigger company gains greater geographic diversity that can reduce its susceptibility to unfavorable weather patterns and potentially burdensome local regulators. For example, the regulatory climate in California has been extra costly for utilities in the past couple of years, so companies, such as *California Water*, have been actively looking for acquisition targets outside of the state. On a positive note, the passage of a new law in California will allow water utilities to charge higher rates to customers (subject to refund) if regulators do not render decisions on rate cases within established processing periods. This ought to improve revenues for three out of four companies in this review.

Recent Challenges

The events of September 11, 2001 have introduced a whole new set of challenges for the industry. Companies have been spending a lot of time, energy, and money on making sure that their water systems are reasonably secure from potential terrorist attacks. Utilities have turned to local and federal regulators for reimbursement and additional funding, but the amount and timing of future funds is uncertain. Also, insurance costs have soared in the past year, as insurers are now more reluctant to cover companies, like water utilities, that can potentially have catastrophic losses.

SDWA Regulations

The Safe Drinking Water Act (SDWA) of 1974 (amended in 1996) authorizes the EPA to work with state and local governments to test for potential impurities in drinking water. The EPA mandates what particular level of a certain contaminant is acceptable per a specified amount of water. Water utilities routinely spend large portions of their annual capital expenditures on efforts to remain in compliance with SDWA guidelines. These companies must also comply with the 1972 Clean Water Act, and numerous other state and local laws, another costly endeavor.

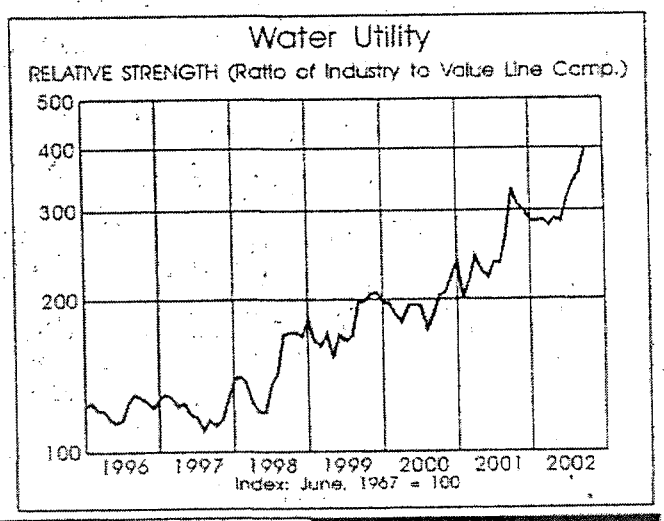
Decent Grounds For Conservative Investors

The water-utility stocks in this review are unlikely to outperform the year-ahead market. Nonetheless, they offer above-average Safety ranks, attractive dividend yields, and decent risk-adjusted total-return potential.

Joseph Espaillat

Composite Statistics: Water Utility Industry

1998	1999	2000	2001	2002	2003		05-07
1503.1	1898.0	2054.9	2190.5	*2495*	*2710*	Revenues ($mill)	*3360*
192.9	232.3	249.7	261.8	*275*	*315*	Net Profit ($mill)	*465*
39.1%	39.7%	40.1%	39.5%	*41.5%*	*40.0%*	Income Tax Rate	*40.0%*
7.9%	9.5%	5.5%	3.4%	*2.0%*	*2.0%*	AFUDC % to Net Profit	*3.0%*
58.0%	56.2%	54.9%	56.7%	*57.0%*	*56.0%*	Long-Term Debt Ratio	*52.5%*
39.6%	41.9%	44.0%	42.4%	*42.0%*	*43.0%*	Common Equity Ratio	*47.0%*
4524.6	5566.3	5654.6	6198.1	*7005*	*7085*	Total Capital ($mill)	*8780*
5544.7	7039.7	7545.4	7991.2	*9210*	*9940*	Net Plant ($mill)	*12085*
6.3%	6.2%	6.6%	6.3%	*6.0%*	*6.5%*	Return on Total Cap'l	*7.0%*
10.2%	9.6%	9.8%	9.8%	*10.0%*	*10.5%*	Return on Shr. Equity	*11.5%*
10.5%	9.8%	9.9%	9.9%	*10.0%*	*10.5%*	Return on Com Equity	*11.5%*
4.4%	4.1%	4.0%	3.9%	*3.0%*	*4.5%*	Retained to Com Eq	*6.0%*
59%	59%	60%	61%	*61%*	*58%*	All Div'ds to Net Prof	*47%*
19.4	19.2	16.3	20.9	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.5*
1.01	1.09	1.06	1.07			Relative P/E Ratio	*.90*
3.0%	3.0%	3.7%	2.9%			Avg Ann'l Div'd Yield	*3.0%*



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The Water Utility Industry's consolidation continues to gain momentum, as industry leaders look for opportunities to buy out smaller companies that are struggling to keep up with escalating infrastructure costs and heightened regulatory requirements.

Water Utility stocks are unlikely to outperform the broad market for the year ahead. With that said, however, some of these issues offer conservative investors attractive risk-adjusted, total-return potential.

INDUSTRY TIMELINESS: 97 (of 98)

Government Regulations

In order to keep water supplies safe, national purification standards have been established that the water industry is required to meet. Amended in 1996, the Safe Drinking Water Act (SDWA) of 1974 authorizes the Environmental Protection Agency (EPA) to work with state and local governments to periodically test for impurities in drinking water and regulate the levels of contaminants that are acceptable per a specified amount of water. These standards take into account the health effects of chemicals, measurement capabilities, and technical feasibility. One of the most significant contaminants that the industry screens for is arsenic, a naturally occurring substance. However, the EPA is in the process of lowering the tolerated amount of arsenic to 10 parts per billion from 20 parts currently. The change is expected to be in effect by January, 2006. Large chunks of water utilities' annual capital budgets are already spent on infrastructure maintenance and improvements in order to stay in compliance with the SDWA, the Clean Water Act, and numerous state and local laws. This percentage is likely to climb even higher, as fears of terrorism have prompted officials to further tighten regulation requirements.

Rising Infrastructure Costs

Along with the necessity to remain in compliance with increasingly strict water purity standards, water companies are also being pressured to continually upgrade aging facilities. Many of the water/wastewater systems that are presently in use were built over 100 years ago and are growing outdated. The costs associated with replacing these systems are dramatically higher now than when they initially were put in place. The EPA and other industry sources indicate that hundreds of billions of dollars over the next 20 years will be needed to repair the nation's entire water system. The Water Infrastructure Network believes that there will be a $12 billion annual shortfall for wastewater infrastructure over that period, and long-term help from the federal government is needed to solve the problem. Water companies will most likely foot the majority of the bill, though, as budget deficits at state and local levels will limit funds dedicated to the industry.

Industry Consolidation

With the costs of meeting safe drinking water guidelines on the rise, many smaller companies lack the funds to commit to long-term structural improvements. As such, these smaller water companies have been increasingly willing to accept takeover offers from larger suitors with significantly greater capital resources. The larger utilities benefit from economies of scale, which enables them to reduce overhead. In addition, the acquisitions usually enhance geographic diversity, reducing a company's vulnerability to weather fluctuations. Then, too, a multistate territory helps to alleviate a company's exposure to especially onerous regulatory atmospheres. Large foreign utilities have been particularly active in recent years, swallowing up domestic water companies in an effort to gain exposure to the United States' steady population growth.

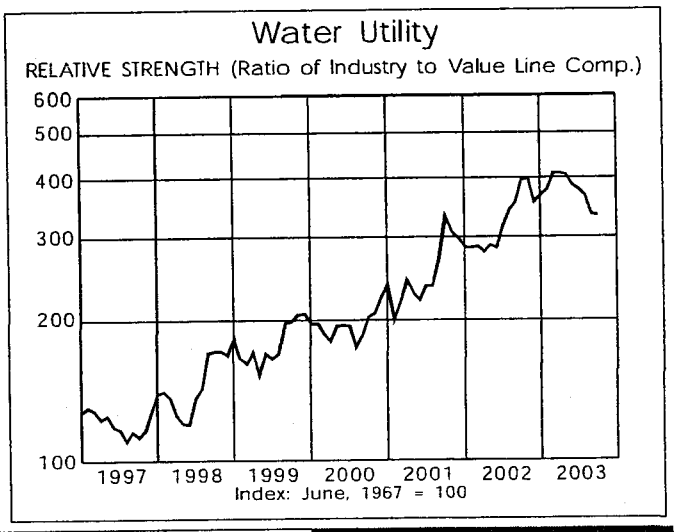
Investment Advice

None of the stocks under review are timely at this juncture, as poor weather conditions have resulted in inconsistent earnings patterns. Although *Philadelphia Suburban, California Water Services Group, and American States Water* all have below-average total-return potential out to 2006-2008, income-oriented investors might may find one of these stocks attractive, given their favorable risk profile. Income-bearing stocks have gained some additional popularity of late, because of the recent federal tax bill that reduced the top rate investors pay on dividend income to 15%. As usual, though, we recommend that potential investors careful review individual reports before making any new commitments.

Andre J. Costanza

Composite Statistics: Water Utility Industry

1999	2000	2001	2002	2003	2004		06-08
637.2	704.3	751.8	794.4	*845*	*950*	Revenues ($mill)	*1185*
72.4	90.9	95.4	106.6	*105*	*130*	Net Profit ($mill)	*190*
40.0%	41.2%	40.2%	38.8%	*39.0%*	*39.5%*	Income Tax Rate	*40.0%*
--	--	--	--	*Nil*	*.5%*	AFUDC % to Net Profit	*.5%*
51.1%	50.3%	52.4%	53.9%	*53.0%*	*51.5%*	Long-Term Debt Ratio	*51.0%*
48.3%	49.3%	47.2%	45.9%	*46.5%*	*48.5%*	Common Equity Ratio	*49.0%*
1444.7	1661.0	1840.7	1973.6	*2250*	*2425*	Total Capital ($mill)	*3050*
2100.3	2342.5	2532.3	2751.1	*3025*	*3225*	Net Plant ($mill)	*3950*
7.4%	7.0%	6.8%	7.0%	*6.5%*	*7.0%*	Return on Total Cap'l	*7.5%*
11.5%	10.7%	10.6%	11.2%	*10.0%*	*10.5%*	Return on Shr. Equity	*12.0%*
11.5%	10.8%	10.7%	11.2%	*10.0%*	*11.0%*	Return on Com Equity	*12.0%*
3.8%	3.6%	3.3%	3.9%	*3.0%*	*4.0%*	Retained to Com Eq	*5.5%*
68%	67%	69%	66%	*75%*	*65%*	All Div'ds to Net Prof	*54%*
19.5	18.6	22.6	21.5	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*13.5*
1.11	1.21	1.16	1.17			Relative P/E Ratio	*.90*
3.5%	3.6%	3.1%	3.1%			Avg Ann'l Div'd Yield	*3.0%*



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The Water Utility industry continues to rank near the bottom of the *Value Line* investment universe. Infrastructure costs will limit earnings for at least the near future, as the high expenses associated with maintaining and improving the country's water-distribution systems continue to rise.

However, it appears that relief is on the way for some companies. Favorable regulatory rate case rulings have been handed down across the country and look as though they might become the norm.

Meanwhile, consolidation remains the name of the game. Although many of the industry's smaller players lack the capital requirements to meet growing government regulations, larger companies are using the consolidation as way to boost profitability via growing its customer base.

INDUSTRY TIMELINESS: 94 (of 98)

Infrastructure Costs

Infrastructure costs continue to climb higher as water utility companies, with little help from strapped government branches, are forced to deal with maintaining and upgrading existing facilities. Costs are becoming an even greater concern as time passes because a number of the functioning systems currently in place are over 100 years old and in need of significant repair. That said, we believe that it will take hundreds of billions of dollars to renovate existing pipelines over the next few decades. To make matters worse, the costs of staying in compliance with regulatory laws are growing even more difficult, due to fears of terrorist activities against the country's drinking supplies. Although the Safe Drinking Water Act (SDWA) of 1974 remains the authority for the safety and purity of drinking water, recent amendments are making compliance even more demanding. In 1996, an amendment authorized the Environmental Protection Agency (EPA) to step up local compliance levels. And, governing law-makers now insist that the EPA work with local and state governments to test for impurities in drinking water and to regulate the levels of contaminants that are acceptable.

A Buying Opportunity

The growing regulations and costs associated with staying in compliance with government standards related to the quality and purification of drinking water is forcing many of the smaller water companies to look to larger suitors. Bigger companies with the market scale to withstand the current onslaught of costs are clearly taking advantage of this situation. Indeed, these firms are growing their businesses at relatively low costs as well as diversifying their operations into less regulated and more-rapidly developing areas of the U.S. *Aqua America* is a perfect example, making nearly 20 acquisitions since the close of last year. *Aqua* recently purchased a number of Pennsylvania-based companies in order to help drive top-line growth. We anticipate that the current consolidation theme will persist, as we expect restructuring costs to continue to rise.

Regulatory Assistance

Although water utility company's have been forced to deal with lethargic case rulings in the past couple of years, some governing bodies are picking up the pace. In California, for example, the California Public Utilities Commission (CPUC) has handed down a number of favorable rate-relief rulings in recent months, and more are expected. With the California electric crisis seemingly in the rearview mirror, the current administration seems intent on delivering more timely assessments. *American States Water Company* and *California Water Service Group* have both seen profits benefit from recent case rulings over the past quarter.

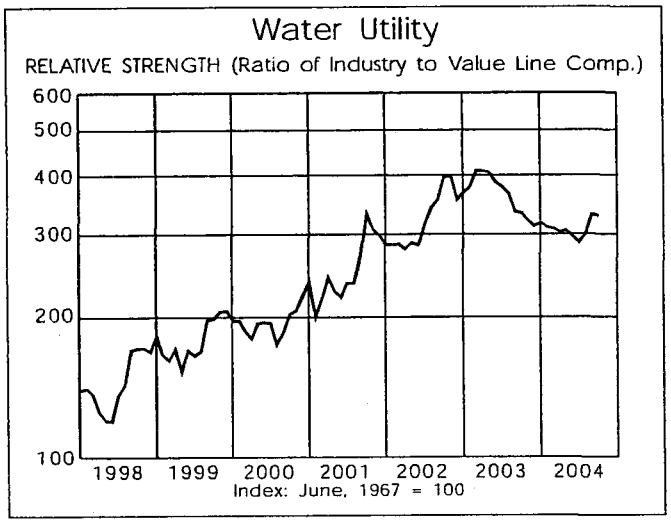
Investment Advice

Most investors will want to take a pass on the stocks covered in the next few pages, as they offer uninspiring returns out to decade's end. In addition, not one of the stocks in this edition is ranked to outperform the market in the next six to 12 months. Nonetheless, income-oriented investors may like the industry's solid dividend yields. *California Water* may have some added appeal for the risk-averse, given its above average Safety rank. Still, we advise that potential investors carefully review the individual reports in the ensuing pages before making a commitment to any of the stocks mentioned above.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2000	2001	2002	2003	2004	2005		07-09
704.3	751.8	794.4	857.0	*990*	*1075*	Revenues ($mill)	*1345*
90.9	95.4	106.6	98.6	*130*	*150*	Net Profit ($mill)	*205*
41.2%	40.2%	38.8%	40.0%	*40.0%*	*40.0%*	Income Tax Rate	*40.0%*
-	--	--	--	*Nil*	*Nil*	AFUDC % to Net Profit	*Nil*
50.3%	52.4%	53.9%	51.2%	*51.0%*	*51.0%*	Long-Term Debt Ratio	*50.0%*
49.3%	47.2%	45.9%	48.6%	*49.0%*	*49.0%*	Common Equity Ratio	*50.0%*
1661.0	1840.7	1973.6	2296.4	*2615*	*2870*	Total Capital ($mill)	*3550*
2342.5	2532.2	2751.1	3186.1	*3400*	*3605*	Net Plant ($mill)	*4150*
7.0%	6.8%	7.0%	5.9%	*6.5%*	*7.0%*	Return on Total Cap'l	*7.0%*
10.7%	10.6%	11.2%	8.8%	*9.5%*	*9.5%*	Return on Shr. Equity	*10.0%*
10.8%	10.7%	11.2%	8.8%	*9.5%*	*9.5%*	Return on Com Equity	*10.0%*
3.6%	3.3%	3.8%	2.5%	*3.5%*	*4.0%*	Retained to Com Eq	*4.5%*
67%	69%	66%	72%	*62%*	*58%*	All Div'ds to Net Prof	*52%*
18.6	22.6	21.5	26.0	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
1.21	1.16	1.17	1.49			Relative P/E Ratio	*1.20*
3.6%	3.1%	3.1%	2.8%			Avg Ann'l Div'd Yield	*3.5%*



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After showing some brief signs of a turnaround last year, the Water Utility Industry appears to have reverted back to its old ways. Feeling the effects of uncooperating weather conditions and high infrastructure costs, the stocks in this industry have had trouble meeting earnings expectations and, as a result, have sorely underperformed the broader market in recent months. In fact, none of the water utility stocks that are covered in the next few pages are ranked better than 3 (Average) for Timeliness, based on our momentum based ranking system. As a whole, the industry ranks near the bottom of the Value Line investment universe.

And the future does not look much brighter. Although a more favorable regulatory landscape and normalized weather conditions ought to provide a better landscape, we are concerned that rapidly growing infrastructure costs will continue to undermine this group's earnings out to late decade.

Easing Tensions

Although designed to keep a balance of power between consumers and providers, regulatory authorities, have long been a thorn in the side of water utility companies. Rate relief case decisions had often been unfavorable and untimely, with some rulings being pushed off for as long as two years. But, it finally looks as though things are taking a turn for the better, especially in the state of California. The California Public Utilities Commission (CPUC), which is responsible for ruling on general rate case requests in the Golden State, has been handing down more-favorable and timely decisions in recent months, thanks, in part, to the efforts of Governor Schwarzenegger. He has replaced members thought to be antagonists of rate relief with more-business-friendly members, and additional moves may be in the works. The recent changes makes for a favorable backdrop for water utility companies operating in California, such as *American States Water Co.* and *California Water Service Group.*

Costs

But, while regulators are easing their stance on rate case decisions, this does not look to be the case for infrastructure demands. Many of the current infrastructures are upwards of 100 years old and are in severe need of maintenance and, in some cases, massive renovations and rebuilding. And, given the geopolitical volatility worldwide and the heightened threat of bioterrorism on U.S. water pipelines and reservoirs, these costs are likely to continue to only rise, as companies strive to comply with EPA water purification standards. Infrastructure repair costs are expected to climb in the hundreds of millions of dollars over the next two decades, putting many smaller water companies at a distinct disadvantage. With a dearth of resources to fund these improvements, many such companies are being forced to sell. But, given the current landscape, larger companies with the flexibility and capital to deal with the higher costs are utilizing the weakness to add additional legs of growth to their businesses. *Aqua America*, the largest water utility in our survey, for example, has made more than 90 acquisitions in the past five years, doubling its revenue base during that time. The company does not seem to be slowing its aggressive spending ways and has the highest return on equity of any of the stocks that we cover here.

INDUSTRY TIMELINESS: 93 (of 98)

Investment Advice

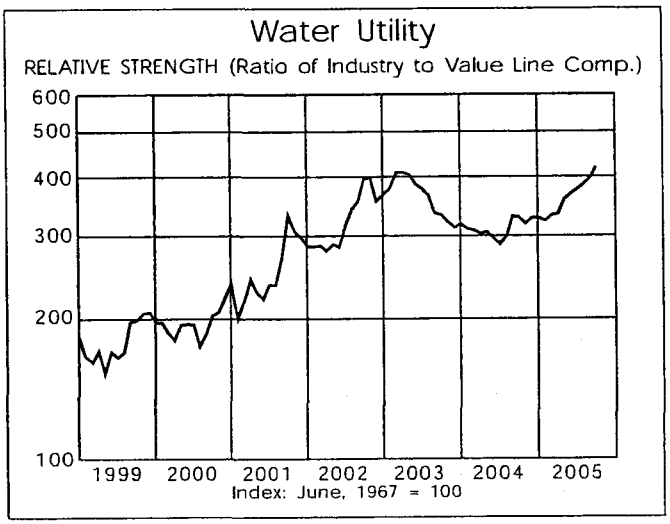
Most investors will probably want to take a pass on the stocks in this industry. Typically market laggards, not one of the issues covered in the next few pages stands out for near-term or long-term capital gains potential. The limited financial resources of most of these companies, along with the capital-intensive nature of the industry, will probably limit any substantial growth out to late decade.

Those seeking to add an income component to their portfolio may find an attractive option here, though. Each of the stocks in this industry carries an above-average dividend yield, with *American States Water* and *California Water* offering the highest percentages. *California Water* offers some additional appeal, as it has a 2 (Above Average) Safety rank. As is always the case, we recommend that all potential investors take a more in depth look at the individual reports on the following pages before considering making any future financial commitments.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2001	2002	2003	2004	2005	2006		08-10
751.8	794.4	857.0	985.6	*1250*	*1350*	Revenues ($mill)	*1725*
95.4	106.6	98.6	122.4	*155*	*170*	Net Profit ($mill)	*235*
40.2%	38.8%	40.0%	39.4%	*39.5%*	*39.5%*	Income Tax Rate	*39.5%*
--	--	--	--	*Nil*	*Nil*	AFUDC % to Net Profit	*Nil*
52.4%	53.9%	51.2%	50.0%	*52.0%*	*51.0%*	Long-Term Debt Ratio	*48.0%*
47.2%	45.9%	48.6%	50.0%	*48.0%*	*49.0%*	Common Equity Ratio	*52.0%*
1840.7	1973.6	2296.4	2543.6	*3000*	*3400*	Total Capital ($mill)	*4100*
2532.2	2751.1	3186.1	3532.5	*4050*	*4250*	Net Plant ($mill)	*5000*
6.8%	7.0%	5.9%	6.7%	*7.0%*	*7.5%*	Return on Total Cap'l	*7.0%*
10.6%	11.2%	8.8%	10.7%	*11.0%*	*11.0%*	Return on Shr. Equity	*11.5%*
10.7%	11.2%	8.8%	10.7%	*11.0%*	*11.0%*	Return on Com Equity	*11.5%*
3.3%	3.8%	2.5%	4.6%	*5.0%*	*5.0%*	Retained to Com Eq	*3.0%*
69%	66%	72%	57%	*60%*	*55%*	All Div'ds to Net Prof	*45%*
22.6	21.5	26.0	25.5	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
1.16	1.17	1.48	1.36			Relative P/E Ratio	*1.20*
3.1%	3.1%	2.8%	2.2%			Avg Ann'l Div'd Yield	*3.4%*



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Despite better regulatory backing, most of the water utility companies covered in the next few pages have continued to struggle in recent months. Unseasonably wet weather conditions and escalating infrastructure costs remain at the heart of the problem, pressuring margins and limiting bottom-line growth. As a result, these perennial market laggards continue to rank at the bottom of the *Value Line* investment universe for Timeliness. Although we suspect that more-normal weather conditions will eventually resume, the growing need for infrastructure renovations remains a major concern going forward. Higher spending poses a threat to the industry's long-term prospects, especially given the capital constraints that most companies are facing. As a result, none of the issues in this industry hold worthwhile 3- to 5-year appreciation potential at this time. Meanwhile, dividend yields have lost some appeal, as well.

INDUSTRY TIMELINESS: 96 (of 97)

Regulatory Landscape

Regulatory authorities, designed to keep a balance of power between consumers and providers, have long been a nemesis to water utility companies. Rate case decisions have been unfavorable and untimely, sometimes taking as long as two years to complete. However, the tide appears to have turned more recently, particularly in California, where a few of the utilities in this *Survey* generate a fair portion of their revenues. The California Public Utilities Commission, for example, behind the efforts of Governor Schwarzenegger, has been handing down more-favorable and timely decisions. He has replaced members thought to be adversaries of rate relief with more-lenient constituents. The changes provide a healthy backdrop for utility companies that request a step-up in rates each year.

Drowning In Expenses

Although regulators appear to be more business-friendly with case decisions, they are becoming increasingly more stringent with infrastructure demands. Many of the current infrastructures are more than 100 years old, and in need of serious upkeep and even complete renovation in some cases. Meanwhile, the Environmental Protection Agency (EPA) continues to increase its water purification standards, given the geopolitical volatility worldwide and the threat of bio-terrorist actions on U.S. water systems. In all, infrastructure repair costs are expected to climb into the hundreds of millions of dollars over the next two decades. However, these increasing costs will make it very difficult for water utility companies to maintain the earnings momentum that we the expect the improved regulatory landscape to produce this year out to late decade.

Opportunity???

With limited resources to fund rising capital expenditures, many smaller companies in this industry are being forced to shop their businesses, presenting an opportunity for larger suitors with the resources to foot the bill. No company exemplifies this better than *Aqua America*, the largest water utility in our *Survey*. It has made well over 100 acquisitions in the past five years, using the aforementioned weakness of smaller players to improve their operations and increase their presence. It has drastically increased its customer base and clearly improved its longer-term prospects, and therefore holds the best 3- to 5-year appreciation potential of all the stocks in this industry. We expect that the consolidation trend will continue as water standards continue to climb.

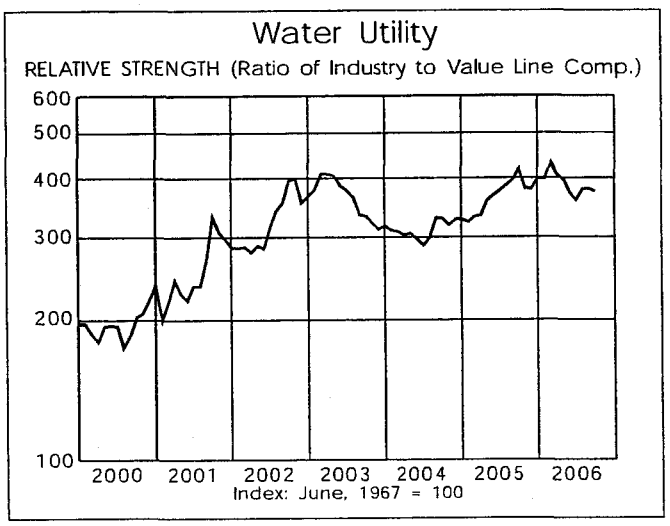
Investment Advice

This is not an industry that most investors will want to emphasize. Not one of the stocks here stand out for Timeliness or 3- to 5-year appreciation potential. Making matters worse, higher interest rates have increased the income-producing appeal of alternative investments, making the yields found in this industry modestly attractive at best. Thus, most will want to avoid this untimely industry for now. However, *California Water* is ranked 2 for Safety. This, along with its historically steady stream of income, may appeal to more-conservative investors. As always, though, we recommend that investors study the individual reports of each company in the next few pages before making any financial commitments.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2002	2003	2004	2005	2006	2007		09-11
925.2	1030.0	1173.6	1256.9	*1350*	*1485*	Revenues ($mill)	*2025*
107.8	112.6	105.7	148.3	*150*	*185*	Net Profit ($mill)	*265*
38.6%	39.7%	39.1%	40.5%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
.2%	1.9%	1.0%	1.1%	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
54.1%	51.0%	49.1%	50.4%	*50.0%*	*50.0%*	Long-Term Debt Ratio	*50.0%*
45.7%	48.8%	50.7%	49.5%	*50.0%*	*50.0%*	Common Equity Ratio	*50.0%*
2116.4	2449.1	2785.6	3057.5	*3300*	*3600*	Total Capital ($mill)	*4565*
2995.1	3405.6	3836.9	4194.7	*4475*	*4750*	Net Plant ($mill)	*5650*
6.9%	5.9%	6.0%	6.3%	*7.5%*	*8.0%*	Return on Total Cap'l	*9.0%*
11.1%	8.8%	9.0%	9.8%	*9.5%*	*10.5%*	Return on Shr. Equity	*11.5%*
11.1%	8.8%	9.0%	9.8%	*9.5%*	*10.5%*	Return on Com Equity	*11.5%*
4.0%	2.7%	3.1%	3.7%	*4.0%*	*4.5%*	Retained to Com Eq	*5.0%*
64%	70%	66%	62%	*60%*	*55%*	All Div'ds to Net Prof	*55%*
21.6	25.6	25.4	29.4	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
1.18	1.46	1.34	1.57			Relative P/E Ratio	*1.20*
3.0%	2.7%	2.6%	2.1%			Avg Ann'l Div'd Yield	*2.5%*



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Many of the stock's in the Water Utility industry have continued to benefit from more favorable regulatory backing since our October review. Nevertheless, as usual, the industry, as a whole, ranks at the very bottom of the *Value Line* investment universe for Timeliness. Elevated well and waterway maintenance costs are responsible for most of the blame and will likely continue to dampen profits for years to come. Indeed, the growing need for infrastructure renovations poses a significant threat to the industry's long-term prospects, especially given the capital constraints that most companies are facing. As a result, many investors are going to want to steer clear of the issues in this industry.

INDUSTRY TIMELINESS: 96 (of 96)

Regulatory Winds at its Back

Regulatory authorities, designed to keep a balance of power between utility providers and consumers, have been extremely tough on utility companies in years past. However, current administrations have taken a much more business-friendly approach in recent months in handing down timely and generally favorable rulings. This has not been more glaringly evident than in California, where the California Public Utilities Commission's board has undergone a major facelift with adversaries being replaced with business supporters. Recent rulings set a good tone for utility providers doing business in the Golden State, which typically request a step-up in rates every year. This augurs particularly well for *California Water Service Group* and *American States Water*, which both derive a significant amount of business from California.

But Choppy Waters Lie Ahead

Even still, the same cannot be said for infrastructure costs. Although regulators are softening their stance on rate case decisions, infrastructure demands are growing more stringent. Many of the current infrastructures are more than 100 years old and in need of serious upkeep, or even complete replacement in some cases. Water companies are being forced to pony up significant cash in order to get their systems up to par. Making matters worse, the Environmental Protection Agency (EPA) continues to increase its water purification standards, given the geopolitical volatility worldwide and the threat of bio-terrorist actions on U.S. water systems. In all, infrastructure repair costs are expected to climb into the hundreds of millions of dollars over the next two decades. These extra costs will make it very difficult for most water utility companies to sustain the earnings momentum that we think the improved regulatory landscape will produce this year.

Many of the smaller companies in the industry do not have the resources to meet the capital expenditures that they are being saddled with. Some are deciding to merge with larger, more financially sound enterprises. As a result, some of the biggest water utility companies are growing bigger, faster than ever. *Aqua America*, for example, has made well over 100 acquisitions in the past five years (28 coming in 2006), based on the aforementioned weakness of smaller players, improved operations and increased their lines. This has drastically increased its customer base and clearly improved its long-term prospects. We expect *Aqua* to continue growing its business via acquisitions as rising water standards spark further consolidation.

Investment Advice

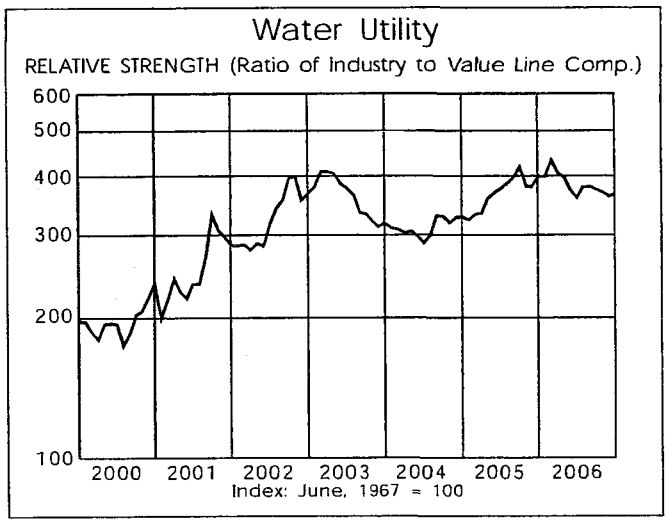
Most investors will want to steer clear of the stocks in the Water Utility Industry. Each of the issues in the coming pages hold below average appreciation potential, whether it be for the coming six to 12 months or out to 2009-2011. In fact, each is ranked either 4 or 5 for Timeliness. The growing infrastructure costs and capital constraints mentioned above are likely to continue pressuring bottom lines of water utility companies for years to come.

Meanwhile, most look to have lost their income appeal as well. Higher interest rates have increased the income-producing appeal of alternative investments, making the yields found in this industry modestly attractive at best. That said, more conservative investors looking for a steady stream of income may want to take a peek at *California Water*, which is ranked 2 (Above Average) for Safety. Its yield is still above the *Value Line* average. Nevertheless, we advise all potential investors to carefully look over the individual reports of each company in the next few pages before making any decisions.

Andre J. Costanza

Composite Statistics: Water Utility Industry

2002	2003	2004	2005	2006	2007		09-11
925.2	1030.0	1173.6	1256.9	*1350*	*1450*	Revenues ($mill)	*1825*
107.8	112.6	105.7	148.3	*155*	*180*	Net Profit ($mill)	*240*
38.6%	39.7%	39.1%	40.5%	*39.0%*	*39.0%*	Income Tax Rate	*39.0%*
.2%	1.9%	1.0%	1.1%	*1.0%*	*1.0%*	AFUDC % to Net Profit	*1.0%*
54.1%	51.0%	49.1%	50.4%	*50.0%*	*50.0%*	Long-Term Debt Ratio	*50.0%*
45.7%	48.8%	50.7%	49.5%	*50.0%*	*50.0%*	Common Equity Ratio	*50.0%*
2116.4	2449.1	2785.6	3057.5	*3360*	*3650*	Total Capital ($mill)	*4500*
2995.1	3405.6	3836.9	4194.7	*5350*	*5750*	Net Plant ($mill)	*6800*
6.9%	5.9%	6.0%	6.3%	*7.0%*	*8.0%*	Return on Total Cap'l	*9.0%*
11.1%	8.8%	9.0%	9.8%	*9.0%*	*10.0%*	Return on Shr. Equity	*10.5%*
11.1%	8.8%	9.0%	9.8%	*9.0%*	*10.0%*	Return on Com Equity	*10.5%*
4.0%	2.7%	3.1%	3.7%	*3.0%*	*3.5%*	Retained to Com Eq	*2.5%*
64%	70%	66%	62%	*68%*	*65%*	All Div'ds to Net Prof	*62%*
21.6	25.6	25.4	29.4	*Bold figures are Value Line estimates*		Avg Ann'l P/E Ratio	*18.0*
1.18	1.46	1.34	1.57			Relative P/E Ratio	*1.20*
3.0%	2.7%	2.6%	2.1%			Avg Ann'l Div'd Yield	*2.5%*



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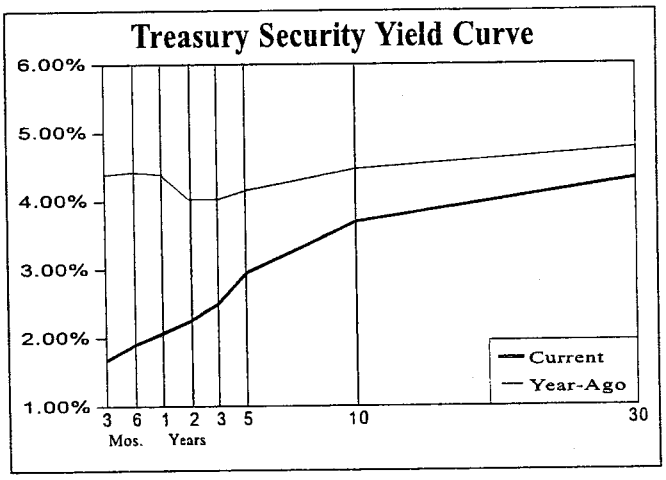
ATTACHMENT E

Selected Yields

	Recent (9/03/08)	3 Months Ago (6/04/08)	Year Ago (9/05/07)
TAXABLE			
Market Rates			
Discount Rate	2.25	2.25	5.75
Federal Funds	2.00	2.00	5.25
Prime Rate	5.00	5.00	8.25
30-day CP (A1/P1)	2.88	2.47	5.31
3-month LIBOR	2.81	2.67	5.72
Bank CDs			
6-month	1.60	1.76	2.96
1-year	2.26	2.25	3.66
5-year	4.15	3.37	3.94
U.S. Treasury Securities			
3-month	1.68	1.84	4.39
6-month	1.90	1.97	4.43
1-year	2.07	2.13	4.39
5-year	2.95	3.26	4.16
10-year	3.70	3.98	4.47
10-year (inflation-protected)	1.64	1.44	2.31
30-year	4.32	4.70	4.77
30-year Zero	4.37	4.79	4.78

	Recent (9/03/08)	3 Months Ago (6/04/08)	Year Ago (9/05/07)
Mortgage-Backed Securities			
GNMA 6.5%	5.60	5.49	5.89
FHLMC 6.5% (Gold)	5.67	5.46	6.01
FNMA 6.5%	5.48	5.36	5.94
FNMA ARM	3.89	4.25	5.83
Corporate Bonds			
Financial (10-year) A	6.69	5.74	5.99
Industrial (25/30-year) A	6.11	6.22	6.00
Utility (25/30-year) A	6.13	6.23	6.11
Utility (25/30-year) Baa/BBB	6.54	6.50	6.27
Foreign Bonds (10-Year)			
Canada	3.48	3.64	4.35
Germany	4.14	4.38	4.21
Japan	1.47	1.78	1.63
United Kingdom	4.50	4.95	5.04
Preferred Stocks			
Utility A	6.16	6.29	6.31
Financial A	6.97	6.75	6.85
Financial Adjustable A	5.53	5.53	5.53



	Recent (9/03/08)	3 Months Ago (6/04/08)	Year Ago (9/05/07)
TAX-EXEMPT			
Bond Buyer Indexes			
20-Bond Index (GOs)	4.68	4.52	4.70
25-Bond Index (Revs)	5.17	4.99	4.83
General Obligation Bonds (GOs)			
1-year Aaa	1.58	1.77	3.58
1-year A	1.68	1.87	3.68
5-year Aaa	2.74	2.94	3.59
5-year A	2.84	3.04	3.69
10-year Aaa	3.55	3.58	3.89
10-year A	3.75	3.78	4.39
25/30-year Aaa	4.69	4.47	4.57
25/30-year A	5.07	4.67	4.87
Revenue Bonds (Revs) (25/30-Year)			
Education AA	4.85	4.75	4.87
Electric AA	4.80	4.80	4.82
Housing AA	5.15	4.95	4.92
Hospital AA	5.25	5.05	4.90
Toll Road Aaa	4.80	4.80	4.88

Federal Reserve Data

BANK RESERVES

(Two-Week Period; in Millions, Not Seasonally Adjusted)

	Recent Levels			Average Levels Over the Last...		
	8/27/08	8/13/08	Change	12 Wks.	26 Wks.	52 Wks.
Excess Reserves	2042	1844	198	2134	2191	1910
Borrowed Reserves	168089	167636	453	169077	140773	80722
Net Free/Borrowed Reserves	-166047	-165792	-255	-166942	-138582	-78812

MONEY SUPPLY

(One-Week Period; in Billions, Seasonally Adjusted)

	Recent Levels			Growth Rates Over the Last...		
	8/18/08	8/11/08	Change	3 Mos.	6 Mos.	12 Mos.
M1 (Currency+demand deposits)	1379.8	1396.1	-16.3	6.8%	2.1%	1.3%
M2 (M1+savings+small time deposits)	7717.6	7728.1	-10.5	1.2%	3.6%	5.4%

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ATTACHMENT F

Stocks Rise on Soothing Inflation News

Thursday , February 24, 2005

FOX NEWS

NEW YORK —

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Stock rose on Wednesday, rebounding from Tuesday's massive losses, as investors welcomed a tame report on January consumer prices, >better-than-expected corporate earningsand two merger deals.

The **Dow Jones industrial average** (search) closed up 62.59 points, or 0.59 percent, at 10,673.79. The **Standard & Poor's 500 Index** (search) was up 6.64 points, or 0.56 percent, at 1,190.80. The technology-laced **Nasdaq Composite Index** (search) was up 0.93 points, or 0.05 percent, at 2,031.25.

"We were heavily oversold yesterday on the oil news and we are getting a technical bounce a little bit. Oil is down today and it is definitely being helped by the fact that the dollar is up," said Tom Schrader, managing director, U.S. equity trading, Legg Mason Wood Walker.

Investors also said minutes from the last meeting of the **Federal Open Market Committee** (search) revealed little to suggest the Fed would increase the pace of future rate increases.

The blue-chip Dow and the broader Standard & Poor's 500 index got a boost from Procter & Gamble Co. (PG), which jumped 2.4 percent to $53.49, after UBS raised its rating to "buy" from "neutral," citing optimism about the consumer products maker's deal to buy Gillette Co.

The Nasdaq stayed just in positive territory as Apple Computer Inc. (AAPL) jumped 3.4 percent to $88.19 after it introduced new versions of its hugely popular digital music player, including an 'iPod mini' with a color screen.

"Judging by conversations with our clients, people were looking to re-engage," said Brian G. Belski, market strategist at Piper Jaffray. "If we'd had a stronger semblance of inflation, this thing could've really come uncoupled today."

The **Labor Department** (search) reported a tiny 0.1 percent rise in consumer prices during January as energy costs slid for a second straight month. The data, which suggests consumer inflation remains very much under control, was at odds with last week's report on wholesale prices.

Wall Street economists had expected a 0.2 percent rise in the CPI, both overall and excluding food and energy, but traders had been bracing for the possibility of larger gains after a report on Friday showed a big pickup in core producer prices, which raised concerns of more aggressive hikes in interest rates by the Fed.

"There was a lot of relief over the CPI figure — the fear was it was going to be higher and this would trigger a change in strategy by the Fed," said Michael Metz, chief investment strategist at Oppenheimer & Co.

The Federal Reserve concluded at its last meeting on Feb. 1-2 that interest rates likely remained too low to keep inflation stable and held open the possibility of altering the pace of future increases, minutes of the meeting issued on Wednesday showed.

On balance, the central bank's policy-setting Federal Open Market Committee felt its policy of pushing rates up would keep

inflation in check but left no doubt it intended to keep on raising them.

The dollar, which tumbled Tuesday on rumors that South Korea planned to diversify its currency holdings away from the greenback, recovered somewhat after Seoul's central bank denied the report. Gold fell, as did oil prices, which skidded 25 cents to $51.17 per barrel on the **New York Mercantile Exchange** (search).

Pharmacy benefits manager Medco Health Solutions Inc. (MHS) was down 29 cents at $43.14 after saying it had agreed to buy Accredo Health Inc. (ACDO) , a distributor of specialty drugs and services, for about $2.2 billion in cash and stock. The deal would create the nation's largest specialty pharmacy business, Medco said. Accredo shares surged 39 percent, or $11.87, to $42.11.

Trucking company USF Corp. (USFC) jumped 13 percent, or $4.37, to $37.73, after The Wall Street Journal reported that Yellow Roadway Corp. (YELL) was in talks to acquire it in a deal possibly valued at more than $1 billion. Yellow shares added 4.7 percent, or $2.60, to $57.95.

Toll Brothers Inc. (TOL) rose 4 percent, or $3.21, to $84.25, as soaring demand for luxury homes boosted profits in the first quarter, prompting the company to raise delivery estimates for 2005. Its earnings blew past the estimates of analysts surveyed by Thomson First Call.

Lowe's Cos. (LOW) was up 37 cents at $57.90 after the nation's second largest home improvement chain reported a nearly 27 percent rise in fourth quarter earnings on an almost 18 percent increase in sales. The results beat Wall Street's expectations by a wide margin.

Chiquita Brands International Inc. (CQB) was up 5 cents at $22.05 after the banana grower announced plans to acquire Fresh Express, the nation's top seller of bagged salads, from Performance Food Group Co. for $855 million in cash. The announcement came a day after Chiquita reported its profit more than tripled in the fourth quarter.

Trading in stocks was active, with 1.5 billion shares changing hands on the New York Stock Exchange, just above the 1.46 billion daily average for last year. About 1.87 billion shares were traded on Nasdaq, just above the 1.81 billion daily average last year.

On the NYSE, advancing stocks outnumbered declining stocks by 2-to-1. The number of rising stocks was about equal to declining stocks on the Nasdaq.

The Russell 2000 index, which tracks smaller company stocks, was up 2.61, or 0.42 percent, at 620.54.

Overseas, Japan's Nikkei stock average shed 0.84 percent. In Europe, France's CAC-40 lost 0.63 percent, Britain's FTSE 100 slid 0.88 percent and Germany's DAX index dipped 0.29 percent.

Reuters and the Associated Press contributed to this report.

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Stock continue to fall on inflation, economic worries

NEW YORK (AP) — Stocks fell hard for a second day Wednesday, with the Dow Jones industrial average losing more than 120 points after a surprisingly weak reading on the service sector of the economy raised concerns about the continuing impact of higher energy prices.

The Dow Jones industrial average fell 123.75, or 1.2%, to 10,317.36. The decline followed a drop of 94.37, or 0.9%, on Tuesday.

Broader stock indicators were lower. The Standard & Poor's 500 index fell 18.08, or 1.49%, to 1196.39, and the Nasdaq composite index fell 36.34, or 1.7%, to 2103.02. The major indexes are at their lowest points since the week of July 4.

Equities opened lower after Tuesday's sell-off, then fell further when the Institute for Supply Management reported that its non-manufacturing business index, which measures the service sector, dropped to 53.3 in September from 65.0 in August.

While any reading above 50 indicates the economy is expanding, the sharp drop in the index was unexpected, following a strong report in manufacturing earlier this month.

Wednesday's reading, which indicated supply managers were worried about higher energy costs, spooked investors already nervous about the effects that rising oil and gas prices will have going forward.

The market was still mulling Tuesday's comments from Dallas Federal Reserve Bank President Robert Fisher, who said inflation was nearing the high end of the Fed's comfort zone — a clear signal that the Fed's short-term interest rate hikes would continue. The higher prices for energy have been filtering into the rest of the economy.

Investors are also jittery about earnings season, which officially starts Monday. Some companies such as Clorox Co. have already begun to warn their earnings will not meet expectations.

"We need to get (earnings season) out of the way and see how companies are doing," said Barry Berman, head trader for Robert W. Baird & Co. in Milwaukee.

Small caps, which are highly sensitive to interest rates, dropped sharply. The Russell 2000 index of smaller companies fell 18.86, or 2.84%, to 644.98.

A barrel of light crude settled at $62.79, down $1.11, on the New York Mercantile Exchange.

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Bonds rose, with the yield on the 10-year Treasury note falling to 4.35% from 4.38% late Tuesday. The U.S. dollar was mixed against other major currencies in European trading. Gold prices fell.

Investors are facing a Wall Street nightmare: A slower economy and higher interest rates.

Those looking for signs of a slowdown are finding them. For instance, home equity lending at banks has slowed from a peak rate of $2 billion to $3 billion a week to "a trickle" of $100 million in the past several weeks, according to a Citigroup report.

"There's just a lot of nervousness and cross currents," Berman said.

One example: Home builder Hovnanian Enterprises (HOV) fell $1.09 to $48.19 despite its report that new contracts rose 61.5% in September. Investors are concerned that the steep run-up in housing prices is starting to stall as interest rates climb; those fears were compounded by a *New York Times* report Tuesday that insiders in home building companies have sold, in aggregate, almost $1 billion of the companies' stock this year.

Other home builders also dropped. D.R. Horton (DHI) fell 84 cents to $34.36; KB Home (KBH) fell $2.95 to $67.46 and Toll Brothers (TOL) fell 92 cents to $40.48.

Utility operator Entergy (ETR) fell $2.21 to $72.21 after it said the damage it suffered from Hurricane Rita will range from $400 million to $550 million, a bill that comes on top of damages that could hit $1.1 billion from Hurricane Katrina. Entergy's New Orleans unit filed for bankruptcy protection after Katrina, citing $325 million to $475 million in damages to power and natural gas transmission systems and the loss of most of its customer base.

Wendy's International (WEN) rose 61 cents to $47.33 even though it said third-quarter same-store sales — or sales at stores open at least one year — fell 5% at its flagship chain, as high gas prices curbed consumer spending and hurricanes shuttered restaurants. The hamburger chain operator also said the effects of the recent storms and higher beef prices will hurt third-quarter profits, but investors are excited by the planned initial public offering of its Tim Hortons chain.

Declining issues led advancers by more than 5 to 1 on the New York Stock Exchange, where preliminary consolidated volume came to 2.52 billion, up from 2.37 billion traded Tuesday.

Overseas, Japan's Nikkei stock average fell 0.4%. Britain's FTSE 100 fell 1.2%, Germany's DAX index dropped 1.3%, and France's CAC-40 fell 1.2%.

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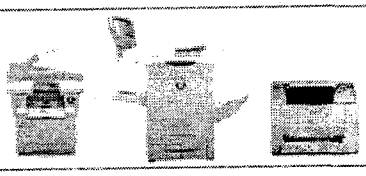

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BusinessWeek

MAY 1, 2006

TREASURY MARKET WATCH

Treasury Prices Fall After Inflation News

U.S. prices are rising faster than expected

MARKETSCOPE : Treasury bond prices fell on Monday after economic indicators fanned concerns about inflation.

Bond prices deepened losses late in the day after comments from CNBC that Fed Chairman Bernanke feels the financial markets have incorrectly interpreted his stance on monetary policy and inflation as dovish.

The benchmark 10-year note tumbled 20/32 to 95-04/32 for a yield of 5.14% as of 3:40 pm Eastern Daylight Time. The 30-year bond sank 28/32 to 89-05/32 for a yield of 5.22%.

News hit that the core PCE deflator, the Federal Open Market Committee's favorite inflation gauge, was up a bit higher than the expected 0.3% on the month after a 0.1% gain in February. It is up 2.0% on a yearly basis, from 1.8%.

The ISM index climbed to 57.3 in April from 55.2 in March, its 35th month of expansion. U.S. construction spending rose 0.9% in March after gaining a revised 1.0% in February. U.S. Personal Income rose 0.8% in March from February's 0.3%. Personal Consumption Expenditures rose 0.6% after gaining a revised 0.2% in February.

"A jump in core inflation readings brings the annual rate of inflation to the upper bound of the Fed's target zone," says Drew Matus, of Lehman Brothers. He thinks the Fed will move the Fed funds rate to 5.5% by the end of the third quarter.

But pundits see some hope.

"Globalization is holding down inflation; the most recent report on US labor costs is especially encouraging" says Stephen S. Roach, of Morgan Stanley in New York. "Major central banks only need to normalize policy settings; authorities in Japan and China are the latest to join the ranks in doing so."

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CBS NEWS

BACK PRINT

Stock Prices Fall on Inflation Fears

NEW YORK, Aug. 1, 2006

(AP) Heightened fears of inflation prompted investors to sell off stocks Tuesday as a key price index climbed to an 11-year high and an improving manufacturing sector raised the likelihood of another interest rate hike by the Federal Reserve. In midmorning trading, the Dow Jones industrial average fell 75.48, or 0.67 percent, to 11,110.20.

Broader stock indicators also fell. The Standard & Poor's 500 index lost 10,43, or 0.82 percent, to 1,266.23, and the Nasdaq composite index dropped 30.65, or 1.47 percent, to 2,060.82.

While inflation-adjusted consumer spending rose a sluggish 0.2 percent in June, the Commerce Department also reported that consumer prices are up 2.4 percent year over year, the highest rate of inflation since April 1995.

A strong rise in the Institute for Supply Management's manufacturing index deepened investors' interest rate worries, as a strong economy would make it easier for the Fed to raise rates without cutting off growth. The index rose to 54.7 in July, far better than the 53 reading economists had expected.

The Fed meets next Tuesday to gauge whether more interest rate hikes are needed to clamp down on inflation. The Commerce and ISM reports could push policy makers toward another quarter percentage point increase, which would put the benchmark rate at 5.5 percent. That would make capital more expensive for corporations _ and hurt corporate earnings and share prices.

Bonds slumped alongside stocks, with the yield on the benchmark 10-year Treasury note rising to 5.01 percent from 4.98 percent late Monday. The dollar was mixed against other major currencies, while gold prices rose.

Rising crude oil and natural gas futures added to Wall Street's worries, since the Fed has signaled that high energy prices could further feed inflation. Crude prices rose 40 cents to $74.80 per barrel due to multiple crises in the Middle East, while natural gas futures built on Monday's 14 percent surge based on higher U.S. electrical demand in a nationwide heat wave.

The chronic concerns over inflation caused investors to again overlook corporate earnings, which have been strong overall. Verizon Communications Inc. fell 79 cents to $33.03 after reporting a 24 percent drop in second-quarter earnings that nonetheless beat Wall Street expectations by 2 cents per share. Investors were disappointed, however, with the company's full-year forecast.

Qwest Communications International Inc. posted a profit after a year-ago loss, helped by improved profit margins on flat revenues. Qwest gained 39 cents to $8.18.

The higher energy prices that has the stock market in flux helped Marathon Oil to double its second-quarter profits from a year ago. Marathon nonetheless lost 34 cents to $90.30 after reporting earnings that beat analysts' forecasts by 59 cents per share.

Agricultural processor Archer Daniels Midland also benefited from the energy markets as demand for corn-based ethanol fuels helped the company double its quarterly earnings. ADM added 2 cents to $44.02.

Eastman Kodak Inc. slid $2.17, or 9.8 percent, to $20.08 after it posted its seventh consecutive quarterly loss. The one-time leader in cameras and film is undergoing a difficult transition to digital photography.

Declining issues outnumbered advancers by nearly 3 to 1 on the New York Stock Exchange, where volume came to 183.2 million shares, compared with 179.31 million traded at the same point Monday.

The Russell 2000 index of smaller companies fell 12.36, or 1.76 percent, to 688.20.

Overseas, Japan's Nikkei stock average fell 0.1 percent. In afternoon trading, Britain's FTSE 100 was down 0.18 percent, Germany's DAX index fell 0.6 percent, and France's CAC-40 lost 0.65 percent.

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Stock Prices Fall for 2nd Straight Day

Stock Prices Fall for 2nd Straight Day After Disappointing Earnings From Intel

The Associated Press

NEW YORK

The Dow Jones industrial average has dropped 52.10 to 12,546.08 in the opening minutes of trading today, after falling 277.04 yesterday. The losses follow Intel Corp. announcing disappointing earnings and a dim outlook.

The Nasdaq Composite fell 26.46 to 2,391.13 and the Standard & Poor's 500 index is off 4.89 to 1,376.06.

On the inflation front, higher costs for energy and food last year pushed the inflation rate up by the largest amount in 17 years, even though prices generally remained tame outside of those two areas. Consumer prices rose by 4.1 percent for all of 2007, up sharply from a 2.5 percent increase in 2006.

The Labor Department reported that consumer prices in December showed an increase of 0.3 percent for the headline figure and a 0.2 percent advance for the core rate, which strips out food and energy prices.

Investor patience already is sorely tested by economists' predictions that a recession is at hand and by unsteadiness in the financial sector, where many banks are struggling to restore badly damaged balance sheets.

Intel's failure to meet earnings and revenue forecasts for the fourth quarter and new first-quarter revenue guidance that is at the low end of analysts' forecasts should weary investors further. Earlier this week there was market speculation that the technology sector, which sometimes benefits from a weak dollar and overseas strength, might be able to withstand the weakness sweeping other parts of the economy.

Intel stock fell as much as 15 percent in after hours trade and contributed to heavy selloffs in Asia on Tuesday. The share off $2.86, or 12.6 percent, at $19.85 before the opening.

Yet the technology sector saw some cheer Wednesday, thanks Oracle Corp.'s new deal to buy BEA Systems Inc. for about $7.85 billion. Last year BEA rejected a less expensive bid from Oracle, which raised its offer but not to the level sought by BEA.

Treasury prices rose on the expected declines for stocks as oil futures came under pressure.

The dollar was back in the spotlight Wednesday. It hit sharp lows overnight in Asian trade on recession fears, but later recovered some strength. The improvement pushed gold futures below the closely watched $900 an ounce level for the first time this week as the two markets often trade in opposite directions.

JPMorgan Chase & Co. Wednesday offered a first-quarter earnings report that revealed relatively light exposure to the subprime lending crisis as it took a writedown of $1.3 billion, which was smaller than the massive losses of peers like Citigroup Inc. The company had a quarterly profit that fell below analysts' expectations.

On a worrisome note, the bank warned of difficult conditions ahead in 2008 and said profit was reduced by problems with home equity loans that underscore the mounting pressures in consumer lending. The company's stock fell 17 cents, or 0.43 percent, to $39, before the opening.

Wells Fargo & Co. revealed its first decline in profit in more than six years and also cited rising losses on home equity loans.

The Federal Reserve, in setting monetary policy, is known to pay closer attention to the core rate and the report should not rattle markets much. At this point investors are far more worried about the prospect of slower growth than that of higher inflation.

In addition, Fed Chairman Ben Bernanke already has sent strong signals that another rate cut is on the way this month. The Fed's next monetary policy meeting is Jan. 29-30, and some investors are hoping for a rate cut before then.

In overseas trade, Japan's Nikkei gave up 3.35 percent. In Europe, London's FTSE 100 fell 0.82 percent, Frankfurt's DAX fell 0.98 percent and Paris' CAC forfeited 0.34 percent.

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Stocks decline following inflation reading

By TIM PARADIS AP Business Writer

Article Last Updated: 08/04/2008 09:31:32 AM MDT

NEW YORK—Stocks declined Monday after the government issued an inflation report that deepened Wall Street's overall malaise. The Dow Jones industrial average lost about 100 points.

The Commerce Department said an inflation gauge tied to consumer spending rose by a sharp 0.8 percent in June, reflecting the impact of higher gasoline prices. That was the biggest jump in the indicator since a 1 percent rise in February 1981.

The data came in the department's report on consumer spending, which fell 0.2 percent in June after removing the effects of higher prices. The increase in inflation offset some of the billions in dollars in checks sent to taxpayers as part of the government's economic stimulus plan.

The report raised investors' growing concerns about the impact of rising prices on consumers, whose spending is the lifeblood of the economy.

Richard E. Cripps, chief market strategist for Stifel Nicolaus, said the economic readings arriving Monday are reinforcing the negative sentiment in the markets globally. While the Federal Reserve will hold a regularly scheduled policy meeting on Tuesday, he contends investors aren't expecting much from the session; Wall Street is more immediately concerned with energy prices and prospects for the housing market.

"I don't think that the Fed can really pull any of its levers to create a short-term fix," he said. "I think a $5 drop in oil would be more significant."

In late morning trading, the Dow declined 99.41, or 0.88 percent, to 11,226.91. The Dow logged several triple digit, back-and-forth swings last week, and ended the week down 0.39 percent.

Broader stock indicators also fell. The Standard & Poor's 500 index declined 11.64, or 0.92 percent, to 1,248.67, and the Nasdaq composite index declined 27.63, or 1.20 percent, to 2,283.33.

Many on Wall Street will likely trade cautiously ahead of the Fed's meeting. The Fed is expected to keep interest rates steady at 2 percent, given the recent underwhelming readings on the economy. Inflation rose sharply for businesses in June as they paid higher prices for commodities, but it appears to have eased in July as the price of oil retreated in the second half of the month. That might take pressure off the Fed to raise rates as a means of containing inflation.

Bond prices declined. The yield on the benchmark 10-year Treasury note, which moves opposite its price, fell to 3.93 percent from 3.94 percent late Friday. The dollar was mixed against other major currencies, while gold prices fell.

Light, sweet crude fell 72 cents to $124.38 a barrel on the New York Mercantile Exchange.

Investors seemed unmoved by a Commerce Department report that orders to U.S. factory jumped at the fastest pace in six months in June. The report

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reflected increases in petroleum prices and heavy demand for military equipment. Orders rose by 1.7 percent in June, more than double what had been expected. It was the biggest gain since December.

Meanwhile, U.S. corporate earnings reports for the second quarter were still arriving, but Monday's flow was lighter. Cisco Systems Inc., News Corp. and Procter & Gamble Co. all report earnings Tuesday.

Declining issues outnumbered advancers by about 3 to 1 on the New York Stock Exchange, where volume came to 294.4 million shares.

The Russell 2000 index of smaller companies fell 14.47, or 2.02 percent, to 701.69.

Overseas, Japan's Nikkei stock average fell 161.41, or 1.23 percent to 12,933.1. In afternoon trading, Britain's FTSE 100 rose 0.13 percent. Germany's DAX index fell 0.60 percent, and France's CAC-40 fell 0.75 percent.

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Stocks fall on inflation data, financial worries

By MADLEN READ AP Business Writer

Article Last Updated: 08/19/2008 09:27:24 AM MDT

NEW YORK—Stocks fell sharply Tuesday after a hefty jump in wholesale inflation and a drop in new home construction gave investors more reasons to believe the economy won't rebound anytime soon. The Dow Jones industrial average dropped by more than 100 points.

The Labor Department said its Producer Price Index rose by 1.2 percent in July, more than double the expected rate. The increase means prices have risen in the past 12 months at the fastest pace in 27 years.

The data also showed that core wholesale inflation, which excludes food and energy prices, rose 0.7 percent—the biggest increase since November 2006 and more than triple the 0.2 percent rise in core prices that had been expected.

"Maybe investors were hoping to shrug off the challenges of high commodity prices and inflation," said Jack A. Ablin, chief investment officer at Harris Private Bank. "But now we find out that perhaps the inflation situation is worse than we thought."

A weak report on new home construction did little to quell investors' worries. The Commerce Department said July housing starts fell to an annual rate of 965,000 units—higher than analysts predicted, but the lowest level in more than 17 years nonetheless.

Tuesday's pair of economic reports indicated not only that the financial sector is struggling to right itself after billions of dollars in credit losses, but also that the rest of the economy is still showing significant signs of stress.

The weakness in housing has not only imperiled home builders and suppliers, but has left financial companies reeling over how to cope with soured mortgage debt. Lehman Brothers Holdings Inc., for one, came under pressure Tuesday after a JPMorgan Chase & Co. analyst estimated that Lehman will have to write down its investments during the third quarter by $4 billion.

In late morning trading, the Dow Jones industrial average fell 119.69, or 1.04 percent, to 11,359.70.

Broader stock indicators also dropped. The Standard & Poor's 500 index fell 11.56, or 0.90 percent, to 1,267.04, and the Nasdaq composite index fell 22.87, or 0.95 percent, to 2,394.11.

Bond prices slipped. While investors often seek the shelter of government debt when bad news arrives, inflation is unwelcome for bonds because it devalues their fixed returns. The yield on the benchmark 10-year Treasury note, which moves opposite its price, rose to 3.83 percent from 3.82 percent late Monday.

The dollar was mixed against other major currencies, while gold prices fell.

One of the few bright spots for Wall Street has been the price of oil. Crude has fallen substantially from its July record above $147 a barrel, and fell 32 cents to $112.55 a barrel Tuesday on the New York

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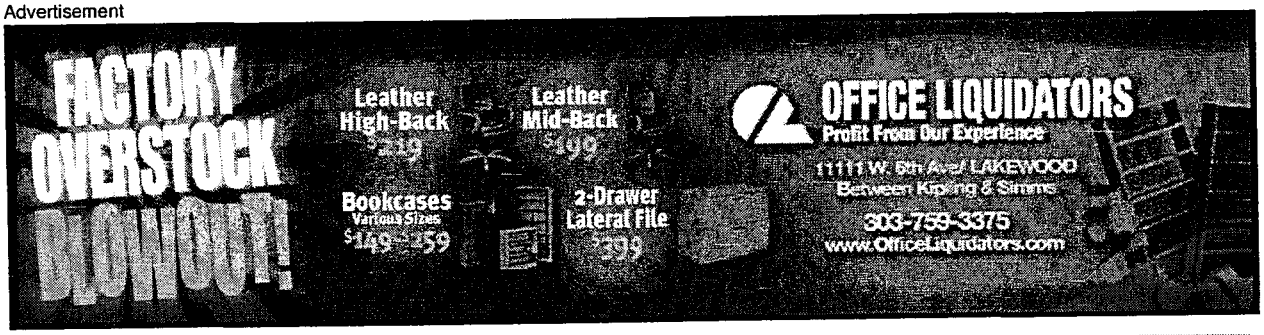

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Mercantile Exchange.

Lehman fell $1.26, or 8.3 percent, to $13.77. There have been reports swirling that the investment bank might have to sell one of its businesses to raise cash.

Retailers reported mixed quarterly results, adding to investors' uncertainty about the economy.

Home Depot Inc. reported a 24 percent decline in its second-quarter earnings but topped Wall Street's expectations. The nation's largest home improvement retailer reiterated its forecast for the year. Shares dipped 50 cents to $26.46.

Target Corp. said its second-quarter earnings fell 7.5 percent but beat forecasts despite anemic sales. Shares fell 22 cents to $49.83.

And Saks Inc. reported a wider-than-expected loss in the second quarter as its affluent shoppers cut back on apparel. The luxury goods retailer also issued a downbeat forecast for the year. Shares dropped $1.42, or 13 percent, to $9.80.

The Russell 2000 index of smaller companies fell 9.45, or 1.27 percent, to 732.52.

Declining issues outnumbered advancers by about 3 to 1 on the New York Stock Exchange, where volume came to 270.8 million shares.

Overseas, Japan's Nikkei stock average fell 2.28 percent. In afternoon trading, Britain's FTSE 100 fell 2.10 percent, Germany's DAX index lost 2.08 percent, and France's CAC-40 fell 2.27 percent.

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CHAPARRAL CITY WATER COMPANY, INC
DOCKET NO. W-02113A-07-0551
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CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

OCRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	4.10%	3.13%	0.13%
2	LONG-TERM DEBT	6,865,000	-	6,865,000	20.20%	5.34%	1.08%
3	COMMON EQUITY	27,002,476	(1,280,000)	25,722,476	75.70%	8.83%	6.69%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ (1,280,000)	$ 33,987,476	100.00%		
5	**OCRB WEIGHTED COST OF CAPITAL**						7.89%

FVRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	4.10%	3.13%	0.13%
2	LONG-TERM DEBT	6,865,000	-	6,865,000	20.20%	5.34%	1.08%
3	COMMON EQUITY	27,002,476	(1,280,000)	25,722,476	75.70%	6.83%	5.17%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ (1,280,000)	$ 33,987,476	100.00%		
5	**FVRB WEIGHTED COST OF CAPITAL**						6.38%

REFERENCES:
COLUMN (A): COMPANY SCHEDULE D-1
COLUMN (B): TESTIMONY, WAR
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): COLUMN (C) ÷ COLUMN (C), LINE 4
COLUMN (E): SCHEDULE WAR-1, PAGES 2 THROUGH 5 - TESTIMONY, WAR
COLUMN (F): COLUMN (D) x COLUMN (E)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

COST OF SHORT-TERM DEBT

1	ONE YEAR LONDON INTERBANK OFFERED RATE (LIBOR)	3.13%

REFERENCE:
ONE YEAR LIBOR RATE PUBLISHED IN THE SEPTEMBER 12, 2008 EDITION OF THE WALL STREET JOURNAL

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

WEIGHTED COST OF LONG-TERM DEBT

LINE NO.	(A) DESCRIPTION	(B) AMOUNT OUTSTANDING	(C) ANNUAL INTEREST	(D) INTEREST RATE	(E) BALANCE RATIOS	(F) WEIGHTED COST OF DEBT
1	SERIES 1997A SERIAL BONDS, DUE 1998 TO 1997 (4.00% TO 4.85%)	$ -	$ -	-	-	-
2	SERIES 1997A TERM BONDS, DUE 2011 (5.20%)	960,000	49,920	5.200%	14.58%	0.8%
3	SERIES 1997A TERM BONDS, DUE 2011 (5.20%)	4,610,000	248,940	5.400%	70.01%	3.8%
4	SERIES 1997A TERM BONDS, DUE 2011 (5.20%)	1,015,000	52,780	5.200%	15.41%	0.8%
5						
6	TOTALS	$ 6,585,000	$ 351,640		100.00%	
7						
8	**WEIGHTED COST OF DEBT**					5.34%

REFERENCES:
COLUMN (A) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (B) LINES 1 THRU 4: COMPANY SCHEDULE D-1, PAGE 1
COLUMN (C) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (D) LINES 1 THRU 4: COLUMN (C) ÷ COLUMN (B)
COLUMN (E): COLUMN (A) LINES 2 THRU 4 ÷ LINE 6
COLUMN (F): COLUMN (D) x COLUMN (E)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

COST OF COMMON EQUITY CALCULATION

LINE NO.			
1	**DCF METHODOLOGY**		
2	DCF - WATER COMPANY SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.00%	SCHEDULE WAR-2, COLUMN (C), LINE 5
3	DCF - NATURAL GAS LDC SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.79%	SCHEDULE WAR-2, COLUMN (C), LINE 13
4	AVERAGE OF CAPM ESTIMATES	9.40%	(LINE 2 + LINE 3) ÷ 2
5	**CAPM METHODOLOGY**		
6	CAPM - WATER COMPANY GEOMETRIC MEAN ESTIMATE	8.10%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 5
7	CAPM - NATURAL GAS LDC GEOMETRIC MEAN ESTIMATE	6.94%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 13
8	CAPM - WATER COMPANY ARITHMETIC MEAN ESTIMATE	9.78%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 5
9	CAPM - NATURAL GAS LDC ARITHMETIC MEAN ESTIMATE	8.25%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 13
10	AVERAGE OF CAPM ESTIMATES	8.27%	(SUM OF LINES 6 THRU 9) ÷ 4
11	**AVERAGE OF DCF AND CAPM ESTIMATES**	8.83%	(LINE 4 + LINE 10) ÷ 2
12	**INFLATION ADJUSTMENT**	2.00%	SCHEDULE WAR 1, PAGE 5 OF 5
13	**FVRB COST OF COMMON EQUITY ESTIMATE**	6.83%	LINE 11 - LINE 12

CHAPARRAL CITY WATER COMPANY, INC
DOCKET NO. W-02113A-07-0551
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR-5 OF 5

FVRB INFLATION ADJUSTMENT TO COMMON EQUITY

LINE NO.	(A) YEAR	(B) VALUE TIPS	(C) VALUE BONDS	(D) DIFFERENCE
1	2001	3.31%	5.02%	1.70%
2	2002	2.85%	4.61%	1.77%
3	2003	1.81%	4.01%	2.20%
4	2004	1.37%	4.27%	2.90%
5	2005	1.53%	4.29%	2.76%
6	2006	2.25%	4.80%	2.54%
7	2007	2.10%	4.63%	2.54%
8	2008	0.13%	3.79%	3.66%
9	AVERAGE	1.92%	4.43%	2.51%
10	RECOMMENDED FVRB INFLATION ADJUSTMENT TO COMMON EQUITY (a)			**2.00%**

(a) BASED ON THE LOW END - ROUNDED

REFERENCES

COLUMNS (A), (B) AND (C): FEDERAL RESERVE BANK OF ST. LOUIS WEBSITE
COLUMNS (D): COLUMN (C) - COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DCF COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 2

LINE NO.	STOCK SYMBOL	COMPANY	(A) DIVIDEND YIELD	+	(B) GROWTH RATE (g)	=	(C) DCF COST OF EQUITY CAPITAL
1	AWR	AMERICAN STATES WATER CO.	2.62%	+	7.93%	=	10.56%
2	CWT	CALIFORNIA WATER SERVICE GROUP	3.08%	+	6.50%	=	9.58%
3	SWWC	SOUTHWEST WATER COMPANY	2.15%	+	5.18%	=	7.34%
4	WTR	AQUA AMERICA, INC.	2.94%	+	5.60%	=	8.54%
5	**WATER COMPANY AVERAGE**						9.00%
6	ATG	AGL RESOURCES, INC.	5.08%	+	5.75%	=	10.83%
7	ATO	ATMOS ENERGY CORP.	4.87%	+	4.32%	=	9.19%
8	LG	LACLEDE GROUP, INC.	3.41%	+	6.12%	=	9.53%
9	NJR	NEW JERSEY RESOURCES CORPORATION	3.21%	+	6.88%	=	10.09%
10	GAS	NICOR, INC.	4.30%	+	6.29%	=	10.59%
11	NWN	NORTHWEST NATURAL GAS CO.	3.19%	+	5.24%	=	8.43%
12	PNY	PIEDMONT NATURAL GAS COMPANY	3.73%	+	4.76%	=	8.49%
13	SJI	SOUTH JERSEY INDUSTIES, INC.	3.03%	+	10.48%	=	13.51%
14	SWX	SOUTHWEST GAS CORPORATION	3.07%	+	5.78%	=	8.86%
15	WGL	WGL HOLDINGS, INC.	4.36%	+	4.06%	=	8.42%
16	**NATURAL GAS LDC AVERAGE**						9.79%

REFERENCES:
COLUMN (A): SCHEDULE WAR - 3, COLUMN C
COLUMN (B): SCHEDULE WAR - 4, PAGE 1, COLUMN C
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND YIELD CALCULATION

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 3

LINE NO.	STOCK SYMBOL	COMPANY	(A) ESTIMATED DIVIDEND (PER SHARE)	÷	(B) AVERAGE STOCK PRICE (PER SHARE)	=	(C) DIVIDEND YIELD
1	AWR	AMERICAN STATES WATER CO.	$1.00	÷	$38.12	=	2.62%
2	CWT	CALIFORNIA WATER SERVICE GROUP	1.17	÷	38.07	=	3.08%
3	SWWC	SOUTHWEST WATER COMPANY	0.24	÷	11.15	=	2.15%
4	WTR	AQUA AMERICA, INC.	0.50	÷	17.01	=	2.94%
5	**WATER COMPANY AVERAGE**						2.70%
6	ATG	AGL RESOURCES, INC.	$1.68	÷	$33.06	=	5.08%
7	ATO	ATMOS ENERGY CORP.	1.30	÷	26.69	=	4.87%
8	LG	LACLEDE GROUP, INC.	1.50	÷	44.02	=	3.41%
9	NJR	NEW JERSEY RESOURCES CORPORATION	1.12	÷	34.90	=	3.21%
10	GAS	NICOR, INC.	1.86	÷	43.27	=	4.30%
11	NWN	NORTHWEST NATURAL GAS CO.	1.50	÷	47.01	=	3.19%
12	PNY	PIEDMONT NATURAL GAS COMPANY	1.04	÷	27.86	=	3.73%
13	SJI	SOUTH JERSEY INDUSTIES, INC.	1.08	÷	35.62	=	3.03%
14	SWX	SOUTHWEST GAS CORPORATION	0.90	÷	29.30	=	3.07%
15	WGL	WGL HOLDINGS, INC.	1.44	÷	33.01	=	4.36%
16	**NATURAL GAS LDC AVERAGE**						3.83%

REFERENCES:
COLUMN (A): ESTIMATED 12 MONTH DIVIDEND REPORTED IN VALUE LINE INVESTMENT SURVEY - RATINGS & REPORTS DATED 07/25/2008 (WATER COMPANIES) AND 09/12/2008 (NATURAL GAS LDC's).
COLUMN (B): EIGHT WEEK AVERAGE OF CLOSING PRICES FROM 07/21/2008 TO 09/12/2008 STOCK QUOTES OBTAINED THROUGH BIG CHARTS WEB SITE - HISTORICAL QUOTES (www.bigcharts.com).
COLUMN (C): COLUMN (A) ÷ COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH RATE CALCULATION

LINE NO.	STOCK SYMBOL	COMPANY	(A) INTERNAL GROWTH (br)	+	(B) EXTERNAL GROWTH (sv)	=	(C) DIVIDEND GROWTH (g)
1	AWR	AMERICAN STATES WATER CO.	6.50%	+	1.43%	=	7.93%
2	CWT	CALIFORNIA WATER SERVICE GROUP	4.75%	+	1.75%	=	6.50%
3	SWWC	SOUTHWEST WATER COMPANY	4.00%	+	1.18%	=	5.18%
4	WTR	AQUA AMERICA, INC.	5.00%	+	0.60%	=	5.60%
5	**WATER COMPANY AVERAGE**						6.30%
6	ATG	AGL RESOURCES, INC.	5.50%	+	0.25%	=	5.75%
7	ATO	ATMOS ENERGY CORP.	4.00%	+	0.32%	=	4.32%
8	LG	LACLEDE GROUP, INC.	4.75%	+	1.37%	=	6.12%
9	NJR	NEW JERSEY RESOURCES CORPORATION	6.25%	+	0.63%	=	6.88%
10	GAS	NICOR, INC.	6.25%	+	0.04%	=	6.29%
11	NWN	NORTHWEST NATURAL GAS CO.	4.75%	+	0.49%	=	5.24%
12	PNY	PIEDMONT NATURAL GAS COMPANY	4.75%	+	0.01%	=	4.76%
13	SJI	SOUTH JERSEY INDUSTIES, INC.	9.25%	+	1.23%	=	10.48%
14	SWX	SOUTHWEST GAS CORPORATION	5.50%	+	0.28%	=	5.78%
15	WGL	WGL HOLDINGS, INC.	4.00%	+	0.06%	=	4.06%
16	**NATURAL GAS LDC AVERAGE**						5.97%

REFERENCES:
COLUMN (A): TESTIMONY, WAR
COLUMN (B): SCHEDULE WAR - 4, PAGE 2, COLUMN C
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH RATE CALCULATION

LINE NO.	STOCK SYMBOL	COMPANY	(A) SHARE GROWTH	x	(B) { [((M + B) + 1) + 2] - 1 }	=	(C) EXTERNAL GROWTH (sv)
1	AWR	AMERICAN STATES WATER CO.	2.50%	x	{ [((2.15) + 1) + 2] - 1 }	=	1.43%
2	CWT	CALIFORNIA WATER SERVICE GROUP	3.50%	x	{ [((2.00) + 1) + 2] - 1 }	=	1.75%
3	SWWC	SOUTHWEST WATER COMPANY	3.50%	x	{ [((1.68) + 1) + 2] - 1 }	=	1.18%
4	WTR	AQUA AMERICA, INC.	1.00%	x	{ [((2.21) + 1) + 2] - 1 }	=	0.60%
5	**WATER COMPANY AVERAGE**						1.24%
6	ATG	AGL RESOURCES, INC.	1.00%	x	{ [((1.50) + 1) + 2] - 1 }	=	0.25%
7	ATO	ATMOS ENERGY CORP.	5.00%	x	{ [((1.13) + 1) + 2] - 1 }	=	0.32%
8	LG	LACLEDE GROUP, INC.	3.00%	x	{ [((1.91) + 1) + 2] - 1 }	=	1.37%
9	NJR	NEW JERSEY RESOURCES CORPORATION	1.00%	x	{ [((2.26) + 1) + 2] - 1 }	=	0.63%
10	GAS	NICOR, INC.	0.07%	x	{ [((2.07) + 1) + 2] - 1 }	=	0.04%
11	NWN	NORTHWEST NATURAL GAS CO.	1.00%	x	{ [((1.99) + 1) + 2] - 1 }	=	0.49%
12	PNY	PIEDMONT NATURAL GAS COMPANY	0.01%	x	{ [((2.24) + 1) + 2] - 1 }	=	0.01%
13	SJI	SOUTH JERSEY INDUSTIES, INC.	2.00%	x	{ [((2.23) + 1) + 2] - 1 }	=	1.23%
14	SWX	SOUTHWEST GAS CORPORATION	2.50%	x	{ [((1.23) + 1) + 2] - 1 }	=	0.28%
15	WGL	WGL HOLDINGS, INC.	0.20%	x	{ [((1.56) + 1) + 2] - 1 }	=	0.06%
16	**NATURAL GAS LDC AVERAGE**						0.47%

REFERENCES:
COLUMN (A): TESTIMONY, WAR
COLUMN (B): VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 07/25/2008 (WATER COMPANIES) AND 09/12/2008 (NATURAL GAS LDC's)
COLUMN (C): COLUMN (A) x COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH COMPONENTS

LINE NO.	STOCK SYMBOL	WATER COMPANY NAME	OPERATING PERIOD	(A) RETENTION RATIO (b)	x	(B) RETURN ON BOOK EQUITY (r)	=	(C) DIVIDEND GROWTH (g)	(D) BOOK VALUE ($/SHARE)	(E) SHARES OUTST. (MILLIONS)	(F) SHARE GROWTH
1	AWR	AMERICAN STATES WATER CO.	2003	-0.1282		5.60%		NMF	13.97	15.21	
2			2004	0.1524		6.60%		1.01%	15.01	16.75	
3			2005	0.3182		8.50%		2.70%	15.72	16.80	
4			2006	0.3158		8.10%		2.56%	16.64	17.05	
5			2007	0.4074		9.30%		3.79%	17.53	17.23	
6			GROWTH 2003 - 2007					2.51%	4.50%		3.17%
7			2008	0.3939		9.50%		3.74%		17.75	3.02%
8			2009	0.4162		11.00%		4.58%		18.00	2.21%
9			2011-13	0.5200		13.50%		7.02%	3.00%	19.00	1.97%
10											
11	CWT	CALIFORNIA WATER SERVICE GROUP	2003	0.0744		7.90%		0.59%	14.44	16.93	
12			2004	0.2260		9.00%		2.03%	15.66	18.37	
13			2005	0.2245		9.30%		2.09%	15.79	18.39	
14			2006	0.1418		6.80%		0.96%	18.15	20.66	
15			2007	0.2267		8.10%		1.84%	18.50	20.67	
16			GROWTH 2003 - 2007					1.50%	6.00%		5.12%
17			2008	0.2688		8.50%		2.28%		21.25	2.81%
18			2009	0.3622		9.50%		3.44%		21.75	2.58%
19			2011-13	0.4851		11.00%		5.34%	4.00%	25.00	3.88%
20											
21	SWWC	SOUTHWEST WATER COMPANY	2003	0.6364		9.10%		5.79%	4.90	16.17	
22			2004	0.2174		3.60%		0.78%	6.17	20.36	
23			2005	0.4118		5.00%		2.06%	6.49	22.33	
24			2006	0.4750		5.60%		2.66%	6.98	23.80	
25			2007	0.2581		3.50%		0.90%	5.98	24.27	
26			GROWTH 2003 - 2007					2.44%	11.50%		5.12%
27			2008	0.2000		4.50%		0.90%		25.00	3.01%
28			2009	0.3500		6.00%		2.10%		26.00	3.50%
29			2011-13	0.5714		9.00%		5.14%	3.00%	28.00	2.90%
30											
31	WTR	AQUA AMERICA, INC.	2003	0.3860		10.20%		3.94%	5.34	123.45	
32			2004	0.4219		10.70%		4.51%	5.89	127.18	
33			2005	0.4366		11.20%		4.89%	6.30	128.97	
34			2006	0.3714		10.00%		3.71%	6.96	132.33	
35			2007	0.3239		9.70%		3.14%	7.32	133.40	
36			GROWTH 2003 - 2007					4.04%	10.50%		5.12%
37			2008	0.4118		11.00%		4.53%		134.50	0.82%
38			2009	0.4105		11.50%		4.72%		135.50	0.78%
39			2011-13	0.4333		12.00%		5.20%	6.50%	139.00	0.83%

REFERENCES:
COLUMNS (A) & (B): VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 07/25/2008
COLUMN (C): COLUMN (A) x COLUMN (B)
COLUMN (C): LINES 6, 16 & 26, SIMPLE AVERAGE GROWTH, 2003 - 2007

COLUMN (D): VALUE LINE INVESTMENT SURVEY
COLUMN (D): LINES 6, 16 & 26, COMPOUND GROWTH RATE
COLUMN (E): VALUE LINE INVESTMENT SURVEY
COLUMN (F): COMPOUND GROWTH RATES OF DATES SHOWN

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH COMPONENTS

LINE NO.	STOCK SYMBOL	NATURAL GAS LDC NAME	OPERATING PERIOD	(A) RETENTION RATIO (b)	x	(B) RETURN ON BOOK EQUITY (r)	=	(C) DIVIDEND GROWTH (g)	(D) BOOK VALUE ($/SHARE)	(E) SHARES OUTST. (MILLIONS)	(F) SHARE GROWTH
1	ATG	AGL RESOURCES, INC.	2003	0.4663		14.00%		6.53%	14.66	64.50	
2			2004	0.4956		11.00%		5.45%	18.06	76.70	
3			2005	0.4758		12.90%		6.14%	19.29	77.70	
4			2006	0.4559		13.20%		6.02%	20.71	77.70	
5			2007	0.3971		12.70%		5.04%	21.74	76.40	
6			GROWTH 2003 - 2007					5.84%	10.50%		4.32%
7			2008	0.3891		12.50%		4.86%		77.00	0.79%
8			2009	0.3965		12.50%		4.96%		78.00	1.04%
9			2011-13	0.4159		14.00%		5.82%	1.50%	80.00	0.93%
10											
11	ATO	ATMOS ENERGY CORP.	2003	0.2982		9.30%		2.77%	16.66	51.48	
12			2004	0.2278		7.60%		1.73%	18.05	62.80	
13			2005	0.2791		8.50%		2.37%	19.90	80.54	
14			2006	0.3700		9.80%		3.63%	20.16	81.74	
15			2007	0.3402		8.70%		2.96%	22.01	89.33	
16			GROWTH 2003 - 2007					2.69%	9.00%		14.77%
17			2008	0.3434		8.50%		2.92%		91.00	1.87%
18			2009	0.3714		8.50%		3.16%		95.00	3.12%
19			2011-13	0.4286		9.50%		4 07%	3.50%	115.00	5.18%
20											
21	LG	LACLEDE GROUP, INC.	2003	0.2637		11.60%		3.06%	15.65	19.11	
22			2004	0.2582		10.10%		2.61%	16.96	20.98	
23			2005	0.2789		10.90%		3.04%	17.31	21.17	
24			2006	0.4093		12.50%		5.12%	18.85	21.36	
25			2007	0.3723		11.60%		4.32%	19.79	21.65	
26			GROWTH 2003 - 2007					3.63%	4.50%		3.17%
27			2008	0.4582		12.00%		5.50%		22.00	1.62%
28			2009	0.3880		11.00%		4.27%		22.50	1.94%
29			2011-13	0.4211		11.50%		4.84%	5.50%	25.50	3.33%
30											
31	NJR	NEW JERSEY RESOURCES CORPORATION	2003	0.4780		15.60%		7.46%	10.26	40.85	
32			2004	0.4882		15.30%		7.47%	11.25	41.61	
33			2005	0.4859		17.00%		8.26%	10.60	41.32	
34			2006	0.4866		12.60%		6.13%	15.00	41.44	
35			2007	0.3484		10.10%		3.52%	15.50	41.61	
36			GROWTH 2003 - 2007					6.57%	10.00%		0.46%
37			2008	-0.0091		7.00%		NMF		42.00	0.94%
38			2009	0.4558		12.50%		5.70%		42.50	1.06%
39			2011-13	0.5143		12.50%		6.43%	9.00%	44.00	1.12%

REFERENCES:
COLUMNS (A) & (B): VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 09/12/2008
COLUMN (C): COLUMN (A) x COLUMN (B)
COLUMN (C): LINES 6, 16 & 26, SIMPLE AVERAGE GROWTH, 2003 - 2007

COLUMN (D): VALUE LINE INVESTMENT SURVEY
COLUMN (D): LINES 6, 16 & 26, COMPOUND GROWTH RATE
COLUMN (E): VALUE LINE INVESTMENT SURVEY
COLUMN (F): COMPOUND GROWTH RATES OF DATES SHOWN

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH COMPONENTS

LINE NO.	STOCK SYMBOL	NATURAL GAS LDC NAME	OPERATING PERIOD	(A) RETENTION RATIO (b)	x	(B) RETURN ON BOOK EQUITY (r)	=	(C) DIVIDEND GROWTH (g)	(D) BOOK VALUE ($/SHARE)	(E) SHARES OUTST. (MILLIONS)	(F) SHARE GROWTH
1	GAS	NICOR, INC.	2003	0.1185		12.30%		1.46%	17.13	44.04	
2			2004	0.1622		13.10%		2.12%	16.99	44.10	
3			2005	0.1806		12.50%		2.26%	18.36	44.18	
4			2006	0.3519		14.70%		5.17%	19.43	44.90	
5			2007	0.3779		14.30%		5.40%	20.58	45.90	
6			GROWTH 2003 - 2007					3.28%	4.00%		1.04%
7			2008	0.2250		11.50%		2.59%		45.00	-1.96%
8			2009	0.2846		12.00%		3.42%		45.00	-0.99%
9			2011-13	0.4904		14.00%		6.87%	5.00%	45.00	-0.40%
10											
11	NWN	NORTHWEST NATURAL GAS CO.	2003	0.2784		9.00%		2.51%	19.52	25.94	
12			2004	0.3011		8.90%		2.68%	20.64	27.55	
13			2005	0.3744		9.90%		3.71%	21.28	27.58	
14			2006	0.4085		10.90%		4.45%	22.01	27.24	
15			2007	0.4783		12.50%		5.98%	22.52	26.41	
16			GROWTH 2003 - 2007					3.86%	3.50%		0.45%
17			2008	0.4154		11.50%		4.78%		26.50	0.34%
18			2009	0.4286		11.50%		4.93%		26.50	0.17%
19			2011-13	0.4388		11.00%		4.83%	3.50%	28.00	1.18%
20											
21	PNY	PIEDMONT NATURAL GAS COMPANY	2003	0.2613		11.80%		3.08%	9.36	67.31	
22			2004	0.3307		11.10%		3.67%	11.15	76.67	
23			2005	0.3106		11.50%		3.57%	11.53	76.70	
24			2006	0.2520		11.00%		2.77%	11.83	74.61	
25			2007	0.2929		11.90%		3.49%	11.99	73.23	
26			GROWTH 2003 - 2007					3.32%	6.50%		2.13%
27			2008	0.3355		12.50%		4.19%		73.00	-0.31%
28			2009	0.3313		12.50%		4.14%		72.75	-0.33%
29			2011-13	0.3897		13.00%		5.07%	4.00%	72.00	-0.34%
30											
31	SJI	SOUTH JERSEY INDUSTIES, INC.	2003	0.4307		11.60%		5.00%	11.26	26.46	
32			2004	0.4810		12.50%		6.01%	12.41	27.76	
33			2005	0.4971		12.40%		6.16%	13.50	28.98	
34			2006	0.6260		16.30%		10.20%	15.11	29.33	
35			2007	0.5167		12.80%		6.61%	16.25	29.61	
36			GROWTH 2003 - 2007					6.80%	12.50%		2.85%
37			2008	0.5217		14.50%		7.57%		30.00	1.32%
38			2009	0.5360		15.00%		8.04%		31.00	2.32%
39			2011-13	0.5733		16.50%		9.46%	3.50%	33.00	2.19%

REFERENCES:
COLUMNS (A) & (B): VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 09/12/2008
COLUMN (C): COLUMN (A) x COLUMN (B)
COLUMN (C): LINES 6, 16 & 26, SIMPLE AVERAGE GROWTH, 2003 - 2007

COLUMN (D): VALUE LINE INVESTMENT SURVEY
COLUMN (D): LINES 6, 16 & 26, COMPOUND GROWTH RATE
COLUMN (E): VALUE LINE INVESTMENT SURVEY
COLUMN (F): COMPOUND GROWTH RATES OF DATES SHOWN

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DIVIDEND GROWTH COMPONENTS

LINE NO.	STOCK SYMBOL								
1	SWX	SOUTHWEST GAS CORPORATION	2003	0.2743	6.10%	1.67%	18.42	34.23	
2			2004	0.5060	8.30%	4.20%	19.18	36.79	
3			2005	0.3440	6.40%	2.20%	19.10	39.33	
4			2006	0.5859	8.90%	5.21%	21.58	41.77	
5			2007	0.5590	8.50%	4.75%	22.98	42.81	
6			GROWTH 2003 - 2007			3.61%	3.50%		5.75%
7			2008	0.5500	8.50%	4.68%		44.00	2.78%
8			2009	0.5727	8.50%	4.87%		45.00	2.53%
9			2011-13	0.6000	9.50%	5.70%	4.00%	48.00	2.31%
10									
11	WGL	WGL HOLDINGS, INC.	2003	0.4435	14.00%	6.21%	16.25	48.63	
12			2004	0.3434	14.00%	4.81%	16.95	48.67	
13			2005	0.3744	12.00%	4.49%	17.80	48.65	
14			2006	0.3093	10.20%	3.15%	18.28	48.89	
15			2007	0.3476	10.40%	3.62%	19.83	49.45	
16			GROWTH 2003 - 2007			4.46%	3.50%		0.42%
17			2008	0.4167	12.00%	5.00%		49.50	0.10%
18			2009	0.4122	11.50%	4.74%		49.60	0.15%
19			2011-13	0.3882	10.50%	4.08%	5.00%	50.00	0.22%

REFERENCES:
COLUMNS (A) & (B): VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 09/12/2008
COLUMN (C): COLUMN (A) x COLUMN (B)
COLUMN (C): LINES 6, 16 & 26, SIMPLE AVERAGE GROWTH, 2003 - 2007

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
GROWTH RATE COMPARISON

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 6

WATER COMPANY SAMPLE:

LINE NO.	STOCK SYMBOL	(A) (br) + (sv)	(B) ZACKS EPS	(C) VALUE LINE PROJECTED EPS	(C) DPS	(C) BVPS	(D) VALUE LINE HISTORIC EPS	(D) DPS	(D) BVPS	(E) VALUE LINE & ZACKS AVGS.	(F) 5 - YEAR COMPOUND HISTORY EPS	(F) DPS	(F) BVPS
1	AWR	7.93%	10.00%	10.00%	5.00%	3.00%	1.50%	1.50%	4.50%	5.07%	20.05%	2.20%	5.84%
2	CWT	6.50%	9.30%	4.75%	1.00%	3.50%	4.50%	0.50%	6.00%	4.22%	5.52%	0.88%	6.39%
3	SWWC	5.18%	8.50%	12.00%	6.00%	3.00%	-19.50%	9.00%	11.50%	4.36%	-8.38%	9.50%	5.11%
4	WTR	5.60%	8.80%	9.00%	7.50%	6.50%	7.00%	7.50%	10.50%	8.11%	5.64%	8.22%	8.20%
5				8.94%	4.88%	4.00%	-1.63%	4.63%	8.13%		5.71%	5.20%	6.38%
6	AVERAGES	6.30%	9.15%		5.94%			3.71%		5.44%		5.76%	

NATURAL GAS LDC SAMPLE:

LINE NO.	STOCK SYMBOL	(A) (br) + (sv)	(B) ZACKS EPS	(C) VALUE LINE PROJECTED EPS	(C) DPS	(C) BVPS	(D) VALUE LINE HISTORIC EPS	(D) DPS	(D) BVPS	(E) VALUE LINE & ZACKS AVGS.	(F) 5 - YEAR COMPOUND HISTORY EPS	(F) DPS	(F) BVPS
1	ATG	5.75%	4.80%	3.00%	4.00%	1.50%	15.00%	4.00%	10.50%	6.11%	6.94%	10.25%	10.35%
2	ATO	4.32%	5.40%	4.50%	2.00%	3.50%	7.50%	1.50%	9.00%	4.77%	3.21%	1.63%	7.21%
3	LG	6.12%	10.00%	4.50%	2.50%	5.50%	9.50%	1.00%	4.50%	5.36%	6.14%	1.99%	6.04%
4	NJR	6.88%	8.00%	8.50%	6.00%	9.00%	6.00%	4.00%	10.00%	7.36%	-0.63%	5.03%	10.87%
5	GAS	6.29%	5.80%	5.00%	-	5.00%	-1.50%	1.00%	4.00%	3.22%	9.11%	0.00%	4.69%
6	NWN	5.24%	6.50%	7.00%	5.50%	3.50%	6.50%	2.00%	3.50%	4.93%	11.90%	3.19%	3.64%
7	PNY	4.76%	5.60%	7.00%	4.00%	4.00%	6.00%	4.50%	6.50%	5.37%	5.97%	4.82%	6.39%
8	SJI	10.48%	7.80%	6.00%	5.50%	3.50%	12.50%	4.50%	12.50%	7.47%	11.14%	6.67%	9.60%
9	SWX	5.78%	8.00%	7.50%	4.00%	4.00%	6.00%	-	3.50%	5.50%	14.61%	1.20%	5.69%
10	WGL	4.06%	7.50%	3.50%	2.50%	5.00%	5.00%	1.50%	3.50%	4.07%	-2.25%	1.71%	5.10%
11				5.65%	4.00%	4.45%	7.25%	2.67%	6.75%		6.61%	3.65%	6.96%
12	AVERAGES	5.97%	6.94%		4.70%			5.56%		5.42%		5.74%	

REFERENCES:
COLUMN (A): SCHEDULE WAR - 4, PAGE 1, COLUMN C
COLUMN (B): ZACKS INVESTMENT RESEARCH (www.zacks.com)
COLUMN (C): VALUE LINE INVESTMENT SURVEY - RATINGS & REPORTS DATED 07/25/2008 (WATER COMPANIES) AND 09/12/2008 (NATURAL GAS LDC's)
COLUMN (D): VALUE LINE INVESTMENT SURVEY - RATINGS & REPORTS DATED 07/25/2008 (WATER COMPANIES) AND 09/12/2008 (NATURAL GAS LDC's)
COLUMN (E): SIMPLE AVERAGE OF COLUMNS (B) THRU (D) LINES 1, 3, 5 AND 7
COLUMN (F): 5-YEAR ANNUAL GROWTH RATE CALCULATED WITH DATA COMPILED FROM VALUE LINE INVESTMENT SURVEY
- RATINGS & REPORTS DATED 07/25/2008 (WATER COMPANIES) AND 09/12/2008 (NATURAL GAS LDC's)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 1 OF 2

BASED ON A GEOMETRIC MEAN:

LINE NO.	STOCK SYMBOL						(A)										(B) EXPECTED RETURN
		k	=	r_f	+	[	ß	x	(	r_m	-	r_f	)	]	=		
1	AWR	k	=	2.95%	+	[	1.05	x	(	10.40%	-	5.50%	)	]	=		8.10%
2	CWT	k	=	2.95%	+	[	1.15	x	(	10.40%	-	5.50%	)	]	=		8.59%
3	SWWC	k	=	2.95%	+	[	1.05	x	(	10.40%	-	5.50%	)	]	=		8.10%
4	WTR	k	=	2.95%	+	[	0.95	x	(	10.40%	-	5.50%	)	]	=		7.61%
5	**WATER COMPANY AVERAGE**						1.05										8.10%
6	ATG	k	=	2.95%	+	[	0.85	x	(	10.40%	-	5.50%	)	]	=		7.12%
7	ATO	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
8	LG	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
9	NJR	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
10	GAS	k	=	2.95%	+	[	0.90	x	(	10.40%	-	5.50%	)	]	=		7.36%
11	NWN	k	=	2.95%	+	[	0.75	x	(	10.40%	-	5.50%	)	]	=		6.63%
12	PNY	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
13	SJI	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
14	SWX	k	=	2.95%	+	[	0.80	x	(	10.40%	-	5.50%	)	]	=		6.87%
15	WGL	k	=	2.95%	+	[	0.85	x	(	10.40%	-	5.50%	)	]	=		7.12%
16	**NATURAL GAS LDC AVERAGE**						0.82										6.94%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [ß (r_m - r_f)]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE GEOMETRIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK.

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 2 OF 2

BASED ON AN ARITHMETIC MEAN:

LINE NO.	STOCK SYMBOL	k	=	r_f	+ [	(A) ß	x	(	r_m	-	r_f	)]	=	(B) EXPECTED RETURN
1	AWR	k	=	2.95%	+ [	1.05	x	(	12.30%	-	5.80%	)]	=	9.78%
2	CWT	k	=	2.95%	+ [	1.15	x	(	12.30%	-	5.80%	)]	=	10.43%
3	SWWC	k	=	2.95%	+ [	1.05	x	(	12.30%	-	5.80%	)]	=	9.78%
4	WTR	k	=	2.95%	+ [	0.95	x	(	12.30%	-	5.80%	)]	=	9.13%
5	WATER COMPANY AVERAGE					1.05								9.78%
6	ATG	k	=	2.95%	+ [	0.85	x	(	12.30%	-	5.80%	)]	=	8.48%
7	ATO	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
8	LG	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
9	NJR	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
10	GAS	k	=	2.95%	+ [	0.90	x	(	12.30%	-	5.80%	)]	=	8.80%
11	NWN	k	=	2.95%	+ [	0.75	x	(	12.30%	-	5.80%	)]	=	7.83%
12	PNY	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
13	SJI	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
14	SWX	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.80%	)]	=	8.15%
15	WGL	k	=	2.95%	+ [	0.85	x	(	12.30%	-	5.80%	)]	=	8.48%
16	NATURAL GAS LDC AVERAGE					0.82								8.25%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY' "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE ARITHMETIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK.

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
ECONOMIC INDICATORS - 1990 TO PRESENT

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 8

LINE NO.	YEAR	(A) CHANGE IN CPI	(B) CHANGE IN GDP (1996 $)	(C) PRIME RATE	(D) FED. DISC. RATE	(E) FED. FUNDS RATE	(F) 91-DAY T-BILLS	(G) 30-YR T-BONDS	(H) A-RATED UTIL. BOND YIELD	(I) Baa-RATED UTIL. BOND YIELD
1	1990	5.40%	1.90%	10.01%	6.98%	8.10%	7.50%	7.49%	9.86%	10.06%
2	1991	4.21%	-0.20%	8.46%	5.45%	5.69%	5.38%	5.38%	9.36%	9.55%
3	1992	3.01%	3.30%	6.25%	3.25%	3.52%	3.43%	3.43%	8.69%	8.86%
4	1993	2.99%	2.70%	6.00%	3.00%	3.02%	3.00%	3.00%	7.59%	7.91%
5	1994	2.56%	4.00%	7.14%	3.60%	4.21%	4.25%	4.25%	8.31%	8.63%
6	1995	2.83%	2.50%	8.83%	5.21%	5.83%	5.49%	5.49%	7.89%	8.29%
7	1996	2.95%	3.70%	8.27%	5.02%	5.30%	5.01%	5.01%	7.75%	8.17%
8	1997	1.70%	4.50%	8.44%	5.00%	5.46%	5.06%	5.06%	7.60%	8.12%
9	1998	1.60%	4.20%	8.35%	4.92%	5.35%	4.78%	4.78%	7.04%	7.27%
10	1999	2.70%	4.50%	7.99%	4.62%	4.97%	4.64%	4.64%	7.62%	7.88%
11	2000	3.40%	3.70%	9.23%	5.73%	6.24%	5.82%	5.82%	8.24%	8.36%
12	2001	1.60%	0.80%	6.92%	3.41%	3.88%	3.40%	5.95%	7.59%	8.02%
13	2002	2.40%	1.60%	4.67%	1.17%	1.67%	1.61%	5.38%	7.41%	7.98%
14	2003	1.90%	2.50%	4.12%	2.03%	1.13%	1.01%	4.92%	6.18%	6.64%
15	2004	3.30%	3.60%	4.34%	2.34%	1.35%	1.37%	5.03%	5.77%	6.20%
16	2005	3.40%	2.90%	6.16%	4.19%	3.22%	3.15%	4.57%	5.38%	5.78%
17	2006	2.50%	2.80%	7.97%	5.96%	4.97%	4.73%	4.91%	5.94%	6.30%
18	2007	4.10%	2.00%	8.05%	5.86%	5.02%	4.36%	4.84%	6.07%	6.24%
19	CURRENT	0.80%	1.90%	5.00%	2.25%	2.00%	1.68%	4.32%	6.13%	6.54%

REFERENCES:
COLUMN (A): 1990 - CURRENT, U.S. DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS WEB SITE
COLUMN (B): 1990 - CURRENT, U.S. DEPARTMENT OF COMMERCE, BUREAU OF ECONOMIC ANALYSIS WEB SITE
COLUMN (C) THROUGH (G): 1990 - 2003, FEDERAL RESERVE BANK OF ST. LOUIS WEB SITE
COLUMN (C) THROUGH (F): CURRENT, THE VALUE LINE INVESTMENT SURVEY, DATED 09/12/2008
COLUMN (G) THROUGH (I): CURRENT, THE VALUE LINE INVESTMENT SURVEY, DATED 09/12/2008
COLUMN (H) THROUGH (J): 1990 - 2000, MOODY'S PUBLIC UTILITY REPORTS
COLUMN (H) THROUGH (I): 2001, MERGENT 2002 PUBLIC UTILITY MANUAL
COLUMN (H) THROUGH (I): 2003 MERGENT NEWS REPORTS

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPITAL STRUCTURES OF SAMPLE COMPANIES

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 9

AVERAGE CAPITAL STRUCTURES OF SAMPLE WATER COMPANIES

LINE NO.		AWR	PCT.	CWT	PCT.	SWWC	PCT.	WTR	PCT.	WATER COMPANY AVERAGE	PCT.
1	DEBT	$ 267.2	46.9%	$ 289.2	42.6%	$ 66.8	29.6%	$ 1,215.0	55.4%	$ 459.6	50.2%
2											
3	PREFERRED STOCK	0.0	0.0%	3.5	0.5%	0.5	0.2%	0.0	0.0%	1.0	0.1%
4											
5	COMMON EQUITY	302.1	53.1%	385.7	56.9%	158.7	70.2%	976.3	44.6%	455.7	49.7%
6											
7	TOTALS	$ 569.3	100%	$ 678.4	100%	$ 226.0	100%	$ 2,191.3	100%	$ 916.2	100%

AVERAGE CAPITAL STRUCTURES OF SAMPLE NATURAL GAS COMPANIES

LINE NO.		ATG	PCT.	ATO	PCT.	LG	PCT.	NJR	PCT.	GAS	PCT.
1											
2											
3	DEBT	$ 1,674.0	50.2%	$ 1,602.4	42.3%	$ 355.5	45.3%	$ 383.1	37.3%	$ 502.2	34.7%
4											
5	PREFERRED STOCK	0.0	0.0%	0.0	0.0%	0.6	0.1%	0.0	0.0%	0.6	0.0%
6											
7	COMMON EQUITY	1,661.0	49.8%	2,183.1	57.7%	428.4	54.6%	644.8	62.7%	945.2	65.3%
8											
9	TOTALS	$ 3,335.0	100%	$ 3,785.5	100%	$ 784.5	100%	$ 1,027.9	100%	$ 1,448.0	100%
10											
11											
12		NWN	PCT.	PNY	PCT.	SJI	PCT.	SWX	PCT.	WGL	PCT.
13											
14	DEBT	$ 517.0	46.5%	$ 1,020.4	53.7%	$ 358.0	42.7%	$ 1,275.1	54.1%	$ 637.3	38.7%
15											
16	PREFERRED STOCK	0.0	0.0%	0.0	0.0%	0.0	0.0%	100.0	4.2%	28.2	1.7%
17											
18	COMMON EQUITY	594.8	53.5%	878.4	46.3%	481.0	57.3%	983.7	41.7%	980.8	59.6%
19											
20	TOTALS	$ 1,111.8	100%	$ 1,898.8	100%	$ 839.0	100%	$ 2,358.8	100%	$1,646.3	100%
21											
22											
23		NATURAL GAS LDC				WATER & LDC					
24		AVERAGE	PCT.			AVERAGE	PCT.				
25											
26	DEBT	$ 832.5	45.7%			$ 646.0	47.2%				
27											
28	PREFERRED STOCK	12.9	0.7%			6.5	0.5%				
29											
30	COMMON EQUITY	978.1	53.6%			716.9	52.4%				
31											
32	TOTALS	$ 1,823.6	100%			$ 1,369.4	100%				

REFERENCE:
MOST RECENT SEC 10-K FILINGS OR ANNUAL REPORTS

MN 658.1522 K833V 2005

EXHIBIT
R-15
ADMITTED

R-15

VALUATION

MEASURING AND MANAGING THE VALUE OF COMPANIES

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10

Estimating the Cost of Capital

To value a company using enterprise DCF, we discount free cash flow by the weighted average cost of capital (WACC). The weighted average cost of capital represents the opportunity cost that investors face for investing their funds in one particular business instead of others with similar risk.

The most important principle underlying successful implementation of the cost of capital is consistency between the components of WACC and free cash flow. Since free cash flow is the cash flow available to all financial investors (debt, equity, and hybrid securities), the company's WACC must include the required return for each investor. In addition, the duration and risk of the financial securities used to estimate the WACC must match that of the free cash flow being discounted. To assure consistency, the cost of capital must meet several criteria:

- It must include the opportunity costs from *all* sources of capital—debt, equity, and so on—since free cash flow is available to all investors, who expect compensation for the risks they take.
- It must weight each security's required return by its target market-based weight, not by its historical book value.
- It must be computed after corporate taxes (since free cash flow is calculated in after-tax terms). Any financing-related tax shields not included in free cash flow must be incorporated into the cost of capital or valued separately (as done in the adjusted present value).
- It must be denominated in the same currency as free cash flow.
- It must be denominated in nominal terms when cash flows are stated in nominal terms.

For most companies, discounting free cash flow at the WACC is a simple, accurate, and robust method of corporate valuation. If, however, the

company's target capital structure is expected to change significantly, for instance in a leveraged buyout (LBO), a constant WACC can overstate (or understate) the impact of interest tax shields. In this situation, discount free cash flow at the unlevered cost of equity, described later in this chapter, and value tax shields and other financing effects separately (as described in Chapter 5).

To determine the weighted average cost of capital, calculate its three components: the cost of equity, the after-tax cost of debt, and the company's target capital structure. Since *none* of the variables are directly observable, we employ various models, assumptions, and approximations to estimate each component.

In this chapter, we begin by defining the components of WACC and introducing the assumptions underlying these metrics. The next three sections detail how to estimate the cost of equity, cost of debt, and target capital structure, respectively. The chapter concludes with a discussion of WACC estimation when the company employs a complex capital structure, using hybrid securities such as convertible debt.

WEIGHTED AVERAGE COST OF CAPITAL

In its simplest form, the weighted average cost of capital is the market-based weighted average of the after-tax cost of debt and cost of equity:

$$\text{WACC} = \frac{D}{V} k_d (1 - T_m) + \frac{E}{V} k_e$$

where D/V = Target level of debt to enterprise value using market-based (not book) values

E/V = Target level of equity to enterprise value using market-based values

k_d = Cost of debt

k_e = Cost of equity

T_m = Company's marginal income tax rate

For companies with other securities, such as preferred stock, additional terms must be added to the cost of capital, representing each security's expected rate of return and percentage of total enterprise value.

The cost of capital does not include expected returns of operating liabilities, such as accounts payable. Required compensation for funds from customers, suppliers, and employees is included in operating expenses, such as cost of goods sold, so it is already incorporated in free cash flow. Including operating liabilities in the WACC would incorrectly double-count their cost of financing.

Exhibit 10.1 Home Depot: Weighted Average Cost of Capital

percent

Source of capital	Proportion of total capital	Cost of capital	Marginal tax rate	After-tax opportunity cost	Contribution to weighted average
Debt	8.3	4.7	38.2	2.9	0.2
Equity	91.7	9.9		9.9	9.1
WACC	100.0				9.3

To determine the cost of equity, we rely on the capital asset pricing model (CAPM), one of many theoretical models that convert a stock's risk into expected return.[1] The CAPM uses three variables to determine a stock's expected return: the risk-free rate, the market risk premium (i.e., the expected return of the market over risk-free bonds), and the stock's beta. In the CAPM, beta measures a stock's co-movement with the market and represents the stock's ability to further diversity the market portfolio. Stocks with high betas must have excess returns that exceed the market risk premium; the converse is true for low-beta stocks.

To approximate the cost of debt for an investment-grade firm, use the company's yield to maturity on its long-term debt. For companies with publicly traded debt, calculate yield to maturity directly from the bond's price and promised cash flows. For companies with illiquid debt, use the company's debt rating to estimate the yield to maturity. Since free cash flow is measured without interest tax shields, measure the cost of debt on an after-tax basis.

Finally, the after-tax cost of debt and cost of equity should be weighted using target levels of debt to value and equity to value. For mature companies, the target capital structure is often approximated by the company's current debt-to-value ratio, using market values of debt and equity. As will be explained later, you should not use book values.

In Exhibit 10.1, we present the WACC calculation for Home Depot. The company's cost of equity was determined using the CAPM, which led to a required equity return of 9.9 percent. To apply the CAPM, we used the December 2003 10-year U.S. government bond rate of 4.3 percent, a market risk premium of 4.5 percent, and a relevered industry beta of 1.23. As a

[1] Depending on the context, we use the terms *expected return*, *required return*, and *opportunity cost* interchangeably. Expected return refers to an investor's expected return on a security, given its level of risk. Financial managers refer to a "required return" because the return on an internal project must exceed the expected return on comparable investments. Otherwise, the investor would generate better returns outside the company. This is why the term *opportunity cost* also is quite common.

proxy for Home Depot's pretax cost of debt, we used the yield to maturity on AA-rated debt (4.7 percent). In Chapter 7, we estimated Home Depot's marginal tax rate at 38.2 percent, so its after-tax cost of debt equals 2.9 percent. Finally, we assume Home Depot will maintain a current debt-to-value ratio of 8.3 percent going forward.[2] Adding the weighted contributions from debt and equity, we arrive at a WACC equal to 9.3 percent.

We discuss each component of the weighted average cost of capital next.

ESTIMATING THE COST OF EQUITY

To estimate the cost of equity, we must determine the expected rate of return of the company's stock. Since expected rates of return are unobservable, we rely on asset-pricing models that translate risk into expected return.

The most common asset-pricing model is the capital asset pricing model (CAPM). Other models include the Fama-French three-factor model and the arbitrage pricing theory (APT). The three models differ primarily in how they define risk. The CAPM defines a stock's risk as its sensitivity to the stock market,[3] whereas the Fama-French three-factor model defines risk as a stock's sensitivity to three portfolios: the stock market, a portfolio based on firm size, and a portfolio based on book-to-market ratios. The CAPM is the most common method for estimating expected returns, so we begin our analysis with that model.

Capital Asset Pricing Model

Because the CAPM is discussed at length in modern finance textbooks,[4] we will not delve into the theory here. Instead, we focus on best practices for implementation.

The CAPM postulates that the expected rate of return on any security equals the risk-free rate plus the security's beta times the market risk premium:

$$E(R_i) = r_f + \beta_i\,[E(R_m) - r_f]$$

[2] Net debt equals reported debt plus the present value of operating leases, less excess cash. Although net debt to value at 8.3 percent is probably overly conservative, there is no evidence that Home Depot plans to increase its debt-to-value ratio.

[3] In theory, the market portfolio represents the value-weighted portfolio of all assets, both traded (such as stocks) and untraded (such as a person's skill set). Throughout this chapter, we use a well-diversified stock portfolio, such as the S&P 500 or the Morgan Stanley Capital International World Index, as a proxy for the market portfolio.

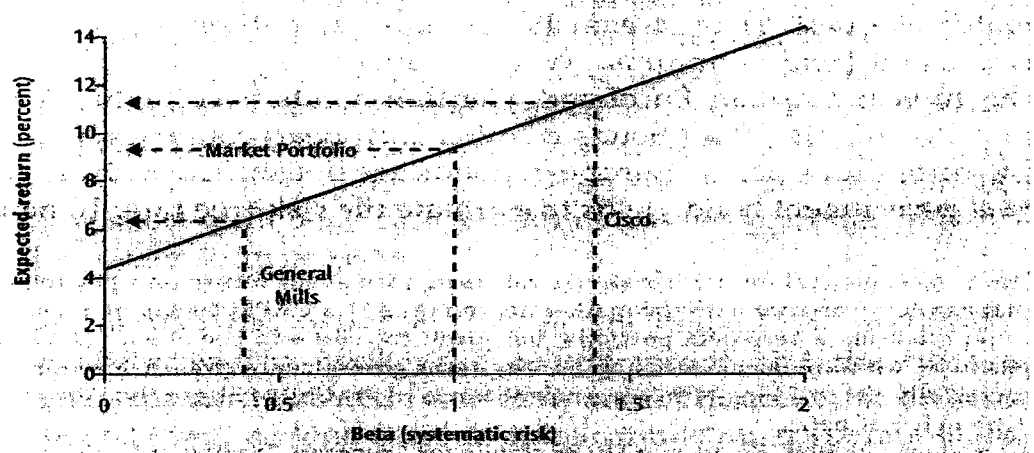
[4] For example, Richard Brealey and Stewart Myers, *Principles of Corporate Finance* (New York: McGraw-Hill, 2002); and Thomas Copeland, Fred Weston, and Kuldeep Shastri, *Financial Theory and Corporate Policy* (Boston: Addison-Wesley, 2005).

where $E(R_i)$ = Security i's expected return
r_f = Risk-free rate
βi = Stock's sensitivity to the market
$E(R_m)$ = Expected return of the market

In the CAPM, the risk-free rate and market risk premium (defined as the difference between $E(R_m)$ and r_f) are common to all companies; only beta varies across companies. Beta represents a stock's incremental risk to a diversified investor, where risk is defined by how much the stock covaries with the aggregate stock market. Consider General Mills, a cereal manufacturer, and Cisco, a maker of network routers. Consumer cereal purchases are relatively independent of the stock market's value, so the beta for General Mills is low; we estimated it at 0.4. Based on a risk-free rate of 4.3 percent and a market risk premium of 5 percent, the cost of equity for General Mills is estimated at 6.3 percent (see Exhibit 10.2). In contrast, technology companies tend to have high betas. When the economy struggles, the stock market drops, and companies stop purchasing new technology. Thus, Cisco's value is highly correlated with the market's value, and its beta is high. Based on a beta of 1.4, Cisco's expected rate of return is 11.3 percent. Since General Mills offers greater protection against market downturns than Cisco, investors are willing to pay a premium for the stock, driving down expected returns. Conversely, since Cisco offers little diversification to the market portfolio, the company must earn higher returns to entice investors.

Although the CAPM is based on solid theory (the 1990 Nobel Prize in Economics was awarded to the model's primary author, William Sharpe),

Exhibit 10.2 The Capital Assets Pricing Model (CAPM)



the model provides little guidance for implementation. For instance, when valuing a company, which risk-free rate should you use? How do you estimate the market risk premium and beta? In the following section, we address these issues. Our general conclusions are as follows:

- To estimate the risk-free rate in developed economies, use highly liquid, long-term government securities, such as the 10-year zero-coupon strip.
- Based on historical averages and forward-looking estimates, the appropriate market risk premium is currently between 4.5 and 5.5 percent.
- To estimate a company's beta, use an industry-derived unlevered beta levered to the company's target capital structure.

Estimating the risk-free rate To estimate the risk-free rate, we look to government default-free bonds.[5] Government bonds come in many maturities. For instance, the U.S. Treasury issues bonds with maturities ranging from one month to 20 years. Since different maturities can generate different yields to maturity, which maturity should you use?

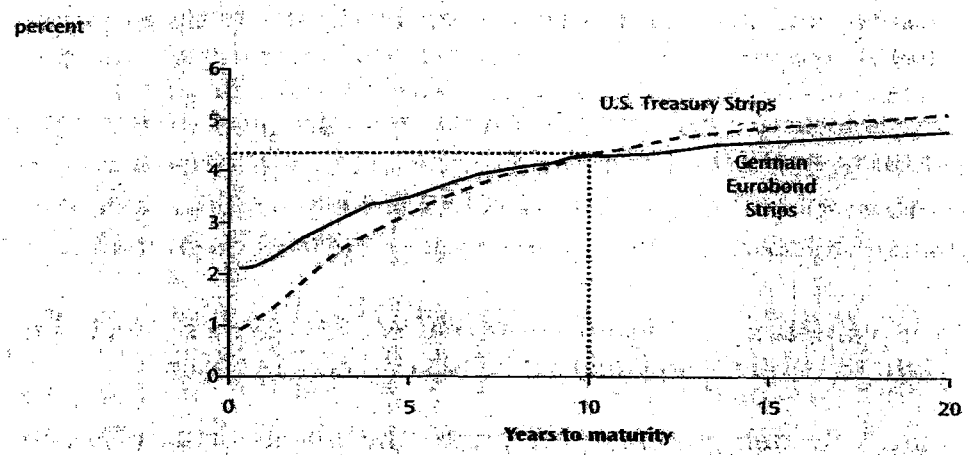
Ideally, each cash flow should be discounted using a government bond with a similar maturity. For instance, a cash flow generated 10 years from today should be discounted by a cost of capital derived from a 10-year zero-coupon government bond. We prefer zero-coupon government strips because long-term government bonds make interim interest payments,[6] causing their effective maturity to be shorter than their stated maturity.

In practice, few people discount each cash flow using a matched maturity. For simplicity, most choose a single yield to maturity from one government bond that best matches the entire cash flow stream being valued. For U.S.-based corporate valuation, the most common proxy is the 10-year government bond (longer-dated bonds such as the 30-year Treasury might match the cash flow stream better, but their illiquidity can cause stale prices and yield premiums). When valuing European companies, we prefer the 10-year German Eurobond. German bonds have higher liquidity and lower credit risk than bonds of other European countries. (In most cases, the differences across European bonds are insignificant.) Note that we use *local* government bond yields to estimate the risk-free rate. To handle issues

[5] In its most general form, the risk-free rate is defined as the return on a portfolio (or security) that has no covariance with the market (represented by a CAPM beta of 0). Hypothetically, one could construct a zero-beta portfolio, but given the cost and complexity of designing such a portfolio, we recommend focusing on long-term government *default-free* bonds. Although not necessarily *risk free*, long-term government bonds in the United States and Western Europe have extremely low betas.

[6] Introduced in 1985, Treasury STRIPS stands for "Separate Trading of Registered Interest and Principal of Securities." The STRIPS program enables investors to hold and trade the individual components of Treasury notes and bonds as separate securities.

Exhibit 10.3 Government Strip Yields, December 2003



Source: Bloomberg

like inflation consistently, we must ensure that cash flows and the cost of capital are denominated in the same currency.

In Exhibit 10.3, we plot the yield to maturity for various U.S. and German zero-coupon strips versus their years to maturity (a relation commonly known as the yield curve or term structure of interest rates). As of December 2003, the 10-year U.S. and German treasury strips were both trading at 4.3 percent.

If you are valuing a company or long-term project, do *not* use a short-term Treasury bill to determine the risk-free rate. When finance textbooks calculate the CAPM, they typically use a short-term Treasury rate because they are estimating expected returns for the next *month*. As can be seen in Exhibit 10.3, short-term Treasury bills (near the y-axis) traded well below 10-year bonds (0.9 percent versus 4.3 percent) in December 2003. Investors typically demand higher interest rates from long-term bonds when they believe short-term interest rates will rise over time. Using the yield from a short-term bond as the risk-free rate in a valuation fails to recognize that a bondholder must reinvest at higher rates when the short-term bond matures. Thus, the short-term bond rate misestimates the opportunity cost of investment for longer-term projects.

Estimating the market risk premium Sizing the market risk premium—the difference between the market's expected return and the risk-free rate—is arguably the most debated issue in finance. The ability of stocks to outperform bonds over the long run has implications for corporate valuation, portfolio composition, and retirement savings. But similar to a stock's expected return, the expected return on the market is unobservable. And

since no single model for estimating the market risk premium has gained universal acceptance, we present the results of various models.

Methods to estimate the market risk premium fall in three general categories:

1. Estimating the future risk premium by measuring and extrapolating historical excess returns.
2. Using regression analysis to link current market variables, such as the aggregate dividend-to-price ratio, to project the expected market risk premium.
3. Using DCF valuation, along with estimates of return on investment and growth, to reverse engineer the market's cost of capital.

None of today's models precisely estimate the market risk premium. Still, based on evidence from each of these models, we believe the market risk premium as of year-end 2003 was just under 5 percent.

Historical market risk premium Investors, being risk-averse, demand a premium for holding stocks rather than bonds. If the level of risk aversion hasn't changed over the last 75 years, then historical excess returns are a reasonable proxy for future premiums (assuming measurement issues, such as survivorship bias, aren't overly problematic). To best measure the risk premium using historical data, follow these guidelines:

- Calculate the premium relative to long-term government bonds.
- Use the longest period possible.
- Use an arithmetic average of longer-dated intervals (such as five years).
- Adjust the result for econometric issues, such as survivorship bias.

Use long-term government bonds When calculating the market risk premium, compare historical market returns with the return on 10-year government bonds. As discussed in the previous section, long-term government bonds better match the duration of a company's cash flows than do short-term bonds.

Use the longest period possible When using historical observations to predict future results, the issue is what length of history to examine. If the market risk premium is stable, a longer history will reduce estimation error. Alternatively, if the premium changes and estimation error is small, a shorter period is better. To determine the appropriate historical period, we consider any trends in the market risk premium compared with the noise associated with short-term estimates.

To test for the presence of a long-term trend, we regress the U.S. market risk premium versus time. Over the last 100 years, no statistically significant trend is observable.[7] Based on regression results, the average excess return has fallen by 3.3 basis points a year, but this result is well below its standard error (leading to a low t-statistic). In addition, premiums calculated over subperiods, even as long as 10 years, are extremely noisy. For instance, U.S. stocks outperformed bonds by 18 percent in the 1950s but offered no premium in the 1970s. Given the lack of any discernible trend and the significant volatility of shorter periods, you should use the longest time series possible.

Use arithmetic average of longer-dated intervals When reporting market risk premiums, most data providers report an annual number, such as 6.2 percent per year. But how do they convert a century of data into an annual number? And is an annualized number even important?

Annual returns can be calculated using either an arithmetic average or a geometric average. An arithmetic (simple) average sums each year's observed premium and divides by the number of observations:

$$\text{Arithmetic Average} = \frac{1}{T}\sum_{t=1}^{T}\frac{1+R_m(t)}{1+r_f(t)} - 1$$

A geometric average compounds each year's excess return and takes the root of the resulting product:

$$\text{Geometric Average} = \left(\prod_{t=1}^{T}\frac{1+R_m(t)}{1+r_f(t)}\right)^{1/T} - 1$$

The choice of averaging methodology will affect the results. For instance, between 1903 and 2002, U.S. stocks outperformed long-term government bonds by 6.2 percent per year when averaged arithmetically. Using a geometric average, the number drops to 4.4 percent. This difference is not random; arithmetic averages always exceed geometric averages when returns are volatile.

So which averaging method on historical data best estimates the *expected* future rate of return? To estimate the mean (expectation) for any random variable, well-accepted statistical principles dictate that the arithmetic average is the best unbiased estimator. Therefore, to determine a security's

[7] Some authors, such as Lewellen, argue that the market risk premium does change over time—and can be measured using financial ratios, such as the dividend yield. We address these models separately. J. Lewellen, "Predicting Returns with Financial Ratios," *Journal of Financial Economics*, 74(2) (2004): 209–235.

expected return for one period, the best unbiased predictor is the arithmetic average of many one-period returns. A one-period risk premium, however, can't value a company with many years of cash flow. Instead, long-dated cash flows must be discounted using a compounded rate of return. But when compounded, the arithmetic average will be *biased* upward (too high).

This bias is caused by estimation error and autocorrelation in returns. Let's examine the effect of estimation error first. To estimate the mean of a distribution, statistical theory instructs you to average the observations. In a finite sample, the sample average (R_A) will equal the true mean (μ) plus an error term (ε):

$$R_A = \mu + \varepsilon$$

Sometimes the error term is positive, so the sample average overestimates the true mean, and at other times, the error term is negative. But the average error term equals 0, so the sample average is an unbiased estimator of the true mean.

To value a cash flow *beyond* one period, we must determine the discount factor by raising R_A to a given power. For instance, to estimate a two-period discount rate, we calculate R_A squared. Squaring R_A leads to the following equation:

$$R_A = (\mu + \varepsilon)^2 = \mu^2 + \varepsilon^2 + 2\mu\varepsilon$$

Since the true mean, μ, is a constant and the expectation of ε is 0, the expectation of $2\mu\varepsilon$ equals 0. The expectation of ε^2, however, is not 0, but a positive number (the square of any nonzero number is greater than zero). Therefore, $R_A{}^2$ will be greater than μ^2 (the true mean squared), and a compounded sample average will be too high.

The compounded arithmetic average will also be biased upward when returns are negatively autocorrelated (meaning low returns follow high returns and high returns follow low returns). Although there is disagreement in the academic community, the general consensus is that the aggregate stock market exhibits negative autocorrelation.[8] In this case, the arithmetic mean is biased upward.

[8] Empirical evidence presented by James Poterba, Lawrence Summers, and others indicates that a significant long-term negative autocorrelation exists in stock returns. See J. Poterba and L. Summers, "Mean Reversion in Stock Prices," *Journal of Financial Economics* (October 1988): 27–60. However, subsequent studies by Matthew Richardson and others challenge the statistical significance of earlier studies. See M. Richardson, "Temporary Components of Stock Prices: A Skeptic's View," *Journal of Business and Economic Statistics*, 11 (1993): 199–207.

Exhibit 10.4 Expected Value When Returns Exhibit Negative Autocorrelation

Potential return	Unconditional probability
20%	50%
(10%)	50%

Scenario	Current value	Return in period one	Return in period two	Future value	Expected value when returns are independent		Expected value when returns are negatively autocorrelated	
1	100	1.2	1.2	144	25%	36.0	15%	21.6
2	100	1.2	0.9	108	25%	27.0	35%	37.8
3	100	0.9	1.2	108	25%	27.0	35%	37.8
4	100	0.9	0.9	81	25%	20.3	15%	12.2
					100%	110.3	100%	109.4

To better understand the effect of negative autocorrelation, consider a portfolio that can either grow by 20 percent or fall by 10 percent in a given period (see Exhibit 10.4). Since both returns are equally likely, the one period average return equals 5 percent. In addition, if returns are independently and identically distributed, after two periods there is:

1. A 25 percent probability that an initial investment of $100 will grow to $144
2. A 50 percent probability (two equally probable scenarios) that $100 will grow to $108
3. A 25 percent probability that $100 will shrink to $81

The expected value in two periods equals $110.3, the same as if $100 had grown consistently at the *arithmetic* average of 5 percent for two periods. But if the four scenarios are not equally likely, the expected value in two periods will not equal $110.3. For instance, if there is a 70 percent probability that low returns will be followed by high returns (or vice versa), the expected value in two periods is only $109.4. In this case, compounding the arithmetic mean will lead to an upward bias in expected return.

To correct for the bias caused by estimation error and negative autocorrelation in returns, we have two choices. First, we can calculate multiperiod holding returns directly from the data, rather than compound single-period averages. Using this method, a cash flow received in five years will be discounted by the average five-year market risk premium, not by the annual

Exhibit 10.5 Cumulative Returns for Various Intervals, 1903–2001

percent

		Cumulative returns			Annualized returns	
Arithmetic mean of	Number of observations	U.S. stocks	U.S. government bonds	U.S. excess return	U.S. excess returns	Blume estimator
1-year holding periods	100	11.3	5.3	6.2	6.2	6.2
2-year holding periods	50	24.1	10.9	12.6	6.1	6.1
4-year holding periods	25	49.9	23.1	23.0	5.3	6.0
5-year holding periods	20	68.2	29.5	32.3	5.8	5.9
10-year holding periods	10	165.6	72.1	70.1	5.5	5.6

Source: Ibbotson Associates, McKinsey analysis.

market risk premium compounded five times.[9] In Exhibit 10.5, we present arithmetic averages for holding periods of 1, 2, 4, 5, and 10 years. To avoid placing too little weight on either early or recent observations, we use nonoverlapping returns. The downside of this method is that 5- and 10-year holding periods have very few observations. As shown in the exhibit, the annualized excess return trends downward from 6.2 percent to 5.5 percent as the length of the holding period increases.

Alternatively, researchers have used simulation to show that an estimator proposed by Marshall Blume best adjusts for problems caused by estimation error and autocorrelation of returns:[10]

$$R = \frac{T-N}{T-1} R_A + \frac{N-1}{T-1} R_G$$

where T = Number of historical observations
N = Forecast period
R_A = Arithmetic average
R_G = Geometric average

In the last column of Exhibit 10.5, we report Blume's estimate for the market risk premium. Blume's method generates the same downward-trending estimate of the market risk premium (albeit more smoothly than the raw holding period averages). Based on both estimation techniques, it appears 5.5 percent is a reasonable approximation for *historical* excess returns.

[9] Jay Ritter writes, "There is no theoretical reason why one year is the appropriate holding period. People are used to thinking of interest rates as a rate per year, so reporting annualized numbers makes it easy for people to focus on the numbers. But I can think of no reason other than convenience for the use of annual returns." J. Ritter, "The Biggest Mistakes We Teach," *Journal of Financial Research*, 25 (2002): 159–168.

[10] D. C. Indro and W. Y. Lee, "Biases in Arithmetic and Geometric Averages Premia," *Financial Management*, 26(4) (Winter 1997); M. E. Blume, "Unbiased Estimators of Long Run Expected Rates of Return," *Journal of the American Statistical Association*, 69(347) (September 1974).

Survivorship bias Other statistical difficulties exist with historical risk premiums. According to one argument,[11] even properly measured historical premiums can't predict future returns, because the observable sample will include only countries with strong historical returns. Statisticians refer to this phenomenon as survivorship bias. The U.S. market outperformed all others during the twentieth century, averaging 4.3 percent in real terms (deflating by the wholesale price index) versus a median of 0.8 percent for other countries.[12] A concurring study[13] notes that the −100 percent returns from China, Russia, and Poland are too often ignored in discussions of stock market performance.

Since it is unlikely that the U.S. stock market will replicate its performance over the next century, we adjust downward the historical arithmetic average market risk premium. Using data from Philippe Jorion and William Goetzmann, we find that between 1926 and 1996, the U.S. arithmetic annual return exceeded the median return on a set of 11 countries with continuous histories dating to the 1920s by 1.9 percent in real terms, or 1.4 percent in nominal terms. If we subtract a 1 percent to 2 percent survivorship bias from the long-term arithmetic average of 5.5 percent, the difference implies the future range of the U.S. market risk premium should be 3.5 to 4.5 percent.

Market risk premium regressions Although we find no long-term trend in the historical risk premium, many argue that the market risk premium is predictable using observable variables, such as the aggregate dividend-to-price ratio, the aggregate book-to-market ratio, or the aggregate ratio of earnings to price.

The use of current financial ratios to estimate the expected return on stocks is well documented and dates back to Charles Dow in the 1920s. The concept has been tested by many authors.[14] To predict the market risk premium using financial ratios, excess market returns are regressed against a financial ratio, such as the market's aggregate dividend-to-price ratio:

$$R_m - r_f = \alpha + \beta \ ln\left(\frac{\text{Dividend}}{\text{Price}}\right) + \varepsilon$$

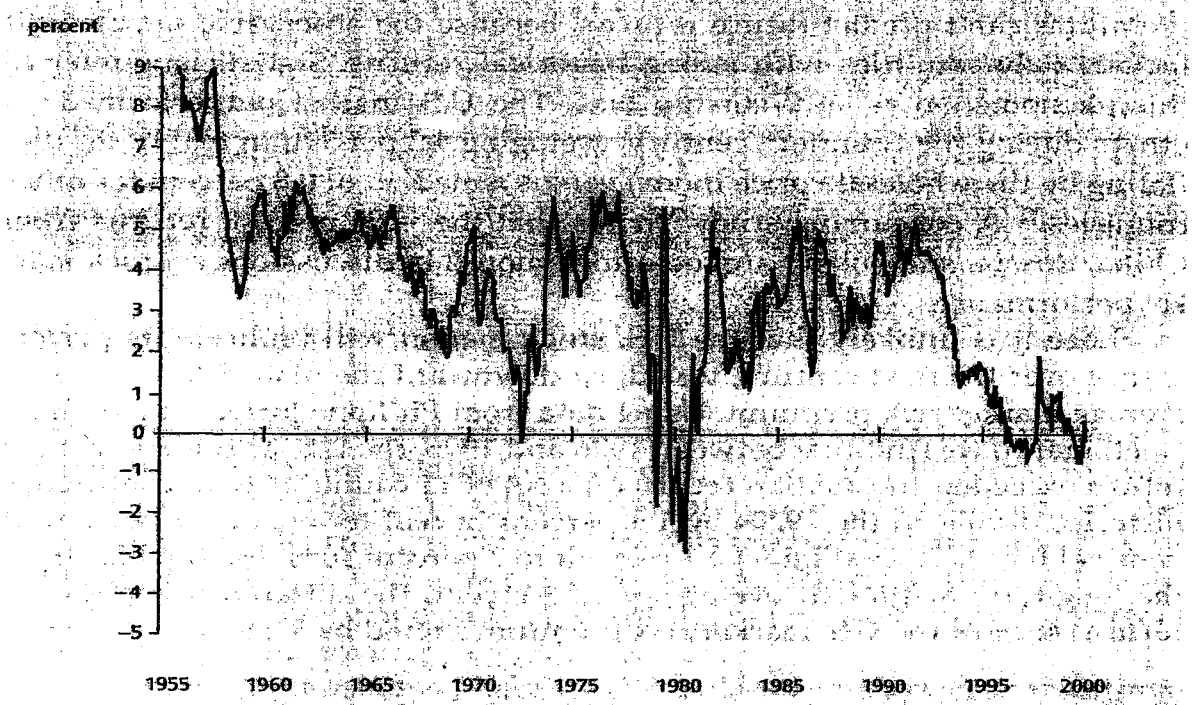
[11] S. Brown, W. Goetzmann, and S. Ross, "Survivorship Bias," *Journal of Finance* (July 1995): 853–873.

[12] P. Jorion and W. Goetzmann, "Global Stock Markets in the Twentieth Century," *Journal of Finance*, 54(3) (June 1999): 953–974.

[13] Elroy Dimson, Paul Marsh, and Michael Staunton, *Triumph of the Optimists* (Princeton: Princeton University Press, 2002).

[14] E. Fama and K. French, "Dividend Yields and Expected Stock Returns," *Journal of Financial Economics*, 22(1) (1988): 3–25; R. F. Stambaugh, "Predictive Regressions," *Journal of Financial Economics*, 54(3) (1999): 375–421; and J. Lewellen, "Predicting Returns with Financial Ratios," *Journal of Financial Economics*, 74(2) (2004): 209–235.

Exhibit 10.6 Expected Market Risk Premium Based on Dividend Yield



Source: Lewellen (2004); Goyal and Welch (2003); McKinsey analysis.

Using advanced regression techniques unavailable to earlier authors, Jonathan Lewellen found that dividend yields *do* predict future market returns. But as shown in Exhibit 10.6, the model has a major drawback: the risk premium prediction can be negative (as it was in the late 1990s). Other authors question the explanatory power of financial ratios, arguing that a financial analyst relying solely on data available at the time would have done better using unconditional historical averages (as we did in the last section) in place of more sophisticated regression techniques.[15]

Forward-looking models A stock's price equals the present value of its dividends. Assuming dividends are expected to grow at a constant rate, we can rearrange the growing perpetuity to solve for the market's expected return:

$$P = \frac{\text{DIV}}{k_e - g} \quad \text{converts to} \quad k_e = \frac{\text{DIV}}{P} + g$$

In the previous section, we reviewed regression models that compare market returns (k_e) to the dividend-price ratio (DIV/P). Using a simple re-

[15] A. Goyal and I. Welch, "Predicting the Equity Premium with Dividend Ratios," *Management Science*, 4, 9(5) (2003): 639–654.

gression, however, ignores valuable information and oversimplifies a few market realities. First, the dividend-price yield itself depends on the expected growth in dividends (g), which simple regressions ignore (the regression's intercept is determined by the data). Second, dividends are only one form of corporate payout. Companies can use free cash flow to repurchase shares or hold excess cash for significant periods of time; consider Microsoft, which accumulated more than $50 billion in liquid securities before paying its first dividend.

Using the principles of discounted cash flow, along with estimates of growth, various authors have attempted to reverse engineer the market risk premium. Two studies used analyst forecasts to estimate growth,[16] but many argue that analyst forecasts focus on the short term and are severely upward biased. Fama and French use long-term dividend growth rates as a proxy for future growth, but they focus on dividend yields, not on available cash flow.[17] Alternatively, our own research has focused on *all* cash flow available to equity holders, as measured by a modified version of the key value driver formula (detailed in Chapter 3):[18]

$$k_e = \frac{\text{Earnings}\left(1 - \frac{g}{\text{ROE}}\right)}{P} + g \text{ such that } \text{CF}_e = \text{Earnings}\left(1 - \frac{g}{\text{ROE}}\right)$$

Based on this formula, we used the long-run return on equity (13 percent) and the long-run growth in real GDP (3.5 percent) to convert a given year's S&P 500 median earnings-to-price ratio into the cost of equity.[19]

Exhibit 10.7 on page 306 plots the nominal and real expected market returns between 1962 and 2002. The results are striking. After stripping out inflation, the expected market return (*not* excess return) is remarkably constant, averaging 7.0 percent. For the United Kingdom, the real market return is slightly more volatile, averaging 6.0 percent. Based on these results, we estimate the current market risk premium by subtracting the current real long-term risk-free rate from the real equity return of 7.0 percent (for U.S. markets). At year-end 2003, the yield on a U.S. Treasury inflation-protected security (TIPS) equaled 2.1 percent. Subtracting 2.1

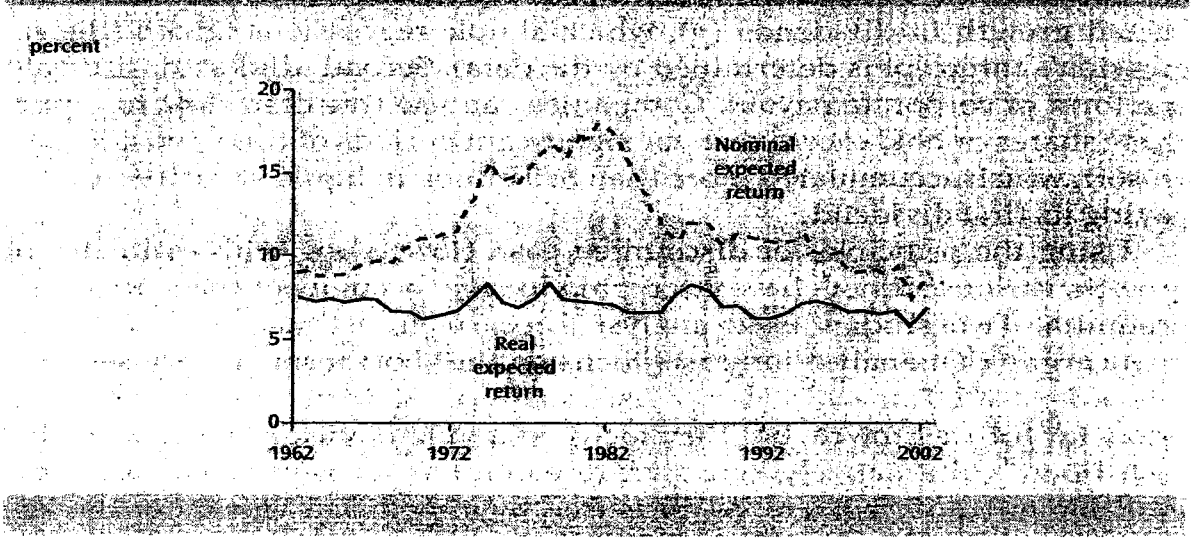
[16] J. Claus and J. Thomas, "Equity Premia as Low as Three Percent? Evidence from Analysts' Earnings Forecasts for Domestic and International Stocks," *Journal of Finance*, 56(5) (October 2001): 1629–1666; and W. R. Gebhardt, C. M. C. Lee, and B. Swaminathan, "Toward an Implied Cost of Capital," *Journal of Accounting Research*, 39(1) (2001): 135–176.

[17] Eugene F. Fama and Kenneth R. French, "The Equity Premium," Center for Research in Security Prices Working Paper No. 522 (April 2001).

[18] Marc H. Goedhart, Timothy M. Koller, and Zane D. Williams, "The Real Cost of Equity," *McKinsey on Finance* (Autumn 2002): 11–15.

[19] Using a two-stage model (i.e., short-term ROE and growth rate projections, followed by long-term estimates) did not change the results in a meaningful way.

Exhibit 10.7 Real and Nominal Expected Market Returns



percent from 7.0 percent gives an estimate of the risk premium at just under 5 percent.

Although many in the finance profession disagree about how to measure the market risk premium, we believe 4.5 to 5.5 percent is an appropriate range. Historical estimates found in most textbooks (and locked in the mind of many), which often report numbers near 8 percent, are too high for valuation purposes because they compare the market risk premium versus short-term bonds, use only 75 years of data, and are biased by the historical strength of the U.S. market.

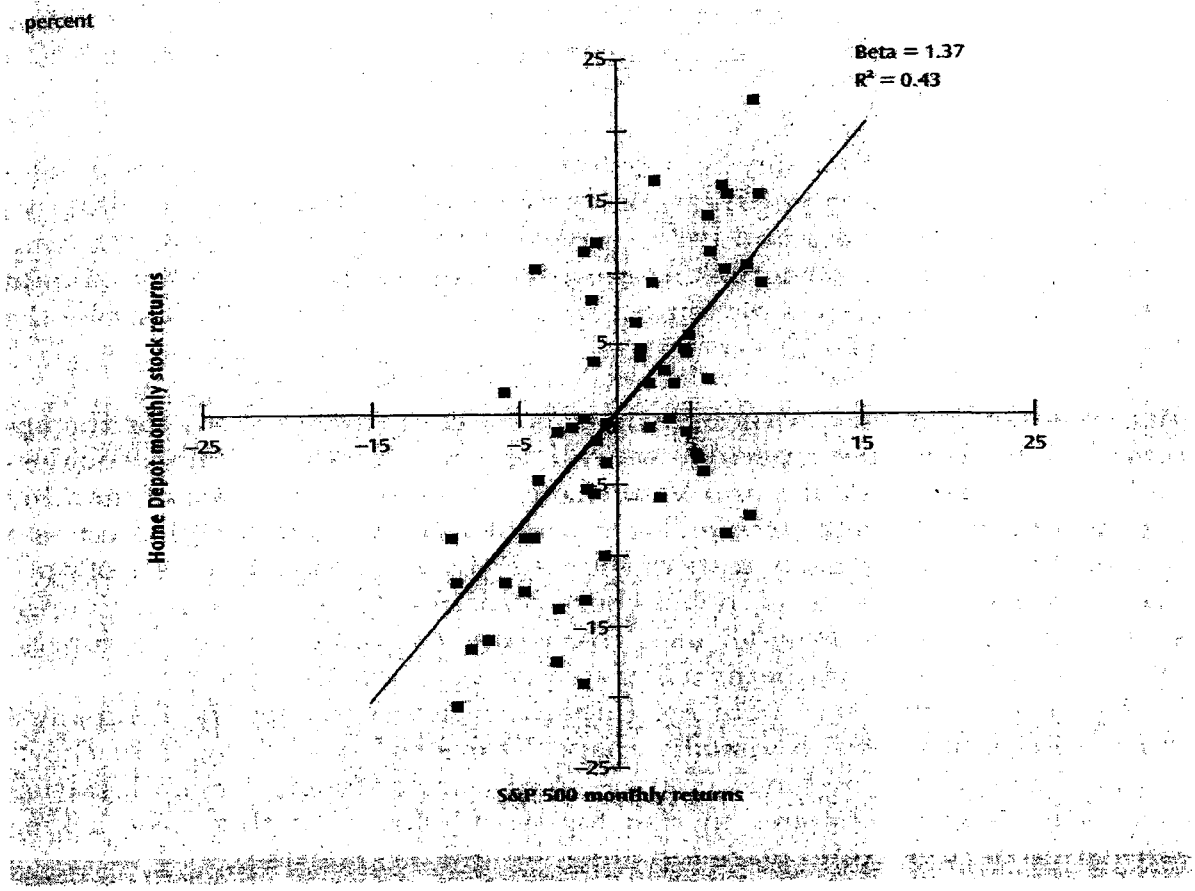
Estimating beta According to the CAPM, a stock's expected return is driven by beta, which measures how much the stock and market move together. Since beta cannot be observed directly, we must *estimate* its value. To do this, we first measure a raw beta using regression and then improve the estimate by using industry comparables and smoothing techniques. The most common regression used to estimate a company's raw beta is the market model:

$$R_i = \alpha + \beta R_m + \varepsilon$$

In the market model, the stock's return (not price) is regressed against the market's return.

In Exhibit 10.8, we plot 60 months of Home Depot stock returns versus S&P 500 returns between 1999 and 2003. The solid line represents the "best

Exhibit 10.8 Home Depot: Stock Returns versus S&P 500 Returns, 1999–2003



fit" relation between Home Depot's stock returns and the stock market. The slope of this line is commonly denoted as beta. For Home Depot, the company's raw beta (slope) is 1.37. Since typical betas range between 0 and 2, with the value-weighted average beta equaling 1, this raw result implies Home Depot is riskier than the typical stock.

But why did we choose to measure Home Depot's returns in months? Why did we use five years of data? And how precise is this measurement? The CAPM is a one-period model and provides little guidance on implementation. Yet, based on certain market characteristics and a variety of empirical tests, we reach several conclusions:

- Raw regressions should use at least 60 data points (e.g., five years of monthly returns). Rolling betas should be graphed to examine any systematic changes in a stock's risk.

- Raw regressions should be based on monthly returns. Using shorter return periods, such as daily and weekly returns, leads to systematic biases.
- Company stock returns should be regressed against a value-weighted, well-diversified portfolio, such as the S&P 500 or MSCI World Index.

Next, recalling that raw regressions provide only estimates of a company's true beta, we improve estimates of a company's beta by deriving an unlevered industry beta and then relevering the industry beta to the company's target capital structure. If no direct competitors exist, you should adjust raw company betas by using a smoothing technique. We describe the basis for our conclusions next.

Measurement period Although there is no common standard for the appropriate measurement period, we follow the practice of data providers such as Standard & Poor's and Value Line, which use five years of monthly data to determine beta. Using five years of monthly data originated as a rule of thumb during early tests of the CAPM.[20] In subsequent tests of optimal measurement periods, researchers confirmed five years as appropriate.[21] Not every data provider uses five years. The data service Bloomberg, for instance, creates raw betas using two years of weekly data.

Because estimates of beta are imprecise, however, plot the company's rolling 60-month beta to visually inspect for structural changes or short-term deviations. For instance, changes in corporate strategy or capital structure often lead to changes in risk for stockholders. In this case, a long estimation period would place too much weight on stale data.

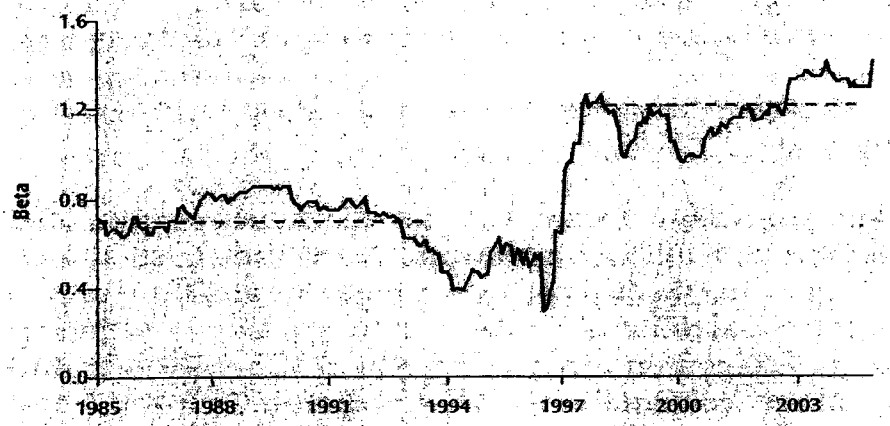
In Exhibit 10.9, we graph IBM's raw beta between 1985 and 2004. As the exhibit shows, IBM's beta hovered near 0.7 in the 1980s but rose dramatically in the mid-1990s and now measures near 1.3. This rise in beta occurred during a period of great change for IBM, as the company moved from hardware (such as mainframes) to services (such as consulting). Subsequently, using a long estimation period (for instance, 10 years) would underestimate the risk of the company's new business model.

Frequency of measurement In 1980, Nobel laureate Robert Merton argued that estimates of covariance, and subsequently beta, improve as returns are

[20] F. Black, M. Jensen, and M. Scholes, "The Capital Asset Pricing Model: Some Empirical Tests," in *Studies in Theory of Capital Markets*, ed. M. Jensen (New York: Praeger, 1972).

[21] Alexander and Chervany tested the accuracy of estimation periods from one to nine years. They found four-year and six-year estimation periods performed best but were statistically indistinguishable. G. Alexander and N. Chervany, "On the Estimation and Stability of Beta," *Journal of Financial and Quantitative Analysis*, 15 (1980): 123–137.

Exhibit 10.9 IBM: Market Beta, 1985–2004



measured more frequently.[22] Implementing Merton's theory, however, has proven elusive. Empirical problems make high-frequency beta estimation unreliable. Therefore, we recommend using monthly data.

Using daily or even weekly returns is especially problematic when the stock is rarely traded. An illiquid stock will have many reported returns equal to zero, not because the stock's value is constant but because it hasn't traded (only the last trade is recorded). Consequently, estimates of beta on illiquid stocks are biased downward. Using longer-dated returns, such as monthly returns, lessens this effect. One proposal for stocks that trade infrequently even on a monthly basis is to sum lagged betas.[23] In lagged-beta models, a stock's return is simultaneously regressed on concurrent market returns and market returns from the prior period. The two betas from the regression are then summed.

A second problem with using high-frequency data is the bid/ask bounce. Periodic stock prices are recorded at the last trade, and the recorded price depends on whether the last trade was a purchase (using the ask price) or a sale (using the bid price). A stock whose intrinsic value remains unchanged will therefore "bounce" between the bid and ask price, causing distortions in beta estimation. Using longer-period returns dampens this distortion.

[22] R. Merton, "On Estimating the Expected Return on the Market," *Journal of Financial Economics*, 8 (1980): 323–361.

[23] M. Scholes and J. T. Williams, "Estimating Betas from Nonsynchronous Data," *Journal of Financial Economics*, 5 (1977): 309–327. See also E. Dimson, "Risk Measurement When Shares Are Subject to Infrequent Trading," *Journal of Financial Economics*, 7 (1979): 197–226.

Over the past few years, promising research on high-frequency beta estimation has emerged, spawned by improvements in computing power and data collection. One study used five-minute returns to measure beta, and the estimation method produced more accurate measurements than the standard 60-month rolling window.[24] Since that research was limited to highly liquid stocks, however, we continue to focus on longer-dated intervals in practice.

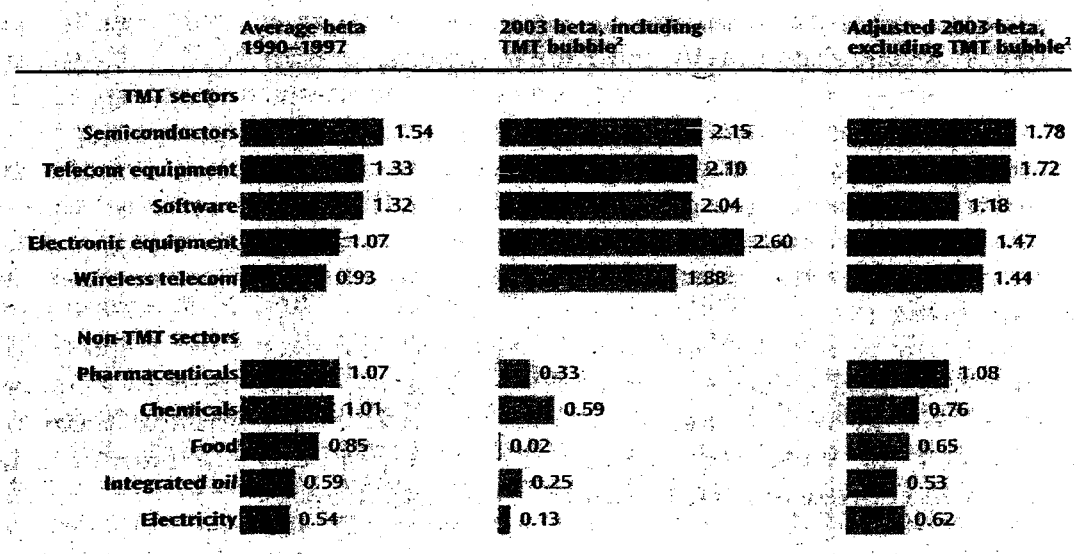
The market portfolio In the CAPM, the market portfolio equals the value-weighted portfolio of all assets, both traded (such as stocks and bonds) and untraded (such as private companies and human capital). Since the true market portfolio is unobservable, a proxy is necessary. For U.S. stocks, the most common proxy is the S&P 500, a value-weighted index of large U.S. companies. Outside the United States, financial analysts rely on either a regional index like the MSCI Europe Index or the MSCI World Index, a value-weighted index comprising large stocks from 23 developed countries (including the United States).

Most well-diversified indexes, such as the S&P 500 and MSCI World Index, are highly correlated (the two indexes had an 85.4 percent correlation between 1999 and 2003). Thus, the choice of index will have little effect on beta. For instance, Home Depot's beta with respect to the S&P 500 is 1.37, whereas the company's beta with respect to the MSCI World Index is nearly identical at 1.35. Do *not*, however, use a local market index. Most countries are heavily weighted in only a few industries and, in some cases, a few companies. Consequently, when measuring beta versus a local index, you are not measuring market-wide systematic risk, but rather a company's sensitivity to a particular industry.

The internet bubble distorted the market portfolio In the late 1990s, equity markets rose dramatically, but this increase was confined primarily to extremely large capitalization stocks and stocks in the telecommunications, media, and technology sectors (commonly known as TMT). Historically, TMT stocks contribute approximately 20 percent of the market value of the S&P 500. Between 1999 and 2001, this percentage rose to nearly 50 percent. And as the market portfolio changed, so too did industry betas. As shown by the historical betas for 10 industries in Exhibit 10.10, betas related to TMT rose dramatically during the tech boom, while betas outside the TMT sector fell. For instance, between 1990 and 1997, the food industry had an average beta of 0.85. Immediately following the tech boom, the food industry's beta dropped to zero.

[24] T. Bollerslev and B. Y. B. Zhang, "Measuring and Modeling Systematic Risk in Factor Pricing Models Using High-Frequency Data," *Journal of Empirical Finance*, 10 (2003): 533–558.

Exhibit 10.10 Measuring Beta with and without TMT Bubble Years[1]



[1]TMT stands for telecommunications, media, and technology.
[2]Period from January 1998 to December 2001.
Source: Thomson Financial Datastream; McKinsey analysis.

But will these new, widely dispersed, betas continue? Probably not. Since 2001, the market portfolio has returned to its traditional composition. Therefore, betas are likely to normalize as well. To this end, we argue that estimates of future beta should exclude observations from 1998 to 2001.[25] Remember, the end goal is not to measure beta historically, but rather to use the historical estimate as a predictor of future value. In this case, recent history isn't very useful and should not be overweighted.

Improving estimates of beta: Industry betas Estimating beta is an imprecise process. Earlier, we used historical regression to estimate Home Depot's raw beta at 1.37. But the regression's *R*-squared was only 43 percent, and the standard error of the beta estimate was 0.20. Using two standard errors as a guide, we feel confident Home Depot's true beta lies between 0.97 and 1.77—hardly a tight range.

To improve the precision of beta estimation, use industry, rather than company-specific, betas.[26] Companies in the same industry face similar

[25] André Annema and Marc Goedhart, "Better Betas," *McKinsey on Finance* (Winter 2003): 10–13.
[26] If unlevered industry betas are drawn from the same distribution, the standard error of the industry average equals the volatility of the beta distribution divided by the square root of the number of observations. Thus, the standard error of an industry beta falls as the number of beta observations rises.

operating risks, so they should have similar operating betas. As long as estimation errors across companies are uncorrelated, overestimates and underestimates of individual betas will tend to cancel, and an industry median (or average) beta will produce a superior estimate.[27]

Simply using the median of an industry's raw betas, however, overlooks an important factor: leverage. A company's beta is a function of not only its operating risk, but also the financial risk it takes. Shareholders of a company with more debt face greater risks, and this increase is reflected in beta. Therefore, to compare companies with similar operating risks, we must first strip out the effect of leverage. Only then can we compare beta across an industry.

To undo the effect of leverage (and its tax shield), we rely on the theories of Franco Modigliani and Merton Miller (M&M), introduced in Chapter 5. According to M&M, the weighted average risk of a company's financial claims equals the weighted average risk of a company's economic assets. Using beta to represent risk, this relation is as follows:

$$\underbrace{\frac{V_u}{V_u + V_{txa}}\beta_u}_{\text{Operating Assets}} + \underbrace{\frac{V_{txa}}{V_u + V_{txa}}\beta_{txa}}_{\text{Tax Asset}} = \underbrace{\frac{D}{D+E}\beta_d}_{\text{Debt}} + \underbrace{\frac{E}{D+E}\beta_e}_{\text{Equity}}$$

where V_u = Value of the company's operating assets
V_{txa} = Value of the company's interest tax shields
D = Market value of the company's debt
E = Market value of the company's equity

In Appendix D, we rearrange the equation to solve for the beta of equity (β_e). This leads to:

$$\beta_e = \beta_u + \frac{D}{E}(\beta_u - \beta_d) - \frac{V_{txa}}{E}(\beta_u - \beta_{txa}) \quad .$$

To simplify the formula further, most practitioners impose two additional restrictions.[28] First, because debt claims have first priority, the beta of

[27] Statistically speaking, the sample average will have the lowest mean squared error. However, because sample averages are heavily influenced by outliers, we recommend examining both the mean and median beta.

[28] In Chapter 5, we detailed alternative restrictions that can be imposed to simplify the general equation regarding risk. Rather than repeat the analysis, we focus on the least restrictive assumption for mature companies: that debt remains proportional to value. For a full discussion of which restrictions to impose and how they affect the cost of capital, please see the section on adjusted present value in Chapter 5.

debt tends to be low. Thus, many assume (for simplicity) the beta of debt is 0. Second, if the company maintains a constant capital structure, the value of tax shields will fluctuate with the value of operating assets and beta of the tax shields (β_{txa}) will equal the beta of the unlevered company (β_u). Setting β_{txa} equal to β_u eliminates the final term:

$$\beta_e = \beta_u \left(1 + \frac{D}{E}\right) \tag{1}$$

Thus, a company's equity beta equals the company's operating beta (commonly known as the unlevered beta) times a leverage factor. As leverage rises, so will the company's equity beta. Using this relation, we can convert equity betas into unlevered betas. Since unlevered betas focus solely on operating risk, they can be averaged across an industry (assuming industry competitors have similar operating characteristics).

To estimate an industry-adjusted company beta, use the following four-step process. First, regress each company's stock returns against the S&P 500 to determine raw beta. In Exhibit 10.11 on page 314, we report regression betas for Home Depot (1.37) and Lowe's (1.15). Next, to unlever each beta, calculate each company's market-debt-to-equity ratio. To calculate net debt ($6.310 billion for Home Depot), add the book value of reported debt ($1.365 billion) to the estimated value of operating leases ($6.554 billion) and then subtract excess cash ($1.609 billion).[29] To determine equity value ($80.101 billion), we multiply the company's stock price ($35.49) by the number of shares outstanding (2.257 billion). With debt and equity in hand, compute debt to equity (.079). Applying equation 1 leads to an unlevered beta of 1.27 for Home Depot and 1.02 for Lowe's. In step three, determine the industry unlevered beta by calculating the median (in this case, the median and average betas are the same).[30] In the final step, relever the industry unlevered beta is to each company's *target* debt-to-equity ratio (using current market values as proxies).

Unlevered cost of equity As demonstrated, we can unlever an equity beta in order to improve beta estimation for use in the CAPM and WACC. We also can use unlevered industry betas to estimate a company's unlevered cost of equity. To estimate the unlevered cost of equity for use in an adjusted present value (APV) valuation, simply apply the CAPM to the industry unlevered beta.

[29] The process for valuing operating leases and excess cash is detailed in Chapter 7.
[30] In most valuations, more than two company betas are available. For Home Depot, Lowe's is the only publicly traded competitor. As a general rule, use as many direct comparables as possible.

Exhibit 10.11 Determining the Industry Beta

$ million

Capital structure	Home Depot	Lowe's
Debt	1,365	3,755
Operating leases	6,554	2,762
Excess cash	(1,609)	(948)
Total net debt	6,310	5,569
Shares outstanding (millions)	2,257	787
Share price ($)	35.49	55.39
Market value of equity	80,101	43,592
Debt/equity	0.079	0.128

Beta calculations	Home Depot	Lowe's
Raw beta (step 1)	1.37	1.15
Unlevered beta (step 2)	1.27	1.02
Industry average unlevered beta (step 3)	1.14	1.14
Relevered beta (step 4)	1.23	1.30

Improving estimates of beta: Smoothing For well-defined industries, an industry beta will suffice. But if few direct comparables exist, an alternative is beta smoothing. Consider the simple smoothing process used by Bloomberg:

$$\text{Adjusted Beta} = (.33) + (.67)\ \text{Raw Beta}$$

Using this formula "smooths" raw estimates toward 1. For instance, a raw beta of 0.5 leads to an adjusted beta of 0.67, while a raw beta of 1.5 leads to an adjusted beta of 1.34. Bloomberg's smoothing mechanism dates back to Blume's observation that betas revert to the mean.[31] Today, more advanced smoothing techniques exist.[32] Although the proof is beyond the scope of this book, the following adjustment will reduce beta estimation error:

$$\beta_{adj} = \frac{\sigma_\varepsilon^2}{\sigma_\varepsilon^2 + \sigma_b^2}(1) + \left(1 - \frac{\sigma_\varepsilon^2}{\sigma_\varepsilon^2 + \sigma_b^2}\right)\beta_{raw}$$

[31] M. Blume, "Betas and Their Regression Tendencies," *Journal of Finance*, 30 (1975): 1–10.
[32] For instance, see P. Jorion, "Bayes-Stein Estimation for Portfolio Analysis," *Journal of Financial and Quantitative Analysis*, 21 (1986): 279–292.

where σ_ε = The standard error of the regression beta
σ_b = The cross-sectional standard deviation of all betas

The raw regression beta receives the most weight when the standard error of beta from the regression (σ_ε) is smallest. In fact, when beta is measured perfectly ($\sigma_\varepsilon = 0$), the raw beta receives all the weight. Conversely, if the regression provides no meaningful results (σ_ε is very large), you should set beta equal to 1.

For Home Depot, the standard error of the beta estimate equals 0.20, and in 2004 the cross-sectional standard deviation of beta (across all S&P 500 stocks) equaled 0.590. Therefore, the adjusted beta equals $0.103 + (1 - 0.103) \times 1.37$, or 1.33.

Alternatives to the CAPM: Fama-French Three-Factor Model

In 1992, Eugene Fama and Kenneth French published a paper in the *Journal of Finance* that received a great deal of attention because they concluded, "In short, our tests do not support the most basic prediction of the SLB [Sharpe-Lintner-Black] Capital Asset Pricing Model that average stock returns are positively related to market betas."[33] At the time, theirs was the most recent in a series of empirical studies that questioned the usefulness of estimated betas in explaining the risk premium on equities. Among the factors negatively or positively associated with equity returns were the size of the company, a seasonal (January) effect, the degree of financial leverage, and the firm's book-to-market ratio.[34] Based on prior research and their own comprehensive regressions, Fama and French concluded that equity returns are inversely related to the size of a company (as measured by market capitalization) and positively related to the ratio of a company's book value to its market value of equity.

Given the strength of Fama and French's empirical results, the academic community has begun measuring risk with a model commonly known as the Fama-French three-factor model. With this model, a stock's excess returns are regressed on excess market returns (similar to the CAPM), the excess

[33] E. Fama and K. French, "The Cross-Section of Expected Stock Returns," *Journal of Finance* (June 1992): 427–465.

[34] R. Blanz, "The Relationship between Return and the Market Value of Common Stocks," *Journal of Financial Economics* (March 1981): 3–18; M. Reinganum, "Misspecification of Capital Asset Pricing: Empirical Anomalies Based on Earnings Yields and Market Values," *Journal of Financial Economics* (March 1981): 19–46; S. Basu, "The Relationship between Earnings Yield, Market Value and Return for NYSE Common Stocks: Further Evidence," *Journal of Financial Economics* (June 1983): 129–156; L. Bhandari, "Debt/Equity Ratio and Expected Common Stock Returns: Empirical Evidence," *Journal of Finance* (April 1988): 507–528; D. Stattman, "Book Values and Stock Returns," *The Chicago MBA: A Journal of Selected Papers* (1980): 25–45; and B. Rosenberg, K. Reid, and R. Lanstein, "Persuasive Evidence of Market Inefficiency," *Journal of Portfolio Management* (1985): 9–17.

Exhibit 10.12 Home Depot's Fama-French Cost of Equity

Factor	Average monthly premium (percent)	Average annual premium (percent)	Regression beta	Contribution to expected return (percent)
Market risk premium		4.5	1.35	6.1
SMB premium	0.25	3.0	(0.04)	(0.1)
HML premium	0.36	4.4	(0.10)	(0.5)
Premium over risk free rate				5.5
			Risk free rate	4.3
			Cost of equity	9.8

returns of small stocks over big stocks (SMB), and the excess returns of high book-to-market stocks over low book-to-market stocks (HML).[35] Because the risk premium is determined by a regression on the SMB and HML stock portfolios, a company does not receive a premium for being small. Instead, the company receives a risk premium if its stock returns are correlated with those of small stocks or high book-to-market companies. The SMB and HML portfolios are meant to replicate unobservable risk factors, factors that caused small companies with high book-to-market values to outperform their CAPM expected returns.

To run a Fama-French regression, we need monthly returns for three portfolios: the market portfolio, the SMB portfolio, and the HML portfolio. Given the model's popularity, Fama-French portfolio returns are now available from professional data providers.

We use the Fama-French three-factor model to estimate Home Depot's cost of equity in Exhibit 10.12. To determine the company's three betas, regress Home Depot stock returns against the excess market portfolio, SMB, and HML. The regression in Exhibit 10.12 used monthly returns and was specified as follows:

$$R_i - r_f = \alpha + \beta_1 (R_m - r_f) + \beta_2 (R_S - R_B) + \beta_3 (R_H - R_L) + \varepsilon$$

As the exhibit indicates, Home Depot's traditional beta remains unchanged, but its cost of equity is lower in the Fama-French model because Home Depot is correlated with other large companies (small companies outperform large companies) and other companies with a low book-to-market ratio (high book-to-market companies outperform low book-to-

[35] For a complete description of the factor returns, see E. Fama and K. French, "Common Risk Factors in the Returns on Stocks and Bonds," *Journal of Financial Economics*, 33 (1993): 3–56.

market companies). Based on the historical annualized premiums for SMB (3.0 percent) and HML (4.4 percent), Home Depot's cost of capital equals 9.8 percent, versus 10.4 percent according to the standard CAPM. (These values are not comparable to the cost of equity presented in Exhibit 10.1, which used industry betas.)

The Fama-French model suffers from the same implementation issues as the CAPM. For instance, how much data should you use to determine the each factor's risk premium? Since 1926, small companies have outperformed large companies, but since 1982, they have not. Should returns be regressed using monthly data? Should regressions use five years of data? Given the model's recent development, many of these questions are still under investigation.

Alternatives to the CAPM: The Arbitrage Pricing Theory

Another alternative to the CAPM, the arbitrage pricing theory (APT), resembles a generalized version of the Fama-French three-factor model. In the APT, a security's actual returns are *fully* specified by k factors and random noise:

$$\tilde{R}_i = \alpha + \beta_1 \tilde{F}_1 + \beta_2 \tilde{F}_2 + \cdots + \beta_k \tilde{F}_k + \varepsilon$$

By creating well-diversified factor portfolios, it can be shown that a security's expected return must equal the risk-free rate plus the cumulative sum of its exposure to each factor times the factor's risk premium (λ):

$$E[R_i] = r_f + \beta_1 \lambda_1 + \beta_2 \lambda + \cdots + \beta_k \lambda_k$$

Otherwise, arbitrage is possible (positive return with zero risk).

On paper, the theory is extremely powerful. Any deviations from the model result in unlimited returns with no risk. In practice, implementation of the model has been elusive, as there is little agreement about how many factors there are, what the factors represent, or how to measure the factors. For this reason, use of the APT resides primarily in the classroom.

In Defense of Beta

Fama and French significantly damaged the credibility of the CAPM and beta. Today, most academics rely on three-factor models to measure historical risk and return. Even so, the three-factor model has its critics. To start, the CAPM is based on solid theory about risk and return (albeit with strong assumptions), whereas the Fama-French model is based purely on empirical evidence. Although the latter model has been loosely tied to risk factors

such as illiquidity (size premium) and default risk (book-to-market premium), no theory has gained universal acceptance.

In addition, S. P. Kothari, Jay Shanken, and Richard Sloan argue that beta may work better than portrayed in Fama and French. They point out that Fama and French's statistical tests were of low enough power that the tests could not reject a nontrivial (beta-related) risk premium of 6 percent over the post-1940 period.[36] Second, when they used annual returns, rather than monthly returns, to estimate beta (to avoid seasonality in returns), they found a significant linear relationship between beta and returns. Finally, they argue that the economic magnitude of size is quite small, and book-to-market premiums could be a result of survivorship bias.

Other research argues that the Fama-French three-factor model historically outperforms the CAPM because either beta or the market portfolio has been improperly measured. In a recent study, a one-factor model based on time-varying conditional betas eliminated the book-to-market effect.[37] Another article argues that regressions based on equity-only portfolios, such as the S&P 500, leads to the incorrect measurement of beta.[38] This mismeasurement is correlated with leverage, which in turn is correlated with size and book-to-market. When the researchers controlled for leverage, excess returns associated with HMB and SML disappeared.

The bottom line? It takes a better theory to kill an existing theory, and we have yet to see the better theory. Therefore, we continue to use the CAPM while keeping a watchful eye on new research in the area.

ESTIMATING THE AFTER-TAX COST OF DEBT

To estimate the cost of debt, use the yield to maturity of the company's long-term, option-free bonds. Technically speaking, yield to maturity is only a proxy for expected return, because the yield is actually a *promised* rate of return on a company's debt (it assumes all coupon payments are made on time and the debt is paid in full). An enterprise valuation based indirectly on the yield to maturity is therefore theoretically inconsistent: expected free cash flows should not be discounted by a promised yield. For companies with highly rated debt, however, this inconsistency is

[36] S. Kothari, J. Shanken, and R. Sloan, "Another Look at the Cross-Section of Expected Returns," *Journal of Finance* (December 1995).

[37] A. Ang and J. Chen, "CAPM over the Long Run: 1926–2001," (working paper, Los Angeles: University of Southern California, 2004).

[38] M. Ferguson and R. Shockley, "Equilibrium 'Anomalies,'" *Journal of Finance, 58*(6) (2003): 2549–2580.

immaterial, especially when compared with the estimation error surrounding beta and the market risk premium. Thus, for estimating the cost of debt for a company with investment-grade debt (debt rated at BBB or better), yield to maturity is a suitable proxy.

When calculating yield to maturity, use *long-term* bonds. As discussed earlier, short-term bonds do not match the duration of the company's free cash flow. To solve for yield to maturity (ytm), reverse engineer the discount rate required to set the present value of the bond's promised cash flows equal to its price:

$$\text{Price} = \frac{\text{Coupon}}{(1+\text{ytm})} + \frac{\text{Coupon}}{(1+\text{ytm})^2} + \cdots + \frac{\text{Face} + \text{Coupon}}{(1+\text{ytm})^N}$$

Ideally, yield to maturity should be calculated on liquid, option-free, long-term debt. If the bond is rarely traded, the bond price will be stale. Using stale prices will lead to an outdated yield to maturity. Yield to maturity will also be distorted when corporate bonds have attached options, such as callability or convertibility, as their value will affect the bond's price but not its promised cash flows.

Bond Ratings and Yield to Maturity

For companies with only short-term bonds or bonds that rarely trade, determine yield to maturity by using an indirect method. First, determine the company's credit rating on unsecured long-term debt. Next, examine the average yield to maturity on a portfolio of long-term bonds with the same credit rating. Use this yield as a proxy for the company's implied yield on long-term debt.

Investing in corporate debt is not risk free. Each year, a number of companies default on their obligations. In 2002, corporate bond defaults reached $163.6 billion worldwide. Since the probability of default is critical to bond pricing, professional rating agencies, such as Standard & Poor's (S&P) and Moody's, will rate a company's debt. To determine a company's bond rating, a ratings agency will examine the company's most recent financial ratios, analyze the company's competitive environment, and interview senior management. Corporate bond ratings are freely available to the public and can be downloaded from rating agency Web sites. For example, consider Home Depot. On June 10, 2004, Moody's reaffirmed its credit rating for Home Depot at Aa3 for its long-term debt. During that same time period, S&P rated Home Depot slightly higher at AA. In this case, the two agencies' ratings were different. Split ratings occur, but relatively infrequently.

Exhibit 10.13 Yield Spread over U.S. Treasuries by Bond Rating, December 2003

Basis points

	Maturity in Years						
Rating	1	2	3	5	7	10	30
Aaa/AAA	34	28	35	21	22	28	50
Aa1/AA+	37	31	33	34	40	29	62
Aa2/AA	39	33	34	35	42	33	64
Aa3/AA-	40	34	36	37	43	37	65
A2/A	57	49	49	57	65	48	82
Baa2/BBB	79	91	96	108	111	102	134
Ba2/BB	228	245	260	257	250	236	263
B2/B	387	384	384	349	332	308	319

Source: Bloomberg.

Once you have a rating, convert the rating into a yield to maturity. Exhibit 10.13 presents U.S. corporate yield spreads over U.S. government bonds. All quotes are presented in basis points, where 100 basis points equals 1 percent. Since Home Depot is rated AA by S&P and Aa3 by Moody's, we estimate that the 10-year yield to maturity is between 34 and 37 basis points over the 10-year Treasury. Adding 34 basis points to the risk-free rate of 4.34 percent equals 4.68 percent.

Using the company's bond ratings to determine the yield to maturity is a good alternative to calculating the yield to maturity directly. Never, however, approximate the yield to maturity using a bond's coupon rate. Coupon rates are set by the company at time of issuance and only approximate the yield if the bond trades near its par value. When valuing a company, you must estimate expected returns relative to *today's* alternative investments. Thus, when you measure the cost of debt, estimate what a comparable investment would earn if bought or sold today.

Below-Investment-Grade Debt

In practice, few financial analysts distinguish between expected and promised returns. But for debt below investment grade, using the yield to maturity as a proxy for the cost of debt can cause significant error.

To better understand the difference between expected returns and yield to maturity, consider the following example. You have been asked to value a one-year zero-coupon bond whose face value is $100. The bond is risky; there is a 25 percent chance the bond will default and you will recover only half the final payment. Finally, the cost of debt (not yield to maturity), estimated using the CAPM, equals 6 percent. Based on this information,

Exhibit 10.14 Beta by Bond Class, 1990–2000

Asset class	Beta
Treasury bonds	0.19
Investment-grade corporate debt	0.27
High-yield corporate debt	0.37

Source: Lehman Brothers, Global Family Statistics, Fixed Income Research; Morgan Stanley Capital International; U.S. Treasury; Real Securities.

you estimate the bond's price by discounting expected cash flows by the cost of debt:

$$\text{Price} = \frac{E[\text{CF}]}{1+k_d} = \frac{(.75)(\$100)+(.25)(\$50)}{1.06} = \$82.55$$

Next, to determine the bond's yield to maturity, place promised cash flows, rather than expected cash flows, into the numerator. Then solve for the yield to maturity:

$$\text{Price} = \frac{\text{Promised}[\text{CF}]}{1+\text{ytm}} = \frac{\$100}{1+\text{ytm}} = \$82.55$$

The $82.55 price leads to a 21.1 percent yield to maturity, *much* higher than the cost of debt. So what drives the yield to maturity? Three factors: the cost of debt, the probability of default, and the recovery rate. When the probability of default is high and the recovery rate is low, the yield to maturity will deviate significantly from the cost of debt. Thus, for companies with high default risk and low ratings, the yield to maturity is a poor proxy for the cost of debt.

To estimate the cost of high-yield debt, we rely on the CAPM (a general pricing model, applicable to any security). Bond indexes are used to generate betas, since individual bonds rarely trade. Exhibit 10.14 presents the market beta for investment-grade and high-yield bonds. As reported in the exhibit, high-yield bonds have a beta 0.1 higher than investment-grade bonds. Assuming a 5 percent market risk premium, this translates to a premium of 0.5 percent over investment-grade bonds. Thus, to calculate the cost of debt for a company with debt rated BB or below, use the BBB yield to maturity and add 0.5 percent.

Incorporating the Interest Tax Shield

To calculate free cash flow (using techniques detailed in Chapter 7), we compute taxes as if the company were entirely financed by equity. By using all-equity taxes, we can make comparisons across companies and over time,

without regard to capital structure. Yet, since the tax shield has value, it must be accounted for. In an enterprise DCF using the WACC, the tax shield is valued as part of the cost of capital. To value the tax shield, reduce the cost of debt by the marginal tax rate:

$$\text{After-Tax Cost of Debt} = \text{Cost of Debt} \times (1 - T_m)$$

Chapter 7 detailed how to calculate the marginal tax rate for historical analysis. For use in the cost of capital, you should calculate the marginal tax rate in a consistent manner, with one potential modification to account for the timing of future tax payments. According to research by John Graham, the statutory marginal tax rate overstates the *future* marginal tax rate because of rules related to tax-loss carryforwards, tax-loss carrybacks, investment tax credits, and alternative minimum taxes.[39] For instance, when a company loses money, it will receive a cash credit only if it has been profitable in the past three years; otherwise, it must carry the loss forward until it is once again profitable.

Graham uses simulation to estimate the realizable marginal tax rate on a company-by-company basis. For investment-grade companies, use the statutory rate. For instance, because Home Depot is highly profitable, Graham's model estimates the company's future marginal statutory tax rate at the full 35 percent. The typical company, however, does not always fully use its tax shields. Graham estimates the marginal tax rate is on average 5 percentage points below the statutory rate.

USE TARGET WEIGHTS TO DETERMINE COST OF CAPITAL

With our estimates of the cost of equity and cost of debt, we can now blend the two expected returns into a single number. To do this, we use the target weights of debt and equity to enterprise value, on a market (not book) basis:

$$\text{WACC} = \frac{D}{V} k_d (1 - T_m) + \frac{E}{V} k_e$$

Using market values to weight expected returns in the cost of capital follows directly from the formula's derivation (see Appendix C for a derivation of free cash flow and WACC). But consider a more intuitive explanation: the WACC represents the expected return on an *alternative* investment with identical risk. Rather than reinvest in the company, management could return capital to investors, who could reinvest elsewhere. To return capital without changing the capital structure, management can repay debt and re-

[39] J. Graham, "Debt and the Marginal Tax Rate," *Journal of Financial Economics*, 41 (1996): 41–73; and J. Graham, "Proxies for the Corporate Marginal Tax Rate," *Journal of Financial Economics*, 42 (1996): 187–221.

purchase shares, but must do so at their *market* value. Conversely, book value represents a sunk cost, so it is no longer relevant.

The cost of capital should rely on target weights, rather than current weights, because at any point, a company's current capital structure may not reflect the level expected to prevail over the life of the business. The current capital structure may merely reflect a short-term swing in the company's stock price, a swing that has yet to be rebalanced by management. Thus, using today's capital structure may cause you to overestimate (or underestimate) the value of tax shields for companies whose leverage is expected to drop (or rise).

Many companies are already near their target capital structure. If yours is not, decide how quickly the company will achieve the target. In the simplest scenario, the company will rebalance immediately and maintain the new capital structure. In this case, using the target weights and a constant WACC (for all future years) will lead to a reasonable valuation. If you expect the rebalancing to happen over a significant period of time, then use a different cost of capital each year, reflecting the capital structure at the time. In practice, this procedure is complex; you must correctly model not only the weights, but also the changes in the cost of debt and equity (because of increased default risk and higher betas). For extreme changes in capital structure, modeling enterprise DCF using a constant WACC can lead to significant error. In this case, value the company with adjusted present value (APV).

To develop a target capital structure for a company, use a combination of three approaches:

1. Estimate the company's current market-value-based capital structure.
2. Review the capital structure of comparable companies.
3. Review management's implicit or explicit approach to financing the business and its implications for the target capital structure.

Estimating Current Capital Structure

To determine the company's current capital structure, measure the market value of all claims against enterprise value. For most companies, the claims will consist primarily of debt and equity (we address more complex securities in the last section). If a company's debt and equity are publicly traded, simply multiply the quantity of each security by its most recent price. Most difficulties arise when securities are not traded such that prices can be readily observed.

Debt If an observable market value is not readily available, you can value debt securities at book or use discounted cash flow. In most cases, book value reasonably approximates the current market value. This will not be

the case, however, if interest rates have changed dramatically since the time of issuance or the company is in financial distress. In these two situations, the current price will differ from book value because either expected cash flows have changed (increased probability of default lowers expected cash flow) or the discount rate has changed (interest rates drive discount rates) from their original levels.[40]

In these situations, value each bond separately by discounting promised cash flows at the appropriate yield to maturity. Promised cash flows will be disclosed in the notes of a company's annual report. Determine the appropriate yield to maturity by examining the yields from comparably rated debt with similar maturities.

Debt equivalent claims Next, value off-balance-sheet debt, such as operating leases and pension liabilities. As detailed in Chapter 7, operating leases can be valued using the following formula:

$$\text{Lease Value}_{t-1} = \frac{\text{Rental Expense}_t}{k_d + \dfrac{1}{\text{Asset Life}}}$$

Only include operating leases in debt if you plan to adjust free cash flow for operating leases as well. Consistency between free cash flow and the cost of capital is paramount. Any pension adjustments made to free cash flow must be properly represented in the debt portion of the cost of capital. Specifically, if you add back any tax shields during adjustments to NOPLAT, you must account for the tax shields in the present value of pension liabilities and the cost of debt.

Equity If common stock is publicly traded, multiply the market price by the number of shares *outstanding*. The market value of equity should be based on shares outstanding in the capital market. Therefore, do not use shares issued, as they may include shares repurchased by the company.

At this point, you may be wondering why you are valuing the company if you are going to rely on the market's value of equity in the cost of capital. Shouldn't we be using the estimated equity value? The answer is no. Remember, we are only estimating today's market value to frame management's philosophy concerning capital structure. To value the company, use *target* weights.

For privately held companies, no market-based values are available. In this case, you must determine equity value (for the cost of capital) either using a

[40] For floating-rate bonds, changes in Treasury rates won't affect value, since coupons float with Treasury yields. Changes in market-based default premiums, however, will affect the market value of floating-rate bonds, since bonds are priced at a fixed spread above Treasury yields.

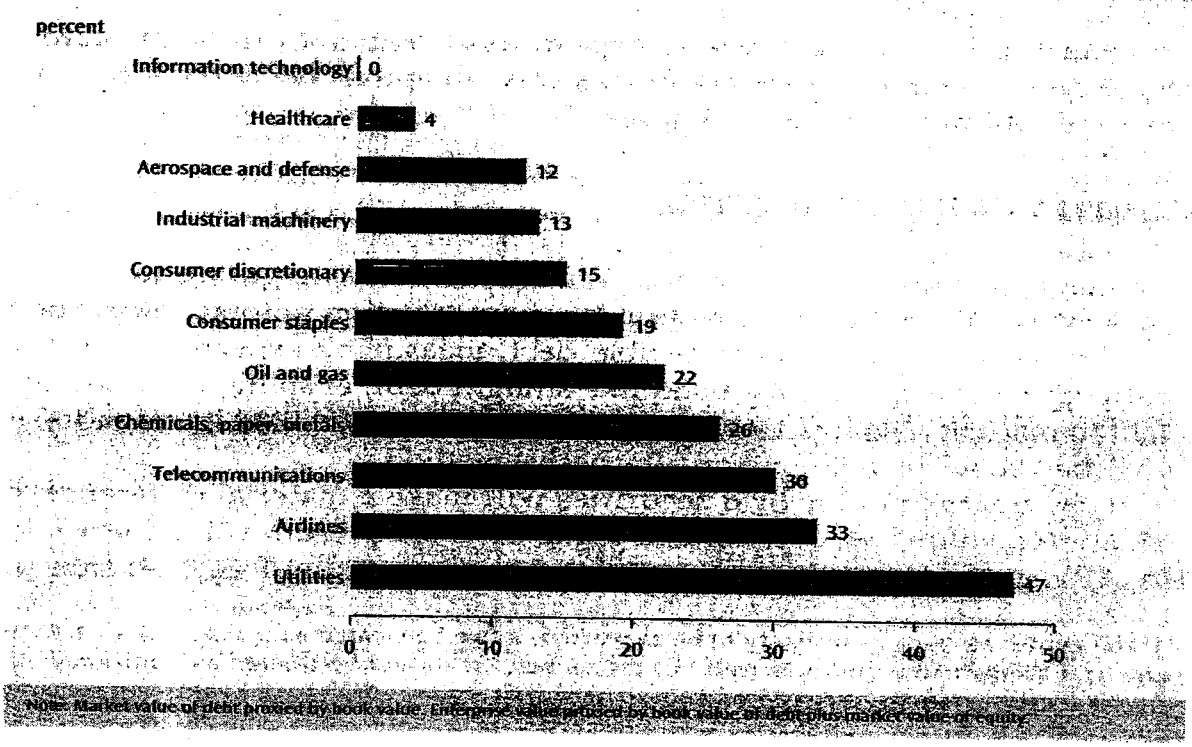
multiples approach or through DCF iteratively. To perform an iterative valuation, assume a reasonable capital structure, and value the enterprise using DCF. Using the estimate of debt to enterprise value, repeat the valuation. Continue this process until the valuation no longer materially changes.

Minority interest If minority interest—claims by outside shareholders on a portion of a company's business (often a subsidiary acquired by the company)—is publicly traded, then you can determine their approximate value directly from the market price for the shares. When the minority interest is not publicly traded, you must estimate its current value. To do this, apply a company-specific or industry price-to-earnings ratio directly to the income generated for minority interest.

Review Capital Structure of Comparable Companies

To place the company's current capital structure in the proper context, compare its capital structure with those of similar companies. Exhibit 10.15 presents the median debt-to-value levels for 11 industries. As the exhibit shows, industries with heavy fixed investment in tangible assets tend to have higher debt levels. High-growth industries, especially those

Exhibit 10.15 Median Debt-to-Market Value by Industry, 2003



Note: Market value of debt proxied by book value; enterprise value proxied by book value of debt plus market value of equity.

with intangible investments, tend to use very little debt. Economy-wide, the median debt-to-value ratio for the S&P 500 is 13.1 percent, and the median debt-to-equity ratio is 19.7 percent.

Having a company with a different capital structure is perfectly acceptable, but you should understand why. For instance, is the company by philosophy more aggressive or innovative in the use of debt financing, or is the capital structure only a temporary deviation from a more conservative target? Often, companies finance acquisitions with debt they plan to quickly retire or refinance with a stock offering. Alternatively, is there anything different about the company's cash flow or asset intensity that can explain the difference? Always use comparables to help you assess the reasonableness of estimated debt-to-equity levels.

Review Management's Philosophy

As a final step, review management's historical financing philosophy (or question management outright). Has the current team been actively managing the company's capital structure? Is the management team aggressive in its use of debt? Or is it overly conservative? Consider UPS, a company with a well-known conservative culture. Although cash flow is strong and stable, the company rarely issues debt. From a financing perspective, it doesn't need to issue additional securities; investments can be funded with current profits. Since the company is primarily employee owned, there is little threat of outside takeover. Therefore, UPS is unlikely to increase its target debt-to-value ratio anytime soon.

Over the long run, one would expect most companies to aim toward a target capital structure that minimizes cost of capital. We will address the choice of capital structure in Chapter 17.

COMPLEX CAPITAL STRUCTURES

The weighted average cost of capital is determined by weighting each security's expected return by its proportional contribution to total value. For a complex security, such as convertible debt, measuring expected return is challenging. Is a convertible bond like straight debt, enabling us to use the yield to maturity? Is it equity, enabling us to use the CAPM? In actuality, it is neither, so we recommend an alternative method.

If the treatment of hybrid securities will make a material difference in valuation results,[41] we recommend using adjusted present value (APV). In the APV, enterprise value is determined by discounting free cash flow at

[41] If the hybrid security is unlikely to be converted, it can be treated as traditional debt. Conversely, if the hybrid security is well "in the money," it should be treated as traditional equity. In these situations, errors are likely to be small, and a WACC-based valuation remains appropriate.

the unlevered cost of equity. The value of incremental cash flows related to financing, such as interest tax shields, is then computed separately. To determine the company's unlevered cost of equity, use the unlevered industry beta. This avoids the need to compute company specific components, such as the debt-to-equity ratio, a required input in the unlevering equation.

In some situations, you may still desire an accurate representation of the cost of capital. In these cases, split hybrid securities into their individual components. For instance, you can replicate a convertible bond by combining a traditional bond with a call option on the company's stock. You can further disaggregate a call option into a portfolio consisting of a risk-free bond and the company's stock. By converting a complex security into a portfolio of debt and equity, you once again have the components required for the traditional cost of capital. The process of creating replicating portfolios to value options is discussed in Chapter 20.

HEINEKEN CASE

In the case for this chapter, we explain how we estimated Heineken's WACC. Our estimate of Heineken's WACC is 7.5 percent as of the end of February 2004, as shown in Exhibit 10.16, based on a target market value capital structure of 10 percent debt to 90 percent equity, with the cost of equity at 8.0 percent and pretax cost of debt at 4.5 percent.

Our estimate of Heineken's target capital structure (10 percent debt to 90 percent equity) is based on historical analysis. Heineken's current capital structure using market values is 24 percent debt to 76 percent equity, as shown in Exhibit 10.17 on page 328, but the current capital structure is higher than Heineken's historical norm (see Exhibit 10.18 on p. 328). Heineken historically has had less than 10 percent debt. Its debt in 2002 and 2003 is higher because of recent acquisitions. In light of Heineken's excess cash balances, significant cash flow, and conservative dividend, we expect the company to reduce its debt levels significantly within a few years. So we selected a conservative long-term capital structure of 10 percent debt.

Exhibit 10.16 Heineken: Weighted Average Cost of Capital

percent

	Target capital structure	Cost	Tax benefit	Weighted cost
Debt	10.0	4.5	35	0.3
Common equity	90.0	8.0		7.2
Total	100.0			7.5

Exhibit 10.17 Heineken: Current Capital Structure

	Book value € million	Percent of total capitalization	Market value € million	Percent of total capitalization
Short-term debt	1,113	14	1,193	6
Long-term debt	2,721	33	2,809	15
Retirement-related liabilities	526	6	526	3
Total debt	4,360	53	4,448	24
Common equity	3,167	38	13,171	71
Minority interest	732	9	1,030	5
Total equity	3,899	47	14,201	76
Total capitalization	8,259	100	18,649	100

Even though we did not use Heineken's year-end 2003 capital structure, we present its calculation in Exhibit 10.17, as follows:

- *Short-term debt:* Short-term debt matures within one year, so in most cases, book value approximates market value.
- *Long-term debt:* None of Heineken's debt is publicly traded, so market quotes were unavailable. Heineken supplied limited information on its long-term debt issues. For the debt instruments for which we had information, we used the current face value, years to maturity, coupon rate, and opportunity cost of debt to estimate the market value by discounting the expected cash flows to the present (see Exhibit 10.19). For long-term debt where no information was available, we assumed the current book value was a reasonable proxy for market value.

Exhibit 10.18 Heineken: Historical Capital Structure

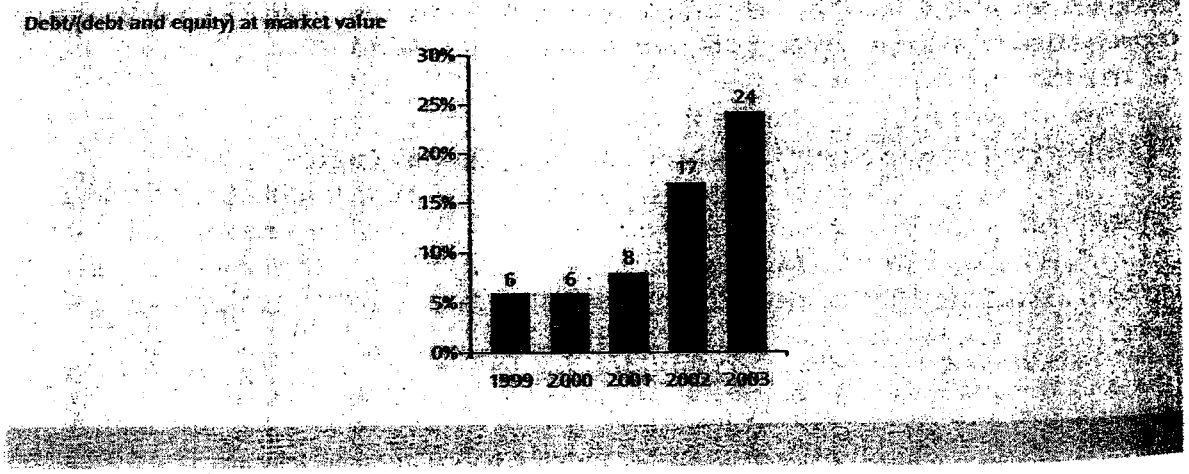


Exhibit 10.19 Heineken: Market Value of Long-Term Debt

Debt issue	Coupon rate percent	Book value € million	Year of maturity	Market value € million
Bond loan from credit institution	4.4	497	2010	496
Bond loan from credit institution	5.0	596	2013	624
Loan from credit institution	5.3	387	2008	414
Loan from credit institution	4.1	506	2008	540
Other issues		735		735
Total long-term debt		2,721		2,809

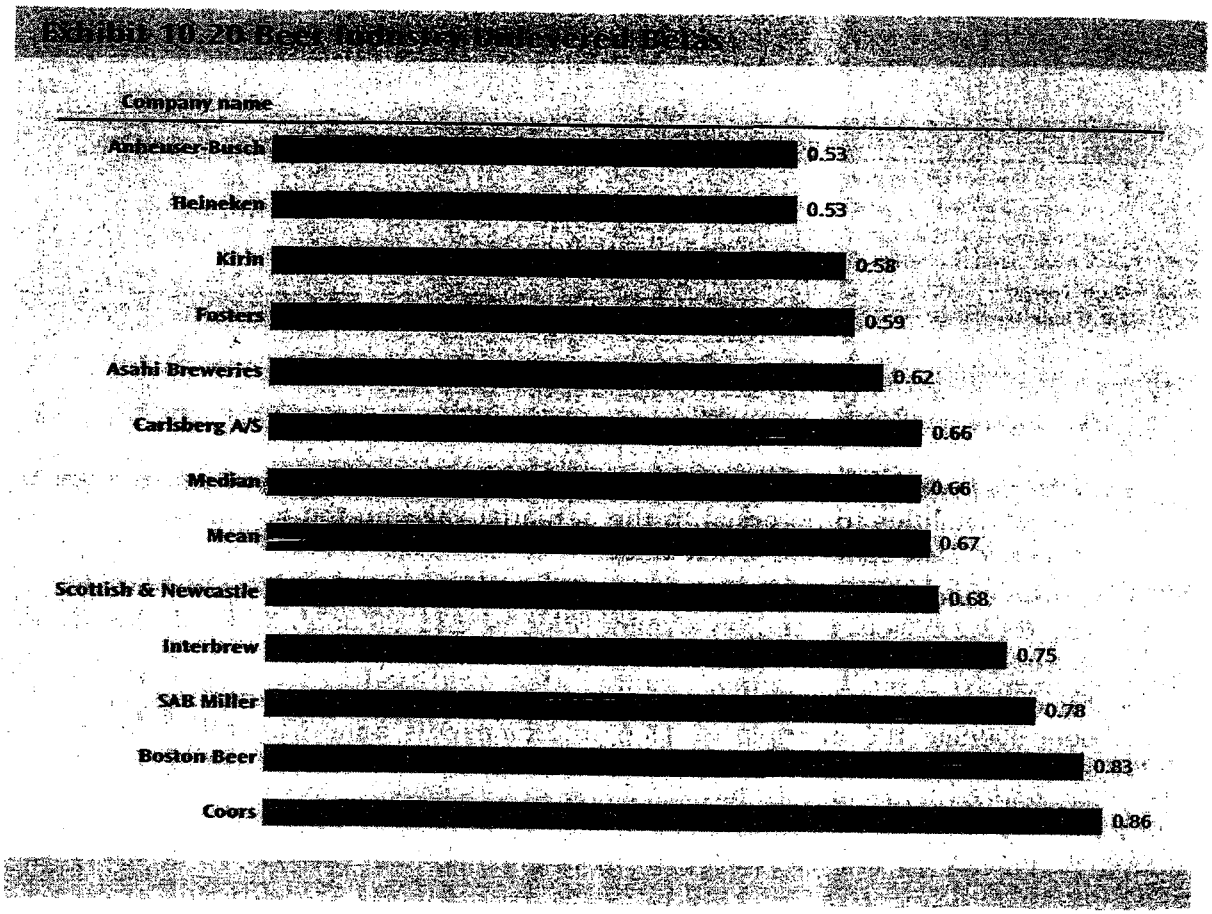
- *Retirement-related liabilities:* We estimated the market value of net retirement-related liabilities to be equal to the actuarial value in the footnotes, which for Heineken also equals its book value.
- *Common equity:* In late February 2004, the market value of Heineken's equity was €13.2 billion, based on a share price of €33.65 and a total of 392 million shares outstanding.
- *Minority interest:* To estimate a market value for minority interest, we applied a peer-average P/E multiple of 15.6 to Heineken's minority-interest income in 2003. Given minority-interest income in 2003 of 66 million, we estimated the market value of minority interest to be €1.0 billion.

We estimated the cost of Heineken's debt and equity as follows:

- *Cost of debt:* We assumed that Heineken's opportunity cost of debt equals that of the similarly rated companies (as expressed as a premium over the risk-free rate). Although Heineken has not been rated by S&P or Moody's, we have assumed that its rating would be similar to highly rated beer companies. In the Netherlands, the default premium for investment-grade companies comparable to Heineken was about 40 basis points in February 2004. Since the euro risk-free rate in February was 4.1 percent, the opportunity cost of debt is 4.5 percent before taxes, or 2.9 percent after taxes.
- *Cost of equity:* Using the capital asset pricing model, we estimated Heineken's cost of equity to be 8.0 percent based on a euro risk-free rate of 4.1 percent,[42] a market risk premium of 5.2 percent,[43] and a levered beta of approximately 0.75 rounded. The levered beta is based on the median of the unlevered betas for a sample of brewers (0.66), shown in Exhibit 10.20 on page 330, relevered to Heineken's target capital structure (debt-to-value ratio of 10 percent). To unlever and relever the betas, we used the formula $\beta_l = \beta_u \times (1 + D/E)$, as explained

[42] We used the yield on German treasury bonds for the risk-free rate, as they are the most liquid and have the lowest yield to maturity.

[43] The market risk premium is based on a 7.0 percent real return on equities less the real return on the risk-free rate of 1.8 percent at the time of the Heineken valuation.



earlier in this chapter. In the brewing industry, the range of unlevered betas was 0.53 to 0.86, and the median and mean were almost identical (0.66 and 0.67, respectively). As we mentioned earlier, individual companies' betas are difficult to measure, so we typically use the industry median rather than a company's measured beta unless we have specific reasons to believe that the company's beta should differ from the industry.

EXHIBIT
R-16
ADMITTED

R-16

PAGES 3753-3760
File in page order in the *Selection & Opinion* binder.

THE VALUE LINE Investment Survey®

PART 2 — *Selection & Opinion* — JANUARY 9, 2009

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Faithfully, Jean Bernhard Buttner

The Value Line View

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The *Selection & Opinion* Index appears on page 3817 (November 28, 2008).

In Three Parts: Part 1 is the Summary & Index. This is Part 2, Selection & Opinion. Part 3 is Ratings & Reports. Volume LXIV, Number 20.

Published weekly by VALUE LINE PUBLISHING, INC.
220 East 42nd Street, New York, NY 10017-5891.

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ECONOMIC AND STOCK MARKET COMMENTARY

The United States and other countries are caught in the grip of what will likely be a long and painful recession. This nation's economic difficulties—which have been apparent in housing for more than a year and in other areas for a shorter span of time—worsensed noticeably last quarter. That period, which ended with one of the poorest holiday shopping seasons on record, may have seen U.S. gross domestic product tumble by 5%, or so.

At least two more quarters of sharp economic reversals look to be ahead of us. True, a contraction in business activity of such mammoth proportions, as we probably saw last quarter, may have been a one-time affair. However, even if the worst of the downturn is behind us—due to the unprecedented governmental steps taken in 2008 and the massive monetary infusions by the Federal Reserve—there would seem to be enough cumulative weakness around in housing, autos, retailing, and industrial activity to almost ensure that GDP will decline by 2% to 4% in the first half of 2009.

Any business recovery in 2009 may arrive late and be selective, in our view. Our sense is that the fiscal and monetary moves undertaken last year and the prospective federal government recovery plans likely to be forthcoming will lessen the severity and duration of the recession in select areas, such as infrastructure building and possibly even housing. However, the hoped-for second-half recovery is a bit conjectural at this time. Indeed, even if all goes well, any second-half growth may be capped at 1% to 2%.

While there is some room for optimism on the economy, likely further increases in joblessness and the prospective additional declines in home prices do not augur well for the improvement in consumer spending that is needed to revive the economy. A partial offset to the above is likely to be the gains in disposable income that should evolve from the recent declines in heating oil, gasoline, and food costs. Once other sectors of the economy start to stabilize, the lower inflation should provide some help to spending.

The investment picture remains muddled. Equities are still range bound, reflecting the tough business outlook, on the one hand, and the possibility that last year's dismal stock market performance may have partially taken these hard times into account, on the other hand.

Conclusion: We think this tug of war will ultimately be resolved in favor of the bulls, assuming the economy starts to stabilize during the first half of 2009. Please refer to the inside back cover of *Selection & Opinion* for our Asset Allocation Model's current reading.

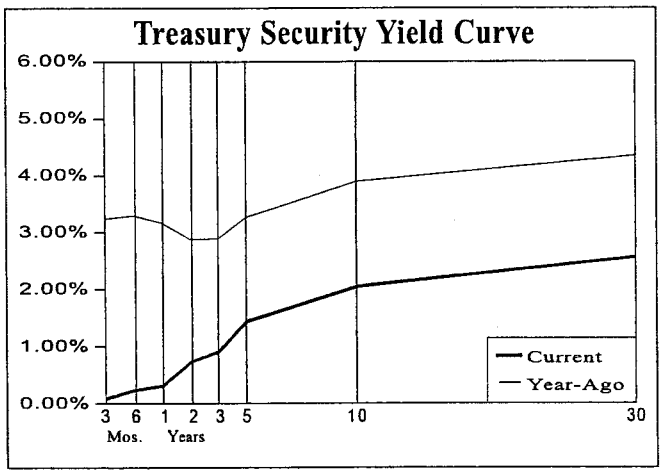
CLOSING STOCK MARKET AVERAGES AS OF PRESS TIME

	12/23/2008	12/30/2008	%Change 1 week	%Change 12 months
Dow Jones Industrial Average	8419.49	8668.39	+3.0%	-35.1%
Standard & Poor's 500	863.16	890.64	+3.2%	-39.8%
N.Y. Stock Exchange Composite	5468.28	5670.00	+3.7%	-42.2%
NASDAQ Composite	1521.54	1550.70	+1.9%	-42.0%
NASDAQ 100	1183.19	1201.34	+1.5%	-43.0%
American Stock Exchange Index	1339.36	1373.27	+2.5%	-43.4%
Value Line (Geometric)	212.94	219.44	+3.1%	-50.4%
Value Line (Arithmetic)	1319.66	1363.41	+3.3%	-39.6%
London (FT-SE 100)	4255.9	4392.6	+3.2%	-32.0%
Tokyo (Nikkei)	8723.78	8859.56	+1.6%	-42.1%
Russell 2000	468.64	482.77	+3.0%	-37.4%

Selected Yields

	Recent (12/30/08)	3 Months Ago (10/01/08)	Year Ago (1/02/08)
TAXABLE			
Market Rates			
Discount Rate	0.50	2.25	4.75
Federal Funds	0.00-0.25	2.00	4.25
Prime Rate	3.25	5.00	7.25
30-day CP (A1/P1)	0.06	3.05	4.40
3-month LIBOR	1.44	4.15	4.68
Bank CDs			
6-month	1.16	1.61	2.81
1-year	1.43	2.14	3.43
5-year	2.51	3.77	3.73
U.S. Treasury Securities			
3-month	0.09	0.80	3.25
6-month	0.24	1.45	3.30
1-year	0.31	1.66	3.17
5-year	1.44	2.86	3.28
10-year	2.05	3.74	3.90
10-year (inflation-protected)	2.33	2.25	1.56
30-year	2.56	4.22	4.35
30-year Zero	2.42	4.22	4.38

	Recent (12/30/08)	3 Months Ago (10/01/08)	Year Ago (1/02/08)
Mortgage-Backed Securities			
GNMA 6.5%	4.11	5.64	5.36
FHLMC 6.5% (Gold)	4.03	5.63	5.44
FNMA 6.5%	3.89	5.54	5.37
FNMA ARM	4.22	3.88	5.38
Corporate Bonds			
Financial (10-year) A	7.08	7.25	5.86
Industrial (25/30-year) A	5.90	6.52	5.92
Utility (25/30-year) A	5.85	6.46	5.94
Utility (25/30-year) Baa/BBB	6.58	6.61	6.11
Foreign Bonds (10-Year)			
Canada	2.66	3.71	3.91
Germany	2.95	4.00	4.21
Japan	1.17	1.51	1.51
United Kingdom	3.09	4.43	4.44
Preferred Stocks			
Utility A	6.00	6.53	6.31
Financial A	7.89	7.78	8.12
Financial Adjustable A	5.48	5.48	5.48



	Recent (12/30/08)	3 Months Ago (10/01/08)	Year Ago (1/02/08)
TAX-EXEMPT			
Bond Buyer Indexes			
20-Bond Index (GOs)	5.46	5.23	4.44
25-Bond Index (Revs)	6.22	5.56	4.80
General Obligation Bonds (GOs)			
1-year Aaa	0.85	2.10	2.88
1-year A	0.95	2.20	2.92
5-year Aaa	2.57	3.32	3.19
5-year A	2.87	3.37	3.49
10-year Aaa	3.70	4.23	3.61
10-year A	4.20	4.43	3.90
25/30-year Aaa	5.17	5.29	4.26
25/30-year A	6.15	5.67	4.37
Revenue Bonds (Revs) (25/30-Year)			
Education AA	6.15	5.45	4.40
Electric AA	6.20	5.40	4.40
Housing AA	6.50	5.90	4.65
Hospital AA	6.55	5.95	4.65
Toll Road Aaa	6.25	5.40	4.50

Federal Reserve Data

BANK RESERVES

(Two-Week Period; in Millions, Not Seasonally Adjusted)

	Recent Levels			Average Levels Over the Last...		
	12/17/08	12/3/08	Change	12 Wks.	26 Wks.	52 Wks.
Excess Reserves	774437	589715	184722	402723	202422	105940
Borrowed Reserves	674517	675885	-1368	607558	387830	244268
Net Free/Borrowed Reserves	99920	-86170	186090	-204836	-185409	-138328

MONEY SUPPLY

(One-Week Period; in Billions, Seasonally Adjusted)

	Recent Levels			Growth Rates Over the Last...		
	12/15/08	12/8/08	Change	3 Mos.	6 Mos.	12 Mos.
M1 (Currency+demand deposits)	1606.9	1583.2	23.7	69.4%	35.0%	17.9%
M2 (M1+savings+small time deposits)	8104.2	8060.1	44.1	23.9%	12.3%	9.5%

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K-17

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 1, PAGE 1 OF 5

OCRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	3.90%	2.71%	0.11%
2	LONG-TERM DEBT	6,865,000	280,000	7,145,000	19.70%	5.34%	1.05%
3	COMMON EQUITY	27,002,476	640,000	27,642,476	76.40%	8.96%	6.85%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ 920,000	$ 36,187,476	100.00%		
5	**OCRB WEIGHTED COST OF CAPITAL**						8.01%

FVRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	3.90%	2.71%	0.11%
2	LONG-TERM DEBT	6,865,000	280,000	7,145,000	19.70%	5.34%	1.05%
3	COMMON EQUITY	27,002,476	640,000	27,642,476	76.40%	6.96%	5.32%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ 920,000	$ 36,187,476	100.00%		
5	**FVRB WEIGHTED COST OF CAPITAL**						6.48%

REFERENCES:
COLUMN (A): COMPANY SCHEDULE D-1
COLUMN (B): TESTIMONY, WAR
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): COLUMN (C) ÷ COLUMN (C), LINE 4
COLUMN (E): SCHEDULE WAR-1, PAGES 2 THROUGH 5 - TESTIMONY, WAR
COLUMN (F): COLUMN (D) x COLUMN (E)

EXHIBIT
K-17
ADMITTED

COST OF SHORT-TERM DEBT

1	ONE YEAR LONDON INTERBANK OFFERED RATE (LIBOR)	2.71%

REFERENCE:
ONE YEAR LIBOR RATE PUBLISHED IN THE SEPTEMBER 12, 2008 EDITION OF THE WALL STREET JOURNAL

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 1, PAGE 3 OF 5

WEIGHTED COST OF LONG-TERM DEBT

LINE NO.	(A) DESCRIPTION	(B) AMOUNT OUTSTANDING	(C) ANNUAL INTEREST	(D) INTEREST RATE	(E) BALANCE RATIOS	(F) WEIGHTED COST OF DEBT
1	SERIES 1997A SERIAL BONDS, DUE 1998 TO 2007 (4.00% TO 4.85%)	$ -	$ -	-	-	-
2	SERIES 1997A TERM BONDS, DUE 2011 (5.20%)	960,000	49,920	5.200%	14.58%	0.8%
3	SERIES 1997A TERM BONDS, DUE 2022 (5.40%)	4,610,000	248,940	5.400%	70.01%	3.8%
4	SERIES 1997B TERM BONDS, DUE 2022 (5.20%)	1,015,000	52,780	5.200%	15.41%	0.8%
5						
6	TOTALS	$ 6,585,000	$ 351,640		100.00%	
7						
8	**WEIGHTED COST OF DEBT**					5.34%

REFERENCES:
COLUMN (A) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (B) LINES 1 THRU 4: COMPANY SCHEDULE D-1, PAGE 1
COLUMN (C) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (D) LINES 1 THRU 4: COLUMN (C) ÷ COLUMN (B)
COLUMN (E): COLUMN (A) LINES 2 THRU 4 ÷ LINE 6
COLUMN (F): COLUMN (D) x COLUMN (E)

COST OF COMMON EQUITY CALCULATION

LINE NO.			
1	**DCF METHODOLOGY**		
2	DCF - WATER COMPANY SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.07%	SCHEDULE WAR-2, COLUMN (C), LINE 5
3	DCF - NATURAL GAS LDC SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.79%	SCHEDULE WAR-2, COLUMN (C), LINE 13
4	AVERAGE OF DCF ESTIMATES	9.43%	(LINE 2 + LINE 3) ÷ 2
5	**CAPM METHODOLOGY**		
6	CAPM - WATER COMPANY GEOMETRIC MEAN ESTIMATE	8.31%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 5
7	CAPM - NATURAL GAS LDC GEOMETRIC MEAN ESTIMATE	7.11%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 13
8	CAPM - WATER COMPANY ARITHMETIC MEAN ESTIMATE	10.09%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 5
9	CAPM - NATURAL GAS LDC ARITHMETIC MEAN ESTIMATE	8.49%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 13
10	AVERAGE OF CAPM ESTIMATES	8.50%	(SUM OF LINES 6 THRU 9) ÷ 4
11	**AVERAGE OF DCF AND CAPM ESTIMATES**	8.96%	(LINE 4 + LINE 10) ÷ 2
12	**INFLATION ADJUSTMENT**	2.00%	SCHEDULE WAR 1, PAGE 5 OF 5
13	**FVRB COST OF COMMON EQUITY ESTIMATE**	6.96%	LINE 11 - LINE 12

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 1 OF 2

BASED ON A GEOMETRIC MEAN:

LINE NO.	STOCK SYMBOL	k	=	r_f	+ [	(A) ß	x	(	r_m	-	r_f	)]	=	(B) EXPECTED RETURN
1	AWR	k	=	2.95%	+ [	1.05	x	(	10.40%	-	5.30%	)]	=	8.31%
2	CWT	k	=	2.95%	+ [	1.15	x	(	10.40%	-	5.30%	)]	=	8.82%
3	SWWC	k	=	2.95%	+ [	1.05	x	(	10.40%	-	5.30%	)]	=	8.31%
4	WTR	k	=	2.95%	+ [	0.95	x	(	10.40%	-	5.30%	)]	=	7.80%
5	**WATER COMPANY AVERAGE**					1.05								8.31%
6	ATG	k	=	2.95%	+ [	0.85	x	(	10.40%	-	5.30%	)]	=	7.29%
7	ATO	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
8	LG	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
9	NJR	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
10	GAS	k	=	2.95%	+ [	0.90	x	(	10.40%	-	5.30%	)]	=	7.54%
11	NWN	k	=	2.95%	+ [	0.75	x	(	10.40%	-	5.30%	)]	=	6.78%
12	PNY	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
13	SJI	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
14	SWX	k	=	2.95%	+ [	0.80	x	(	10.40%	-	5.30%	)]	=	7.03%
15	WGL	k	=	2.95%	+ [	0.85	x	(	10.40%	-	5.30%	)]	=	7.29%
16	**NATURAL GAS LDC AVERAGE**					0.82								7.11%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE GEOMETRIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK .

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 2 OF 2

BASED ON AN ARITHMETIC MEAN:

LINE NO.	STOCK SYMBOL	k	=	r_f	+ [	(A) ß	x	(	r_m	-	r_f	)]	=	(B) EXPECTED RETURN
1	AWR	k	=	2.95%	+ [	1.05	x	(	12.30%	-	5.50%	)]	=	10.09%
2	CWT	k	=	2.95%	+ [	1.15	x	(	12.30%	-	5.50%	)]	=	10.77%
3	SWWC	k	=	2.95%	+ [	1.05	x	(	12.30%	-	5.50%	)]	=	10.09%
4	WTR	k	=	2.95%	+ [	0.95	x	(	12.30%	-	5.50%	)]	=	9.41%
5	**WATER COMPANY AVERAGE**					1.05								10.09%
6	ATG	k	=	2.95%	+ [	0.85	x	(	12.30%	-	5.50%	)]	=	8.73%
7	ATO	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
8	LG	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
9	NJR	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
10	GAS	k	=	2.95%	+ [	0.90	x	(	12.30%	-	5.50%	)]	=	9.07%
11	NWN	k	=	2.95%	+ [	0.75	x	(	12.30%	-	5.50%	)]	=	8.05%
12	PNY	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
13	SJI	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
14	SWX	k	=	2.95%	+ [	0.80	x	(	12.30%	-	5.50%	)]	=	8.39%
15	WGL	k	=	2.95%	+ [	0.85	x	(	12.30%	-	5.50%	)]	=	8.73%
16	**NATURAL GAS LDC AVERAGE**					0.82								8.49%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [ß (r_m - r_f)]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY' "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE ARITHMETIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK.

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 1, PAGE 1 OF 5

R-18

OCRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	3.90%	2.71%	0.11%
2	LONG-TERM DEBT	6,865,000	280,000	7,145,000	19.70%	5.34%	1.05%
3	COMMON EQUITY	27,002,476	640,000	27,642,476	76.40%	8.10%	6.19%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ 920,000	$ 36,187,476	100.00%		
5	**OCRB WEIGHTED COST OF CAPITAL**						7.35%

FVRB WEIGHTED COST OF CAPITAL

LINE NO.	DESCRIPTION	(A) CAPITALIZATION PER COMPANY	(B) RUCO ADJUSTMENTS	(C) RUCO ADJUSTED CAPITALIZATION	(D) CAPITAL RATIO	(E) COST	(F) WEIGHTED COST
1	SHORT-TERM DEBT	$ 1,400,000	$ -	$ 1,400,000	3.90%	2.71%	0.11%
2	LONG-TERM DEBT	6,865,000	280,000	7,145,000	19.70%	5.34%	1.05%
3	COMMON EQUITY	27,002,476	640,000	27,642,476	76.40%	6.10%	4.66%
4	TOTAL CAPITALIZATION	$ 35,267,476	$ 920,000	$ 36,187,476	100.00%		
5	**FVRB WEIGHTED COST OF CAPITAL**						5.82%

REFERENCES:
COLUMN (A): COMPANY SCHEDULE D-1
COLUMN (B): TESTIMONY, WAR
COLUMN (C): COLUMN (A) + COLUMN (B)
COLUMN (D): COLUMN (C) ÷ COLUMN (C), LINE 4
COLUMN (E): SCHEDULE WAR-1, PAGES 2 THROUGH 5 - TESTIMONY, WAR
COLUMN (F): COLUMN (D) x COLUMN (E)

EXHIBIT
R-18
ADMITTED

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 1, PAGE 2 OF 5

COST OF SHORT-TERM DEBT

1	ONE YEAR LONDON INTERBANK OFFERED RATE (LIBOR)	2.71%

REFERENCE:
ONE YEAR LIBOR RATE PUBLISHED IN THE SEPTEMBER 12, 2008 EDITION OF THE WALL STREET JOURNAL

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 1, PAGE 3 OF 5

WEIGHTED COST OF LONG-TERM DEBT

LINE NO.	(A) DESCRIPTION	(B) AMOUNT OUTSTANDING	(C) ANNUAL INTEREST	(D) INTEREST RATE	(E) BALANCE RATIOS	(F) WEIGHTED COST OF DEBT
1	SERIES 1997A SERIAL BONDS, DUE 1998 TO 2007 (4.00% TO 4.85%)	$ -	$ -	-	-	-
2	SERIES 1997A TERM BONDS, DUE 2011 (5.20%)	960,000	49,920	5.200%	14.58%	0.8%
3	SERIES 1997A TERM BONDS, DUE 2022 (5.40%)	4,610,000	248,940	5.400%	70.01%	3.8%
4	SERIES 1997B TERM BONDS, DUE 2022 (5.20%)	1,015,000	52,780	5.200%	15.41%	0.8%
5						
6	TOTALS	$ 6,585,000	$ 351,640		100.00%	
7						
8	**WEIGHTED COST OF DEBT**					5.34%

REFERENCES:
COLUMN (A) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (B) LINES 1 THRU 4: COMPANY SCHEDULE D-1, PAGE 1
COLUMN (C) LINES 1 THRU 4: COMPANY SCHEDULE D-2, PAGE 1
COLUMN (D) LINES 1 THRU 4: COLUMN (C) ÷ COLUMN (B)
COLUMN (E): COLUMN (A) LINES 2 THRU 4 ÷ LINE 6
COLUMN (F): COLUMN (D) x COLUMN (E)

COST OF COMMON EQUITY CALCULATION

LINE NO.			
1	**DCF METHODOLOGY**		
2	DCF - WATER COMPANY SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.07%	SCHEDULE WAR-2, COLUMN (C), LINE 5
3	DCF - NATURAL GAS LDC SINGLE-STAGE CONSTANT GROWTH MODEL ESTIMATE	9.79%	SCHEDULE WAR-2, COLUMN (C), LINE 13
4	AVERAGE OF DCF ESTIMATES	9.43%	(LINE 2 + LINE 3) ÷ 2
5	**CAPM METHODOLOGY**		
6	CAPM - WATER COMPANY GEOMETRIC MEAN ESTIMATE	6.84%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 5
7	CAPM - NATURAL GAS LDC GEOMETRIC MEAN ESTIMATE	5.25%	SCHEDULE WAR-7 PAGE 1, COLUMN (B), LINE 13
8	CAPM - WATER COMPANY ARITHMETIC MEAN ESTIMATE	8.57%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 5
9	CAPM - NATURAL GAS LDC ARITHMETIC MEAN ESTIMATE	6.44%	SCHEDULE WAR-7 PAGE 2, COLUMN (B), LINE 13
10	AVERAGE OF CAPM ESTIMATES	6.77%	(SUM OF LINES 6 THRU 9) ÷ 4
11	**AVERAGE OF DCF AND CAPM ESTIMATES**	8.10%	(LINE 4 + LINE 10) ÷ 2
12	**INFLATION ADJUSTMENT**	2.00%	SCHEDULE WAR 1, PAGE 5 OF 5
13	**FVRB COST OF COMMON EQUITY ESTIMATE**	6.10%	LINE 11 - LINE 12

CHAPARRAL CITY WATER COMPANY, INC
DOCKET NO. W-02113A-07-0551
COST OF CAPITAL SUMMARY

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR-5 OF 5

FVRB INFLATION ADJUSTMENT TO COMMON EQUITY

LINE NO.	(A) YEAR	(B) VALUE TIPS	(C) VALUE BONDS	(D) DIFFERENCE
1	2001	3.31%	5.02%	1.70%
2	2002	2.85%	4.61%	1.77%
3	2003	1.81%	4.01%	2.20%
4	2004	1.37%	4.27%	2.90%
5	2005	1.53%	4.29%	2.76%
6	2006	2.25%	4.80%	2.54%
7	2007	2.10%	4.63%	2.54%
8	2008	0.13%	3.79%	3.66%
9	AVERAGE	1.92%	4.43%	2.51%
10	RECOMMENDED FVRB INFLATION ADJUSTMENT TO COMMON EQUITY (a)			**2.00%**

(a) BASED ON THE LOW END - ROUNDED

REFERENCES

COLUMNS (A), (B) AND (C): FEDERAL RESERVE BANK OF ST. LOUIS WEBSITE
COLUMNS (D): COLUMN (C) - COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
DCF COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 2

LINE NO.	STOCK SYMBOL	COMPANY	(A) DIVIDEND YIELD	+	(B) GROWTH RATE (g)	=	(C) DCF COST OF EQUITY CAPITAL
1	AWR	AMERICAN STATES WATER CO.	2.62%	+	8.32%	=	10.94%
2	CWT	CALIFORNIA WATER SERVICE GROUP	3.08%	+	6.62%	=	9.70%
3	SWWC	SOUTHWEST WATER COMPANY	2.15%	+	4.93%	=	7.09%
4	WTR	AQUA AMERICA, INC.	2.94%	+	5.60%	=	8.54%
5	**WATER COMPANY AVERAGE**						9.07%
6	ATG	AGL RESOURCES, INC.	5.08%	+	5.75%	=	10.83%
7	ATO	ATMOS ENERGY CORP.	4.87%	+	4.32%	=	9.19%
8	LG	LACLEDE GROUP, INC.	3.41%	+	6.12%	=	9.53%
9	NJR	NEW JERSEY RESOURCES CORPORATION	3.21%	+	6.88%	=	10.09%
10	GAS	NICOR, INC.	4.30%	+	6.29%	=	10.59%
11	NWN	NORTHWEST NATURAL GAS CO.	3.19%	+	5.24%	=	8.43%
12	PNY	PIEDMONT NATURAL GAS COMPANY	3.73%	+	4.76%	=	8.49%
13	SJI	SOUTH JERSEY INDUSTIES, INC.	3.03%	+	10.48%	=	13.51%
14	SWX	SOUTHWEST GAS CORPORATION	3.07%	+	5.78%	=	8.86%
15	WGL	WGL HOLDINGS, INC.	4.36%	+	4.06%	=	8.42%
16	**NATURAL GAS LDC AVERAGE**						9.79%

REFERENCES:
COLUMN (A): SCHEDULE WAR - 3, COLUMN C
COLUMN (B): SCHEDULE WAR - 4, PAGE 1, COLUMN C
COLUMN (C): COLUMN (A) + COLUMN (B)

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 1 OF 2

BASED ON A GEOMETRIC MEAN:

LINE NO.	STOCK SYMBOL	k	=	r_f	+ [	(A) ß	x	(	r_m	-	r_f	)]	=	(B) EXPECTED RETURN
1	AWR	k	=	1.68%	+ [	0.95	x	(	10.40%	-	5.30%	)]	=	6.53%
2	CWT	k	=	1.68%	+ [	1.10	x	(	10.40%	-	5.30%	)]	=	7.29%
3	SWWC	k	=	1.68%	+ [	1.00	x	(	10.40%	-	5.30%	)]	=	6.78%
4	WTR	k	=	1.68%	+ [	1.00	x	(	10.40%	-	5.30%	)]	=	6.78%
5	**WATER COMPANY AVERAGE**					1.01								6.84%
6	ATG	k	=	1.68%	+ [	0.75	x	(	10.40%	-	5.30%	)]	=	5.51%
7	ATO	k	=	1.68%	+ [	0.65	x	(	10.40%	-	5.30%	)]	=	5.00%
8	LG	k	=	1.68%	+ [	0.65	x	(	10.40%	-	5.30%	)]	=	5.00%
9	NJR	k	=	1.68%	+ [	0.70	x	(	10.40%	-	5.30%	)]	=	5.25%
10	GAS	k	=	1.68%	+ [	0.70	x	(	10.40%	-	5.30%	)]	=	5.25%
11	NWN	k	=	1.68%	+ [	0.60	x	(	10.40%	-	5.30%	)]	=	4.74%
12	PNY	k	=	1.68%	+ [	0.70	x	(	10.40%	-	5.30%	)]	=	5.25%
13	SJI	k	=	1.68%	+ [	0.75	x	(	10.40%	-	5.30%	)]	=	5.51%
14	SWX	k	=	1.68%	+ [	0.75	x	(	10.40%	-	5.30%	)]	=	5.51%
15	WGL	k	=	1.68%	+ [	0.75	x	(	10.40%	-	5.30%	)]	=	5.51%
16	**NATURAL GAS LDC AVERAGE**					0.70								5.25%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [\, ß\, (r_m - r_f)\,]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE GEOMETRIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK.

CHAPARRAL CITY WATER COMPANY, INC
TEST YEAR ENDED DECEMBER 31, 2006
CAPM COST OF EQUITY CAPITAL

DOCKET NO. W-02113A-07-0551
SCHEDULE WAR - 7, PAGE 2 OF 2

BASED ON AN ARITHMETIC MEAN:

LINE NO.	STOCK SYMBOL						(A)										(B) EXPECTED RETURN
		k	=	r_f	+	[	ß	x	(	r_m	-	r_f	)	]	=		
1	AWR	k	=	1.68%	+	[	0.95	x	(	12.30%	-	5.50%	)	]	=		8.14%
2	CWT	k	=	1.68%	+	[	1.10	x	(	12.30%	-	5.50%	)	]	=		9.16%
3	SWWC	k	=	1.68%	+	[	1.00	x	(	12.30%	-	5.50%	)	]	=		8.48%
4	WTR	k	=	1.68%	+	[	1.00	x	(	12.30%	-	5.50%	)	]	=		8.48%
5	**WATER COMPANY AVERAGE**						1.01										8.57%
6	ATG	k	=	1.68%	+	[	0.75	x	(	12.30%	-	5.50%	)	]	=		6.78%
7	ATO	k	=	1.68%	+	[	0.65	x	(	12.30%	-	5.50%	)	]	=		6.10%
8	LG	k	=	1.68%	+	[	0.65	x	(	12.30%	-	5.50%	)	]	=		6.10%
9	NJR	k	=	1.68%	+	[	0.70	x	(	12.30%	-	5.50%	)	]	=		6.44%
10	GAS	k	=	1.68%	+	[	0.70	x	(	12.30%	-	5.50%	)	]	=		6.44%
11	NWN	k	=	1.68%	+	[	0.60	x	(	12.30%	-	5.50%	)	]	=		5.76%
12	PNY	k	=	1.68%	+	[	0.70	x	(	12.30%	-	5.50%	)	]	=		6.44%
13	SJI	k	=	1.68%	+	[	0.75	x	(	12.30%	-	5.50%	)	]	=		6.78%
14	SWX	k	=	1.68%	+	[	0.75	x	(	12.30%	-	5.50%	)	]	=		6.78%
15	WGL	k	=	1.68%	+	[	0.75	x	(	12.30%	-	5.50%	)	]	=		6.78%
16	**NATURAL GAS LDC AVERAGE**						0.70										6.44%

REFERENCES:
COLUMN (A): SHARPE LITNER CAPITAL ASSET PRICING MODEL ("CAPM") FORMULA

$$k = r_f + [ß (r_m - r_f)]$$

WHERE: k = THE EXPECTED RETURN ON A GIVEN SECURITY
r_f = RATE OF RETURN ON A RISK FREE ASSET PROXY (a)
ß = THE BETA COEFFICIENT OF A GIVEN SECURITY
r_m = PROXY FOR THE MARKET RATE OF RETURN (b)

COLUMN (B): EXPECTED RATE OF RETURN USING THE CAPM FORMULA

NOTES

(a) THE 5-YEAR U.S. TREASURY CONSTANT MATURITY RATE THAT APPEARED IN VALUE LINE INVESTMENT SURVEY' "SELECTION & OPINIONS" PUBLICATION DATED 09/12/2008 WAS USED AS A RISK FREE RATE OF RETURN.

(b) THE MARKET RATE PROXY USED WAS THE ARITHMETIC MEAN FOR S&P 500 RETURNS OVER THE 1926 - 2007 PERIOD. THE DATA WAS OBTAINED FROM IBBOTSON ASSOCIATES' STOCKS, BONDS, BILLS AND INFLATION: 2008 YEARBOOK.

EXHIBIT
R-20
ADMITTED

BEFORE THE ARIZONA CORPORATION COMMISSION

MIKE GLEASON
CHAIRMAN
WILLIAM A. MUNDELL
COMMISSIONER
JEFF HATCH-MILLER
COMMISSIONER
KRISTIN K. MAYES
COMMISSIONER
GARY PIERCE
COMMISSIONER

IN THE MATTER OF THE APPLICATION OF CHAPARRAL CITY WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.	Docket No. W-02113A-04-0616

NOTICE OF FILING DIRECT TESTIMONY

The Residential Utility Consumer Office ("RUCO") hereby provides notice of filing the Direct Testimony of Dr. Ben Johnson in the above-referenced matter.

RESPECTFULLY SUBMITTED this 30th day of August 2007.

Scott S. Wakefield
Chief Counsel

AN ORIGINAL AND THIRTEEN COPIES
of the foregoing filed this 30th day
of August 2007 with:

Docket Control
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

COPIES of the foregoing hand delivered/
mailed this 30th day of August 2007 to:

Teena Wolfe, Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Christopher Kempley, Chief Counsel
Legal Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Ernest Johnson, Director
Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007

Norman D. James
Jay L. Shapiro
Fennemore Craig
3003 North Central Avenue
Suite 2600
Phoenix, Arizona 85012

Robert N. Hanford
Chaparral City Water Company
12021 N. Panorama Drive
Fountain Hills, AZ 85268

By _____
Ernestine Gamble

CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-04-0616

DIRECT TESTIMONY

OF

BEN JOHNSON, PH.D.

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

AUGUST 30, 2007

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TESTIMONY

OF BEN JOHNSON, PH.D.

On Behalf of

The Residential Utility Consumer Office

Before the

Arizona Corporation Commission

Docket No. W-02113A-04-0616

Introduction

Q. Would you please state your name and address?

A. Ben Johnson, 3854-2 Killearn Court, Tallahassee, Florida.

Q. What is your present occupation?

A. I am a consulting economist and president of Ben Johnson Associates, Inc.®, an economic research firm specializing in public utility regulation.

Q. Have you prepared an appendix that describes your qualifications in regulatory and utility economics?

A. Yes. Appendix A, attached to my testimony, will serve this purpose.

Q. What is your purpose in making your appearance at this hearing?

A. Our firm has been retained by the Residential Utility Consumer Office ("RUCO") to

assist with RUCO's participation in this proceeding, with respect to the appropriate rate of return to be applied to Chaparral City Water Company's (Chaparral City or Company) fair value rate base.

Following this introduction, my testimony has four sections. In the first section, I briefly summarize the background of this proceeding. In the second section, I discuss rate regulation and the concept of a fair value rate base. In the third section, I continue this discussion, focusing more specifically on the concept of a fair rate of return as it is appropriately applied in the context of a fair value rate base. I include a discussion of the Commission's long-standing approach to calculating a fair return for application to a fair value rate base, and some alternatives to that approach. In the fourth and final section, I summarize my conclusions and recommendations.

Background

Q. Could you now briefly summarize the background of this proceeding?

A. This proceeding began on August 24, 2004 when Chaparral City Water filed an application for a rate increase. The Commission held a hearing on May 31 through June 8, 2005, and issued Decision No. 68176 on September 30, 2005 granting a rate increase to the Company. In its order, the Commission adopted an Original Cost Rate Base (OCRB) and a Reconstruction Cost New less Depreciation (RCND) Rate Base of $17,030,765 and $23,649,830, respectively. [Decision No. 68176, p. 9] With regard to Fair Value Rate Base (FVRB), the Commission found that "the average of the adjusted OCRB and RCND provides a reasonable measurement of the current value of the

Company's property dedicated to public service". [Id.] Based upon a 50/50 weighting, the Commission determined the Company's FVRB to be $20,340,298. [Id.]

Relying on Staff's cost of equity recommendation, the Commission determined Chaparral City's weighted average cost of capital (WACC) to be 7.6%. [Id., p. 26] In accordance with established precedent, the Commission multiplied the WACC by OCRB to determine the Company's operating income of $1,294,338. [Id., pp. 26-28] The Commission then divided operating income by FVRB to arrive at a fair rate of return of 6.36%. [Id., p. 28] The fair rate of return was then applied to the FVRB to determine operating income for rate making purposes.

Q. What was the Company's reaction to the Commission's decision?

A. Chaparral City submitted an Application for Rehearing of Decision No. 68176, alleging that the Commission's order was "contrary to law, arbitrary and unsupported by the evidence". [See, Remand Hearing Procedural Order, June 7, 2007, p. 1] The Company's Application for Rehearing was denied by operation of law. [Id.] Chaparral City subsequently filed an appeal with the Arizona Court of Appeals.

Q. Did the Court of Appeals address the Commission's methodology for determining a fair rate of return?

A. Yes. First, the court recognized that the Arizona Constitution gives the Commission "exclusive and plenary" authority to prescribe rates for public utilities within the state. [Chaparral City Water Company v. ACC, 1 CA-CC 05-0002, Memorandum Decision, p. 5] However, the court also noted that the state Constitution requires the Commission to

ascertain the "fair value" of the utility's property. [Id., p. 6]. Article 15, Section 14 of the Arizona Constitution states:

> The corporation commission shall, to aid it in the proper discharge of its duties, ascertain the fair value of the property within the state of every public service corporation doing business therein; and every public service corporation doing business within the state shall furnish to the commission all evidence in its possession, and all assistance in its power, requested by the commission in aid of the determination of the value of the property within the state of such public service corporation.

The court stated that this provision has been interpreted as requiring the Commission to determine the fair value of the utility's property, and to use that finding as the rate base in setting rates. [Id., citing Simms v. Round Valley Light & Power Co., 294 P. 2nd at 382] The court noted that the Arizona Constitution does not define fair value, but stated that it is "generally recognized as being based on both original cost and reproduction cost". [Id., p. 4, f.n. 4]

On appeal, the Company argued that operating income should be determined by multiplying the FVRB by the rate of return, and that "the rate of return is generally equal to a utility's weighted cost of capital". [See, Id., p. 7] The Commission responded by asserting that it was not bound to use the weighted average cost of capital as the rate of return to be applied to FVRB. The court agreed, stating:

> If the Commission determines that the cost of capital analysis is not the appropriate methodology to determine the rate of return to be applied to the FVRB, the Commission has the discretion to determine the appropriate methodology. [Id., p. 13]

The court also noted that "rates of return vary, depending upon the type of rate base used". [Id., p. 7, f.n. 5] However, the court found that the Commission's method for determining operating income ignored FVRB, in violation of the Arizona Constitution.

> Here, the Commission determined Chaparral City's operating income based on the OCRB and then mathematically calculated a corresponding rate of return had the income been based on the FVRB. Under this method, Chaparral City's operating income, and therefore its revenue requirements and rates, were based not on the fair value of its property, but on its OCRB, which does not comport with the Arizona Constitution. [Id., p. 12]

Accordingly, the court remanded the matter to the Commission for further determination.

Fair Value Rate Regulation

Q. Can you briefly discuss the history of the concept of "fair value" in the context of rate regulation?

A. During the early history of public utility regulation, federal and state commissions focused on the task of determining the "fair value" of a utility's property, which they used in determining reasonable rate levels for utility services. The fair value system of rate regulation (as distinguished from the more recent original cost-based system of rate base regulation) was endorsed by the United States Supreme Court in 1898. In *Smyth v. Ames,* the Supreme Court held:

> What the company is entitled to ask is a fair return upon the value of that

> which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth. [*Smyth v. Ames*, 169 U.S. 466 (1898).]

The focus on fair value, and its corresponding emphasis on reproduction cost and the current worth of the utility's property was due, at least in part, to distrust of the book cost information provided by utilities. At the time, standardized accounting did not exist. Questionable bookkeeping was almost certainly in the minds of the Justices when they chose to protect a property's "value" from confiscation, rather than relying upon the actual amounts invested in the property in determining whether or not confiscation was occurring. [See Goodman, Leonard, *The Process of Ratemaking*, 1998, p. 757.]

Q. Were there any problems with the Supreme Court's "fair value" doctrine?

A. Yes. Appropriately implemented, this is a reasonable basis for protecting customers from monopoly power, while also ensuring fair treatment of the utility's stockholders. When the fair value concept was applied in practice, however, some difficulties were discovered – due at least in part with the way the concept was being implemented. As one scholar has noted, this doctrine, with its reliance on the "the probable earning capacity of the property under particular rates prescribed by statute," can easily create a vicious circle, where valuation is dependent upon capitalization of earnings that are being set in a rate case, and those earnings depend in large part on the regulatory commission's finding of fair value.

> Early in the history of the fair-value doctrine, critics of the Supreme Court's decisions objected that the value of public utility properties,

> though acceptable for purposes of tax assessment or as a measure of compensation for a compulsory taking, cannot qualify as a valid rate base since this value necessarily depends on the earnings that the company will be permitted to derive therefrom - the very question at issue in a rate case. [Bonbright, James C., *Principles of Public Utility Rates*, 1988, p. 216.]

It was not just the potential circularity of the fair value approach to rate base regulation that drew criticism. Detractors also criticized the vagueness of the Supreme Court's instructions and the resulting difficulty in applying the doctrine in actual practice:

> The "fair value" method consists of an examination by the commission of evidence relating to reproduction cost and prudent investment, together with evidence of intangible values and observed condition of the property, the application of judgment whose processes defy analysis or description, and the selection of a final value figure which bears no derivative relation to any figure in evidence and no ascertainable relation to any functional purpose of ratemaking. [Kahn, Alfred, *The Economics of Regulation*, 1988, pp. 37-38, citing Lyon and Abramson, *Government and Economic Life* (1940).]

As well, problems were encountered when utilities traded property back and forth at ever escalating "values." The fundamental purpose of price regulation could potentially be defeated if the utility sold its property for a very high price and the buyer was allowed to recover the same percentage return on this higher value that had previously been received on a lower rate base value. Depending on how the "fair return" was computed, the very act of selling a utility's property at an inflated valuation would create evidence to justify higher rates, and thus a higher income stream, which in turn would make the inflated purchase price seem attractive to the buyer.

At the extreme, if the "fair return" is computed independently of the "fair value,"

the sale of utility properties at higher and higher inflated prices would eventually defeat the entire purpose of rate regulation. Absent a successful effort to solve the problem by ensuring that the "fair return" is truly "fair" to both customers and stockholders, the fair value method of regulation can easily lead to a spiral of ever-increasing property valuations, and correspondingly increasing rate levels.

Unless this problem is solved, utility rates can eventually escalate to a level approaching pure monopoly levels, defeating the core purpose of rate regulation, and greatly deviating from the goal of simulating the results of an effectively competitive market.

Q. In other jurisdictions have regulators tended to move away from the fair value methodology, in favor of some alternative approach?

A. Yes. The fair value method of ratemaking remained prominent during the first half of the twentieth century, but regulators in most jurisdictions increasingly shifted their focus to original cost information, which proved to be more reliable, easier to interpret, and less susceptible to problems. By 1944, the Supreme Court confirmed this trend, freeing state and federal regulators in most jurisdictions from any requirement to use a specific "fair value" formula when setting public utility rates. [*Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944)]

Q. Other than Arizona, are you aware of any states that continue to use the fair value methodology?

A. Aside from Arizona, I am not personally aware of any other states that currently use the

fair value approach. While the details can vary between rate cases and between jurisdictions, today the general approach followed by regulators is remarkably consistent across all, or nearly all, other jurisdictions. Regulators generally develop the rate base based on the original cost of the utility's property – in fact, they almost always rely on essentially the same set of accounting information, taken primarily from the left side of the utility's balance sheet.

While the provisions of the Arizona Constitution precludes this Commission from abandoning the fair value methodology, the unanimity, or near-unanimity of current practice in other jurisdictions (both state and federal) is certainly something to think about. At a minimum, it suggests that where a fair value rate base is employed, great care must be taken to avoid the potential for circularity, and to ensure that customers are treated fairly, and monopoly profits are precluded. More specifically, it is imperative to ensure that the return that is applied to the fair value rate base is, in fact a "fair" return – one that is fair to customers as well as stockholders, one that does not provide a windfall to utility stockholders, and one that does not defeat the core purpose of protecting customers from monopoly power.

Fair Rate of Return

Q. You have mentioned some United States Supreme Court decisions concerning rate base regulation. Were legal standards also established for determining a fair rate of return?

A. Yes. The comparability standard for determining the fair rate of return for a utility,

including the cost of equity capital, has been repeatedly upheld in Supreme Court decisions. In the landmark case, *Bluefield Water Works & Improvement Company v. Public Service Commission*, 262 U.S. 679, 692-93 (1923), the Supreme Court set forth the criteria for determining a fair rate of return for a utility:

> A public utility is entitled to such rates as will permit it to earn a return... equal to that generally being made... on investments in other business undertakings which are attended by corresponding risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economic management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties.

In *Hope*, guidelines were established to judge reasonableness of return. The Supreme Court held that:

> . . . it is important that there be enough revenue not only for the operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. [*Hope*, pp. 601-602.]

Q. Have regulators in most other jurisdictions settled on a common approach to determining the "capital costs of the business"?

A. Yes. In most – perhaps all – other state and federal jurisdictions it has long been accepted that the fair rate of return is that percentage figure which, when applied to the rate base, will yield in dollars the net operating income which the utility should have the

opportunity to earn. Stated another way, the key issue to be resolved is how much money the firm should be given an opportunity to earn – and the details of the rate base and rate of return calculations are vitally important intermediate steps on the way to resolving this key issue.

Similarly, it is generally agreed that the amount of dollars that the utility should be given an opportunity to earn should be largely, if not entirely, determined by a competitive market standard. In essence, the utility should be allowed to recover its actual cost of capital – a dollar amount that is approximately equivalent to the amounts being earned by other firm's on their investments of comparable magnitude, adjusted for any differences in risk.

In practice, this is another way of saying that the dollar amount which results from multiplying the rate of return by the rate base should be just sufficient to pay the jurisdictional portion of the utility's actual, prudently incurred interest costs and preferred stock dividends, and to provide a reasonable return on the portion of its common equity investment which is devoted to the public service in the jurisdiction in question.

In most jurisdictions, the mechanics of this process has become highly routinized. Regulators almost universally determine an appropriate rate of return by looking at the right side of the balance sheet to determine where the capital which is used to fund the assets shown on the left side of the balance sheet is coming from, and what this capital costs. The utility's capital structure (e.g., debt/equity ratio) is analyzed, along with the cost associated with each component of the capital structure.

This analysis includes not only the level of corporate debt but its time(s) to maturity, and the interest payments and other costs associated with the debt. In order to

determine an appropriate return on equity or profit level, regulators typically rely heavily on data concerning the historical performance of the stock market, along with other data, in an effort to arrive at a profit level (equity cost) reasonably consistent with those of comparable investments in other sectors of the economy.

Throughout this process, the focus is on accounting data (e.g. actual amounts owed to bond holders, actual amounts of equity invested in the firm), but considerable effort is made to ensure that the final result is fair to both stockholders and customers. Among other things, one of the techniques used is to verify that the resulting allowed return on equity is comparable to the returns that investors can expect to receive if they were to invest in an unregulated, competitive firm, or another utility – adjusted for any differences in risk. This is commonly referred to as the "weighted average cost of capital", with the understanding that the specific computations are closely tied to the firm's accounting records (balance sheet) while also taking into account data from the financial markets which is helpful in ensuring that the final "end result" is appropriate and consistent with the underlying competitive market standard.

Q. In its Appellate Reply Brief, the Company argued that "the determination of a utility's rate base and the estimate of the cost of capital are entirely independent of each other." Do you agree?

A. No – or at least they should not be purely independent in a properly functioning regulatory regime. As I explained earlier, the value of a utility's property is partly a function of the dollar amount of income that it generates. Thus, if the value and return concepts are developed independently, there is no assurance that the purpose of regulation will be

achieved, or that the return will be fair to both customers and stockholders.

Properly considered, the allowed return in percentage terms and the rate base should be developed in a consistent manner, so that the final end result is appropriate and reasonable. In most jurisdictions, regulators have shifted to a methodology that relies exclusively (or nearly so) on original cost data for developing the rate base. In turn, they develop the allowed rate of return based upon a weighted average cost of capital analysis that is specifically designed to maintain consistency with the original cost rate base – and to ensure that the overall final result provides the utility with an opportunity to earn (in dollars) an amount that is comparable to that which is earned by other utilities and unregulated firms, adjusted for any differences in risk.

I believe this accounting-oriented approach is a reasonable one which has generally been fair to both customers and stockholders. To better appreciate why I reach this conclusion, consider a simple thought experiment. Image a situation in which a regulatory commission suddenly decides, or is required, to adopt a new rate base methodology which results in a valuation that is twice as large as the original cost approach which had previously been used for many years. Under these circumstances, it would obviously be necessary to rethink the rate of return calculations. Unless the allowed rate of return in percentage terms is simultaneously slashed to a level that is somewhere in the vicinity of half the percentage rate that was previously being approved, the utility will suddenly experience a substantial increase in its income. If the same percentage rate were continued to be applied to the newly derived rate base amount, the end result would be to double the utility's income – resulting in a newly authorized income level that is approximately twice the level that would have previously been found to be

fair and reasonable, and a level that is roughly twice that being earned by other utilities and unregulated firms facing a comparable level of risk.

The final result of changing rate base valuation methods without rethinking the rate of return methodology would be a huge windfall for stockholders – one that is clearly not justified, assuming the prior methodology had generated an income level that was fair and reasonable. The fair return in dollar terms cannot suddenly double merely because regulators adopt a different rate base valuation methodology.

Clearly, the total dollars paid by customers to stockholders must be given some consideration, and the method used in developing a fair rate of return should be consistent with (not completely independent of) the methodology used in valuing the rate base. To maintain consistency with the core purpose of regulation, as well as applicable standard established by the United States Supreme Court, this Commission should recognize that the fair rate of return will appropriately change, depending on the methodology used in developing the rate base.[1]

Q. Can you provide additional support for your conclusion that value and return are not independent of each other?

A. Yes. Economists have long recognized that value and return are interrelated concepts, which cannot be viewed independently. The interrelationships between value and return are not only intertwined (not independent of each other), but they are often quite complex, and they interact with each other in several ways.

For example, the percentage return that an owner can expect (or buyers will

1 In fact, the Court of Appeals recognized that the rate of return can vary based on the type of rate base used. [Chaparral City Water v. ACC, f.n. 5, p. 5]

1 require) to receive from an office building, apartment complex, or other real estate
2 investment will partly depend on the method used in estimating the value of the building.
3 Is the "value" of the building estimated based on reproduction cost, replacement cost,
4 historical cost, or some other methodology? For any given level of anticipated rental
5 income, the computed percentage rate of return will vary, depending on how the
6 denominator is computed – what measure of "value" is being used.

7 But, that is not the only way in which rates of return and values are intertwined.
8 Consider, for instance, the concept of "market value". In a real estate context, when
9 speaking of the "value" of a particular piece of investment property, the reference is
10 frequently to the current fair market value, which is the price that would be paid by a
11 willing buyer to a willing seller, where neither party is under any undue pressure to
12 complete the transaction. The market value of property is heavily influenced by the
13 income or cash flow the property is currently generating, as well as the future stream of
14 income or cash flow which is anticipated – along with changes in the market value which
15 can be anticipated in the future. Thus, not only is market value not independent of the
16 return, it is a direct function of the return (among other things).

17 For instance, the market value of an office building will be largely determined by
18 the return (in dollars) which can be obtained by renting it (assuming that is the highest
19 and best use of the property). In the case of an office building or other rental property,
20 the most important factor controlling the market value is simply the anticipated future
21 level of rents (aside from the anticipated price at which the property could be sold in the
22 future – which is also typically a function of the rent). Thinking about this example, it
23 becomes clear that income stream from rent (in dollars) is an important consideration that

helps to determine the market value of investment properties.

In turn, the anticipated percentage rate of return is largely a function of the market value. In essence, the percentage rate of return is simply the ratio computed by dividing the anticipated, levelized stream of future cash flows by the value; hence, the percentage return is dependent on (not independent of) the value. The calculated percentage will differ depending on whether the market value is high or low. Over time, however, rates of return will tend to move toward an equilibrium level, consistent with the applicable level of risk.

If returns are unusually high, rents will be driven down (as the supply of office buildings increases), or market values will be driven up as more investors enter the market, seeking to benefit from the unusually high returns. Or, both may occur -- income may decline and values may increase, until the returns move back to a more normal level.

Similarly, if returns are unusually low, they will eventually improve, as a result of a gradual tightening of the rental market, as existing office buildings are converted to other uses and relatively few new buildings are constructed. As well, if returns are not adequate, property values may decline – or at least not keep pace with the overall rate of inflation, so that over time, the rates of return move back toward a more normal, equilibrium level.

From this example, it should be clear that in competitive markets values and returns are not independent of each other, and in fact they are closely intertwined in multiple, subtle ways. If an office building's design, location, and other factors are desirable enough to allow relatively high rents to be charged, and thus a high dollar level of return to be earned, then the building's market value will be relatively high. In contrast,

if the building is a less attractive investment, with low rents or high expenses, then the market value of the building will be tend to be relatively low. In general, the market value of investment property is determined largely by the return (in dollars) which can be expected on that property, the riskiness associated with that expected return, and the analogous returns being earned by other investors and generally available elsewhere in the economy.

Accordingly, for a given level of riskiness, an investment yielding relatively high returns will have a high economic or market value, while an investment yielding relatively low returns will have lower returns. These general interrelationships between value and return apply throughout the economy. However, the relationships are rarely simple in actual practice, so that careful analysis is often required to understand how these general principles are working in specific situations.

Q. A fair value cost valuation tends to be higher than an original cost valuation, because it reflects the impact of inflation and other factors which tend to contribute to an upward growth in value over time. Does this difference have any implications for the percentage rate of return which is appropriate in the context of original cost or replacement cost property values?

A. Yes. Economists have long recognized that inflation and other factors which increase the value of an investment will significantly impact an investment's expected return. In turn, these factors affect the present value of the investment. To fully understand this relationship, it is necessary to realize that growth in the value of an investment is a component of the total return achieved by the investor. Indeed, for many so-called growth

stocks which pay little or no dividends, virtually the entire return received by the investor results from growth in the market value of the stock (capital gains). The same principle applies to the value of rental property in areas where real estate prices (and/or rents) are escalating – investors will take into account the anticipated growth in the value of their investment – similar to the way growth stocks are evaluated.

Similarly, if the income being generated by a particular investment is expected to grow over time (e.g. rents are increasing), that will tend to push up the current market value of an investment. Investors will accept a lower current return from an investment, if they have reason to believe the return will increase over time.

The current market value of an investment is determined by the net effect of multiple factors, including the current annual income or return (in dollars), expected changes in that income or return, and expected changes in the value of the investment. Thus, real estate investors in areas where demand is growing will often purchase property with an extremely low or negative current cash return, because they anticipate profiting from future growth.

Similarly, investors might construct a new office building, despite the fact that the rent payments during the first few years will actually be less than their direct expenses (interest, utilities, taxes, etc.), indicating a negative current level of return – if they expect rents, and/or the value of the property, to increase sufficiently in the future. Investors take into account all aspects of anticipated returns, including past and future trends in market rents, as well as anticipated growth in the value of the building. If the growth expectations are strong enough, investors will accept extremely low or negative returns during the early years, because they anticipate earning an adequate return over the entire

life cycle of their investment.

Q. Are there certain economic principles the Commission should bear in mind in determining the percentage rate of return which would be fair and reasonable to apply to a fair value rate base which relies, in part, on reproduction cost data?

A. Yes. As with any investment, one component of the total return received by utility investors is growth in the value of their investment. If the value used for rate base purposes is exclusively tied to original cost, investors are in a fundamentally different situation than if the rate base grows over time, as a result of increases in the replacement cost. As with the competitive market examples we've been discussing, the current rate of return should logically be lower if the value of the rate base is increasing over time (and thus, income is growing over time, as the replacement cost increases).

The fair value approach is more complex than the original cost approach because it involves both the fair value rate base and the fair rate of return as variables to be determined in the rate proceeding. In other regulatory jurisdictions, where regulators rely upon the original cost method of rate base valuation, they focus their attention on determining an appropriate rate of return to use with that valuation methodology. In those jurisdictions regulators can achieve the goals of regulation, and investors can be provided with a fair and adequate return (in dollars), without necessarily having to go through the exercise of analyzing replacement costs, or determining the current fair market value of the utility's property.

In this regard, it is important to realize that there is widespread agreement concerning the economic purpose of rate regulation, as well as the basic standards which

should be used in judging how well the goal of regulation is being achieved.

Most theorists agree that the primary objective of regulation was, and still is, to produce results in the utility sectors of the economy which parallel those that would be obtained under conditions of competition. The results of maximum efficiency and equity, existent under competition, have long been a primary justification of America's free enterprise or market-directed economy. Most economists recognize that competition does not predominate in our economy; yet most accept the results of competition as an ideal toward which we should strive. It is only natural that in the utility sector of the economy, where government controls the market results, the standard established for regulation has traditionally been the results which would be achieved under competition.

Whether explicitly or implicitly, regulators have generally accepted this competitive standard, concluding that appropriate rate levels will provide a well-managed utility the opportunity to recover all of its necessary costs, including an adequate return on the capital employed, and they will prevent the firm from earning excessive returns – the type of returns that are normal for unregulated firms with a substantial degree of monopoly power. Under this competitive standard, a specific utility may recover less than its full costs or more than its full costs in the short run, but over a longer period of time the utility's total costs can generally be expected to approximately equal its total revenues, where the definition of "costs" includes a normal return on the actual capital invested in the firm.

Succinctly stated, the general economic goal of utility rate regulation is to provide an opportunity for an efficiently managed utility to recover its full costs, including a fair (or normal) return on its capital – but it is generally precluded from earning profits in

excess of a normal return. When rates are adopted in accordance with this objective, the result will be an equitable and efficient balance between the interests of the utility and its investors, and the interests of the utility's customers. Such a balance occurs naturally in the world of competition, and is clearly a desirable goal for regulation in the public interest.

Q. The Company implies that the "fair rate of return" for application to a fair value rate base should be the same percentage figure that would be applied to an original cost rate base. Do you agree?

A. No. The same percentage figure cannot be appropriate for application both to the original cost and to the replacement cost of the utility's property – unless these two cost measures happen to be nearly the same. If regulation is going to achieve reasonable consistency with the competitive market standard, at least over the long term, investors in utilities should be provided an opportunity to earn an equivalent amount to what they could earn by investing a comparable amount in a competitive enterprise (adjusting for any differences in risk).

Given the validity of this competitive market standard, the appropriate compensation to utility investors as a whole cannot vary widely, merely on the basis of differences whether the rate base is computed using original cost, reproduction cost, or some other methodology (e.g. current fair market value).

In its Appellate Reply Brief, the Company argued that "the rate of return was applied to the wrong rate base," implying that the Commission should apply the weighted average cost of capital, derived using the standard methodology used in other

jurisdictions for application to an original cost rate base, but applying that same percentage figure to the fair value rate base. For the reasons I have just stated, this would clearly not be appropriate.

Q. Are you suggesting that the exact same income must be provided to any given utility in any given year, regardless of whether a fair value rate base or an original cost rate base is used?

A. No, I'm not suggesting that. To the contrary, differences can exist for a specific utility during a specific time period – provided the end result over a the long term is still reasonable, on average, for both investors and customers. For instance, there could be significant differences in the time pattern of the returns provided to investors depending on the rate base valuation methodology. Lower returns might be provided to a given investment pursuant to the methodology which allows value to increase over time, since higher dollar returns will eventually be provided, as the value increases over time. This is similar to what happens in competitive markets, where growth companies initially tend to generate negative returns, or very low returns, but if they are successful, their returns eventually grow to much higher levels, thereby ensuring an adequate income over the long term.

When viewed in this way, it is apparent that a valid finding of the fair rate of return will depend in part on the method used in calculating the rate base. This key premise is consistent with the statement of the Appellate Court that "[r]ates of return vary, depending upon the types of rate base used".

If an original cost rate base is used, the fair rate of return will generally be

computed based upon a composite, or weighted average, of the utility's cost of debt, preferred stock, and equity, with each of these cost rates being calculated with reference to amounts recorded in the utility's accounting records – all of which is directly comparable to the original cost valuation concept.

To the extent an appropriate percentage figure is developed using this process – one that would meet the competitive market standard if applied to an original cost rate base – there is no reason to assume that the same percentage figure can appropriately be applied to a fair value rate base which is grows over time, and is intended to reflect current values (including the impact of inflation). To the contrary, if the fair value rate base is higher than the original cost rate base, and that value is expected to continue to escalate in the future (e.g. due to inflation), a lower percentage rate would be appropriately applied to the fair value rate base. The direction of the difference is obvious – the only question to be pondered is how much lower.

Consider, for example, the utility's interest cost. If the utility has borrowed $500, with an embedded interest cost of 8%, then the utility's interest costs will average $40 per year, and it should be given an opportunity to recover that cost, regardless of how the rate base is calculated.

If an original cost approach is used in calculating the rate base and the firm has no other sources of income or non-utility operations, this result will typically be achieved by applying a weighted average cost of capital to the rate base, such that the utility is given an opportunity to recover this $40 per year of interest expense – no more and no less. If a growing rate base valuation is used, the utility should still be given an opportunity to recover it's actual interest costs – and there is no obvious reason why it should be allowed

to recover more than its actual interest expense. In any event, for any given level of capital costs, those costs can be recovered using a lower percentage figure if the rate base valuation is growing over time (e.g. due to inflation).

Q. In its Appellate Brief, RUCO argued that it would not be fair to apply a typical cost of capital to the fair value rate base because this would result in a "double counting" of inflation. In its Appellate Reply Brief, the Company responded by arguing that "This argument erroneously assumes the only reason [the] current value of property is higher than the property's original cost is inflation." Would you please comment?

A. RUCO's argument requires no such assumption. To the extent inflation is one of the factors influencing the fair value rate base (and it certainly is), the concern about potential double counting arises. That concern is valid regardless of whether or not inflation is the only factor contributing to the difference between original cost and reproduction cost.

The significance or magnitude of the concern will certainly increase, as the significance of inflation increases, but there is no need to assume that inflation is the only factor contributing to the increase in fair value – or even for inflation to be the most important factor.

But, in practice, inflation actually is a major factor which helps to explain why replacement cost tends to exceed original cost, thereby increasing the fair value amount. In fact, the RCND study is developed by applying plant-specific inflation indices to utility-specific account balances. Therefore, in actual practice, industry-specific inflation rates are one of the most important factors causing the fair value to exceed original cost.

Alternative Fair Rate of Return Methodologies

Q. Can you describe the Commission's traditional approach to calculating the allowed operating income and revenue requirement?

A. As it did with Chaparral City Water Company, the Commission traditionally starts with the weighted average cost of capital and rate base developed using the utility's accounting data. Thus, it has traditionally started with the same rate base and cost of capital calculations used by most, if not all, other regulatory commissions. Then, however, it has taken the resulting allowed operating income and divided that dollar amount by the FVRB, to obtain a lower percentage figure. The latter figure was used as the fair rate of return for application to the FVRB.

This rate of return effectively produced the same allowed operating income and revenue requirement as would be developed in other jurisdictions, while developing the final calculations using the fair value rate base.

Q. Is this the approach that was rejected by the Appellate Court?

A. Yes. As I explained at the start of my testimony, the court noted that the Arizona Constitution requires the Commission to use the fair value of the utility's property as the rate base in setting rates. The court also noted that the "purpose of the fair value requirement is to provide a fair return on the fair value of the property that a public utility devotes to public use." [Decision No. 68176, p. 6, citing Ariz. Corp. Comm'n v. Ariz. Water Co., 85 Ariz. 198, 203]

In its Appellate Reply Brief, the Company argued that under the methodology

previously used by the Commission, "the fair value of the Company's utility plant had nothing to do with determining its revenue requirement." The Appellate Court agreed, stating:

> [T] Arizona Constitution and prior case law compel the conclusion that the method employed by the Commission to determine the operating income in this case did not comport with constitutional requirements. [Id., p. 11]

More specifically, the court held that under the Commission's traditional approach, as described above, "Chaparral City's operating income, and therefore its revenue requirements and rates, were based not on the fair value of its property, but on its OCRB, which does not comport with the Arizona Constitution." [Id., p. 12]

The court further concluded that rates cannot be based on the investment made in plant, "but must be based on the fair value of the utility's property". [Id., p. 13] The process by which the Commission divides the OCRB operating income by FVRB and then multiplies the result by FVRB was described by the court as a "superfluous mathematical exercise" and "inconsistent with Arizona law." [Id., p. 14]

Q. Have other parties proposed any methodologies which would ensure that the fair value is not a "superfluous mathematical exercise" -- so that the fair value determination actually impacts the revenue requirement and final rates?

A. Yes. One alternative is the approach used by the Company in its July 6, 2007 Amended Notice, in which it took the weighted average cost of capital which would normally be

applied to OCRB, and it simply multiplied that percentage figure by the FVRB. [See, Chaparral City Water Company's Amended Notice of Filing Revised Schedules of Rates and Charges for Utility Service, Remand Schedule A-1] If the Commission were to adopt the Company's proposed alternative, it would result in allowed operating income of $1,545,863 (7.6% X $20,340,298).

A second alternative was presented by Staff in testimony involving another Arizona utility, in Docket No. G-04204A-06-0463. In that testimony, filed subsequent to the Appellate Court's decision, Staff argued that "the differential between fair value rate base and original cost rate base is not financed with investor-supplied funds...." [Surrebuttal Testimony of David C. Parcel, p. 9] Following this line of reasoning, Staff argued that "it is logical and appropriate to assume that this excess has no cost." [Id.] Staff further explains:

> As a result, the cost of capital, through the capital structure, can be modified to account for a level of cost-free capital in an equal dollar amount to the excess of fair value rate base over the original cost rate base. Such a procedure would still provide for a return being earned on all investor-supplied funds and thus be consistent with financial and regulatory standards. [Id.]

As shown in the table below, if the same methodology were applied in this proceeding it would result in operating income of $1,323,019.

ACC Staff Proposed Methodology:

Cost of Capital	Amount	Weight	Cost	Weighted Cost
Debt	$8,363,309	35.5%	5.10%	1.81%
Equity	$11,901,727	50.5%	9.30%	4.70%
Appreciation Above OCRB	$3,309,533	14.0%	0.00%	0.00%
Total	$23,574,569	100.0%		6.50%
FVRB				$20,340,298
Resulting Allowed Operating Income:				$1,323,019

Q. Is there another methodology available, that also ensures that the fair value is not a "superfluous mathematical exercise" and which ensures that the fair value rate base determination impacts the revenue requirement and final rates?

A. Yes. As I explained earlier, the allowed return in percentage terms and the rate base should be developed in a consistent manner. In jurisdictions where the rate base is entirely based on original cost data, it is common practice to apply a rate of return which is based upon the weighted average cost of capital, derived in large part using accounting data (e.g. debt and equity amounts; embedded interest rates). In contrast, where the rate of return will be applied to the current value of the utility's property, a somewhat lower return would be fair – one that provides the utility with an opportunity to recover its actual capital costs, without overcompensating for inflation.

A rate of return that is fair to both customers and stockholders can be derived from the weighted average cost of capital by simply subtracting an amount related to the rate of inflation. For example, assume the weighted average cost of capital is 7.50%, and the relevant inflation rate is 2.5%, then a fair return on the fair value rate base would be

5.00%, or thereabouts.

Since the dollar magnitude of the fair value rate base is larger than an original cost rate base, reflecting past growth in the value of the utility's property, and since the future income stream can reasonably be expected to increase in the future, due to inflation and other factors which tend to push up property values as time passes, a 5.00% return on fair value is likely to provide investors with as large a total return (over time) as a 7.50% return applied to an original cost rate base. The exact amounts received by investors may differ somewhat, and they certainly will differ during any specific year, but the key point is that investors will have as strong an opportunity to recover their capital costs and to earn a competitive return through the application of a 5.00% return on fair value as with a 7.50% return on original cost. The regulatory goal of simulating the effects of competitive markets can be achieved either way.

It is worth noting that this methodology can soundly be applied to a rate base amount which reflects current property values; it would not necessarily yield a reasonable result if it were applied to a rate base amount that was equal to reproduction costs – because the latter figure tends to overstate the impact of inflation, and it does not accurately measure changes in property values over time. The Commission found in Decision No. 68176, "the average of the adjusted OCRB and RCND provides a reasonable measurement of the current value of the Company's property dedicated to public service". [Decision 68176, p. 9]

It's more appropriate to estimate current value using a blend of original cost and replacement cost, because RCND standing alone would tend to significantly overestimate market value, because it does not adequately take into account the impact of changes in

technology, changes in the mix of inputs used in the production process, and other factors which have the net effect of ameliorating the impact of price increases, thereby slowing the rate of growth in the value of existing assets, and slowing the actual rate of inflation.

Q. Can you explain in greater detail why a fair rate of return applied to a fair value rate base is less than the return which would normally be applied to an original cost rate base?

A. If the return is going to be fair to customers as well as to stockholders, it must be lower than the weighted average cost of capital. As I explained earlier, the same percentage figure cannot be appropriate for application to both the original cost and to the replacement cost of the utility's property, unless these two cost measures happen to be nearly the same.

Another way of seeing why this conclusion is valid is to note that the competitive market standard is widely accepted as the appropriate standard for utility regulation in nearly all jurisdictions, regardless of whether they use original cost or fair value in developing their rate base calculations. Utilities in Arizona and other states are all competing for investment capital that is being provided in a national market. If the same percentage rates of return were applied to fair value rate bases in Arizona as are applied to original cost rate bases in all other jurisdictions, it is self evident that Arizona investors would be overcompensated.

If the weighed average cost of capital were applied to the fair value rate base, Arizona utilities would be provided with an opportunity to earn windfall profits, in comparison with the treatment of utilities in other states, where firms are only given the

1 opportunity to earn a normal, competitive return (as required by the United States
2 Supreme Court in the Hope Natural Gas case).
3 While the Arizona Constitution requires use of a fair value rate base, and that may
4 influence the specific rate of compensation provided to any specific utility during any
5 specific year, it is not necessary or appropriate to provide Arizona utilities with earnings
6 that consistently exceed those earned, on average, by utilities in other states (or which
7 consistently exceed the earnings of the average unregulated firm which operates in
8 competitive markets, adjusted for differences in risk). Yet just such a consistent
9 differential would occur if the same rate of return were applied to fair value in Arizona
10 and to original cost in other jurisdictions.
11 Aside from differences in risk, the long term average compensation provided to
12 utility investors in Arizona should be roughly equivalent to that paid to investors in other
13 enterprises – assuming comparable levels of risk. Investors in Arizona and in other states
14 should all be given a reasonable opportunity to earn a normal return – a return which is
15 consistent with competitive market levels.
16 I made that last statement in terms of the long term average, because there could
17 be differences in timing, due to differences in the rate base valuation methodology. The
18 return on investment provided in a fair value rate jurisdiction might be somewhat lower
19 in the initial years, and higher in the later years of any given investment, relative to the
20 timing of the returns received in an original cost jurisdiction, just as investors in growth
21 stocks receive more of their return in later years, as dividends increase, or upon sale of
22 the stock. While the year-to-year pattern of cash flows might differ somewhat depending
23 on the specific rate base methodology, the overall long term average level of

compensation paid to investors should be very similar, regardless of whether the rate base is based upon original cost, or fair value.

Consistent with this line of reasoning, it is clear that the appropriate magnitude of the difference between the appropriate rate of return in an original cost jurisdiction and the fair rate of return in a fair value jurisdiction is closely related to the rate of growth in the utility's fair value rate base relative to the original cost of its property. The more rapidly fair value is growing relative to original cost, the less need there is to immediately provide a high level of current income in the form of high percentage return for application to the fair value rate base. This is exactly what we observe in the stock market, where investors are satisfied with relatively lower levels of current income and dividends in growth industries, where the value of the stock and the anticipated future level of dividends are expected to grow over time.

Q. You mentioned earlier that reproduction cost tends to overstate the current value of property. Can you please briefly elaborate on this point?

A. Yes. Reproduction cost provides an estimate of the material, labor, overhead and other costs that would be incurred today if the existing property were installed today, using the same design, the same technology, and the same choice of materials as the original. Reproduction cost ignores all the changes and improvements in materials, technology and construction techniques that have occurred since the property was originally constructed. It assumes that the property will be constructed and placed in service using the same materials and processes that were originally used.

Needless to say, no one would actually reproduce an existing system, since this

would not be a prudent course of action. For instance, given current knowledge of the actual location and mix of customers, it would be feasible, and more cost effective, to build a system with a different design – one that more closely fits the actual needs of customers, as they have actually evolved over time.

Similarly, anyone wanting to build a new system in the most cost effective manner possible would take advantage of new technologies, which weren't available, or weren't as well established, or weren't as cost effective at the time the existing system was designed and built. Similarly, anyone building a system from scratch would install a different mix of plant and equipment, using different construction techniques, in order to take into the optimal mix of inputs based on current relative price levels. If a steel water main was installed along a particular route 20 years ago, an RCND study will calculate the cost of placing a new steel main along that same route. Yet, given current price levels and technology, it might be more logical and cost effective to install a plastic main, running along a shorter, more efficient route. Years ago, it might have been necessary to use backhoes and a lot of manual labor to dig trenches and install pipes; today it might be feasible to accomplish the same goal using high tech construction equipment which is much faster, less labor-intensive, and ultimately less costly.

Investors recognize these realities, and thus the current fair market value of an existing system will normally be substantially less than reproduction cost As I explained earlier, "fair" or "current" value can be considered the price that would be paid by a willing buyer to a willing seller, where neither party is under any undue pressure to complete the transaction. In a competitive market, a buyer will typically not pay more for property than the amount to build or acquire similar assets that are functionally

equivalent to that property.

Thus, the current value is not going to exceed the amount necessary to replace the original property taking into account current relative price levels, technologies, and available efficiencies. This value considers the impact of inflation relative to the original cost of the property, but unlike reproduction cost, it does not systematically overstate value, nor does it overstate the impact of inflation.

Q. What inflation factor should the Commission use to determine a fair rate of return for application to a fair value rate base?

A. This is a matter of judgment; the Commission can exercise sound discretion in determining the most appropriate inflation factor to subtract from the weighted average cost of capital.

In making this decision, I recommend that the Commission review and consider several of the data series that are publicly available. In particular, I recommend the Commission consider the data published by the Bureau of Labor Statistics for the annual rate of change in the Gross Domestic Product Deflator, as well as annual changes in consumer prices and various measures of producer prices. The following table summarizes historical changes in each of these inflation measures.

Shown are average annual changes in the Gross Domestic Product Implicit Price Deflator (GDP Deflator); the familiar Consumer Price Index or CPI for "all consumer items"; the Producer Price Index, or PPI, for "all commodities"; the analogous PPI for "finished goods"; and, the PPI for Materials and Components for Construction. The length of time for which these series are available varies from index to index. For

example, the GDP Deflator, the CPI-All Items and the PPI-All Commodities are available from 1929 to date. The PPI-Finished Goods and the PPI-Materials and Components for Construction date back to 1947. However, I believe the more recent historical data is more relevant in this present context, and so I have only included data for the period from 1975 through 2006.

The annual change in any one measure of inflation can vary widely from one year to the next; as well there are variations between the various data series. However, by calculating averages over extended time periods, it is readily apparent that the average rate of inflation tends to fluctuate in a much tighter range, and that the differences between these various inflation measures are not extreme.

Date Range	Gross Domestic Product Inplicit Price Deflator	CPI Consumers, All Items	PPI All Commodities	PPI Finished Goods	PPI Materials and Components for Construction
1975-2004	3.9%	4.6%	3.5%	3.6%	3.8%
1977-2006	3.6%	4.3%	3.4%	3.3%	3.7%
1980-2004	3.2%	3.9%	2.6%	2.7%	2.8%
1982-2006	2.8%	3.2%	2.1%	2.1%	2.7%
1985-2004	2.4%	3.0%	1.8%	1.8%	2.3%
1987-2006	2.5%	3.1%	2.6%	2.2%	2.8%
1990-2004	2.2%	2.9%	1.8%	1.8%	2.2%
1992-2006	2.2%	2.7%	2.4%	1.9%	2.8%
1995-2004	1.9%	2.5%	2.0%	1.7%	2.0%
1997-2006	2.2%	2.5%	2.6%	2.0%	2.8%
2000-2004	2.3%	2.5%	3.2%	2.2%	2.3%
2002-2006	2.6%	2.6%	4.2%	2.7%	4.6%

In the table above, I calculated averages for 12 different time periods. The averages include time periods of 30 years, 25 years, 20 years, 15 years, 10 years, and 5

years ending in 2004 and 2006. As shown, these averages range from as low as 1.71% for the PPI-Finished Goods during 1995-2004, to 4.6% for the PPI-Materials and Components for Construction during 2002-2006. I believe this provides a reasonable overall range of inflation rates for the Commission to consider in establishing the fair rate of return to apply to Chaparral's fair value rate base.

Q. All of this data is historical. Should the Commission also consider expectations regarding future levels of inflation?

A. Yes, although the most logical starting point is to consider historical inflation data. The historical data series are some of the best, most detailed and most objective information available for estimating future inflation rates – and this information is certainly relevant – investors will often assume the future will be similar to the past, while also realizing that some differences will occur, due to changes in monetary policy, fluctuations in the business cycle, and other changes over time. However, expected future inflation rates are also of vital importance in this context, so it is appropriate to consider a forward looking view of inflation, as well as considering the inflation which contributed to increases in the current value of the utility's property.

Q. Are you aware of any published data series that are indicative of the future inflation rate expectations of investors?

A. Yes. A useful measure of investor inflation expectations can be derived by comparing the yields on Treasury Inflation-Protected Securities (TIPS) and other securities issued by the Treasury Department with similar liquidity and duration. TIPS are bonds issued by the

U.S. Treasury which are sometimes called "linkers", because they are "linked" to the actual rate of inflation.

TIPS are issued twice a year, in January and July. The principal amount that is paid back to the holder upon maturity is periodically increased, based on the CPI-All Consumer Items. Like most government bonds, the TIPS coupon rate (percentage return) is constant, but these particular securities are unique because they generate an increasing flow of interest payments. TIPs pay interest twice a year, based upon a fixed rate that is multiplied by the inflation-adjusted principal. The end result is that investors are protected against inflation both with respect to the value of their investment, and with respect to the income they receive.

Thus, for example, if the interest rate on a TIP Security is 5%, its cost is $100, and cumulative total amount of inflation from the time of issuance until maturity is 20%, the value of the investment would increase to $120 at maturity. The 5% interest rate would be applied to the increasing principal amount, eventually reaching the level of 5% of $120 – approximately 20% more than the initial payment level.

At maturity, the securities are redeemed at the greater of their inflation-adjusted principal or the original par amount at the time they were issued. TIPS provide yet another example that illustrates one of the key points in my testimony – that the percentage rate of return earned by an investment that grows in value over time will normally be lower than the analogous return paid on an investment that does not grow over time. The fact that these securities offer significantly different percentage returns is further proof of this fundamental point. But, these securities are also of interest because they provide useful insights into investor expectations concerning inflation.

It is well established in the academic literature that the difference between the yield on a TIP and the yield on a comparable government security that is not linked to inflation can be used to estimate investors' future inflation expectations. For example, on January 18, 2007, the 10-Year Treasury yielded 4.75% while the 10-Year TIP yielded 2.47%, leaving a spread of 2.28%. This differential, or spread, is one measure of the expected annual rate of inflation over the next 10 years, as of January 18, 2007.

In the following table, I present average daily yields on 10 year TIPs and average yields on analogous bonds, for the years 2001 through 2007. I have also calculated the average differences in the yields for the two types of securities. As shown, the average differences range from a low of 1.70% in 2001, to a high of 2.90% in 2004. Averaging the annual averages results in an overall expected future inflation rate of 2.34% over the most recent 6.5 years.

Year	Value TIPS	Value Bond	Difference
2001	3.32	5.02	1.70
2002	2.84	4.61	1.78
2003	1.81	4.01	2.21
2004	1.37	4.27	2.90
2005	1.53	4.29	2.76
2006	2.25	4.79	2.54
2007	2.31	4.80	2.49
Average	2.20	4.54	2.34

Conclusions and Recommendations

Q. What methodology do you recommend the Commission use to establish a fair rate of return in this proceeding?

A. First and foremost, I recommend the Commission reject the Company's proposal to simply apply the same rate of return to the fair value rate base that would normally be applied to an original cost rate base. As I have explained, this would not be fair to customers, and it would undermine the core purpose of regulation, which is to protect customers from monopoly power.

In my opinion, either of the other two approaches I have described in my testimony would be superior to the Company's proposal. The Staff approach appears to provide a fairly reasonable result, at least when applied in this proceeding. On balance, however, I believe the third method I describe – subtracting an inflation factor from the weighted average cost of capital – is the best alternative. Hence, I recommend the Commission adopt this approach – or at least give it considerable weight, along with the Staff approach, in arriving at its final judgment concerning the fair rate of return to use in this proceeding.

Q. If the Commission adopts your recommendation, what would be a reasonable inflation rate to be used as an offset to the weighted average cost of capital?

A. As this is a case of first impression, I recommend the Commission choose an inflation rate that is conservative – one that falls toward the low end of the historical data, and the recent level of investor expectations concerning future inflation rates. More specifically,

I recommend the Commission use an inflation factor of 2.0% in developing the fair rate of return in this proceeding.

Q. What is the result of applying a 2.0% reduction to the weighted average cost of capital?

A. As shown in the table below, applying a 2.0% adjustment factor to the weighted average cost of capital results in a fair rate of return of 5.60% (rounded). This is .80% lower than the return that was developed earlier in this proceeding, using the Commission's traditional methodology. Applying this fair rate of return to Chaparral's fair value rate base results in an allowed operating income level of $1,132,278.

Alternative Methodology

Cost of Capital	Amount	Weight	Cost	Weighted Cost
Debt	$8,363,309.00	41.27%	5.10%	2.10%
Equity	$11,901,727.00	58.73%	9.30%	5.46%
Total	$20,265,036.00			7.57%
Inflation factor:				2.00%
Fair Rate of Return				5.57%
Fair Rate of Return (Rounded)				5.60%
Resulting Allowed Operating Income:				$1,132,278

Q. Does this conclude your direct testimony, prefiled on August 30, 2007?

A. Yes, it does.

Appendix A

Qualifications

Present Occupation

Q. What is your present occupation?

A. I am a consulting economist and President of Ben Johnson Associates, Inc.®, a firm of economic and analytic consultants specializing in the area of public utility regulation.

Educational Background

Q. What is your educational background?

A. I graduated with honors from the University of South Florida with a Bachelor of Arts degree in Economics in March 1974. I earned a Master of Science degree in Economics at Florida State University in September 1977. The title of my Master's Thesis is a "A Critique of Economic Theory as Applied to the Regulated Firm." Finally, I graduated from Florida State University in April 1982 with the Ph.D. degree in Economics. The title of my doctoral dissertation is "Executive Compensation, Size, Profit, and Cost in the Electric Utility Industry."

Clients

Q. What types of clients employ your firm?

A Much of our work is performed on behalf of public agencies at every level of government involved in utility regulation. These agencies include state regulatory commissions, public counsels, attorneys general, and local governments, among others.

We are also employed by various private organizations and firms, both regulated and unregulated. The diversity of our clientele is illustrated below.

Regulatory Commissions

Alabama Public Service Commission—Public Staff for Utility Consumer Protection
Alaska Public Utilities Commission
Arizona Corporation Commission
Arkansas Public Service Commission
Connecticut Department of Public Utility Control
District of Columbia Public Service Commission
Idaho Public Utilities Commission
Idaho State Tax Commission
Iowa Department of Revenue and Finance
Kansas State Corporation Commission
Maine Public Utilities Commission
Minnesota Department of Public Service
Missouri Public Service Commission
National Association of State Utility Consumer Advocates
Nevada Public Service Commission
New Hampshire Public Utilities Commission
North Carolina Utilities Commission—Public Staff
Oklahoma Corporation Commission
Ontario Ministry of Culture and Communications
Staff of the Delaware Public Service Commission
Staff of the Georgia Public Service Commission
Texas Public Utilities Commission
Virginia State Corporation Commission
Washington Utilities and Transportation Commission
West Virginia Public Service Commission—Division of Consumer Advocate
Wisconsin Public Service Commission

Wyoming Public Service Commission

Public Counsels

Arizona Residential Utility Consumers Office
Colorado Office of Consumer Counsel
Colorado Office of Consumer Services
Connecticut Consumer Counsel
District of Columbia Office of People's Counsel
Florida Public Counsel
Georgia Consumers' Utility Counsel
Hawaii Division of Consumer Advocacy
Illinois Small Business Utility Advocate Office
Indiana Office of the Utility Consumer Counselor
Iowa Consumer Advocate
Maryland Office of People's Counsel
Minnesota Office of Consumer Services
Missouri Public Counsel
New Hampshire Consumer Counsel
Ohio Consumer Counsel
Pennsylvania Office of Consumer Advocate
Utah Department of Business Regulation—Committee of Consumer Services

Attorneys General

Arkansas Attorney General
Florida Attorney General—Antitrust Division
Idaho Attorney General
Kentucky Attorney General
Michigan Attorney General
Minnesota Attorney General
Nevada Attorney General's Office of Advocate for Customers of Public Utilities
South Carolina Attorney General

Utah Attorney General

Virginia Attorney General

Washington Attorney General

Local Governments

City of Austin, TX

City of Corpus Christi, TX

City of Dallas, TX

City of El Paso, TX

City of Galveston, TX

City of Norfolk, VA

City of Phoenix, AZ

City of Richmond, VA

City of San Antonio, TX

City of Tucson, AZ

County of Augusta, VA

County of Henrico, VA

County of York, VA

Town of Ashland, VA

Town of Blacksburg, VA

Town of Pecos City, TX

Other Government Agencies

Canada—Department of Communications

Hillsborough County Property Appraiser

Provincial Governments of Canada

Sarasota County Property Appraiser

State of Florida—Department of General Services

United States Department of Justice—Antitrust Division

Utah State Tax Commission

Regulated Firms

Alabama Power Company

Americall LDC, Inc.

BC Rail

CommuniGroup

Florida Association of Concerned Telephone Companies, Inc.

LDDS Communications, Inc.

Louisiana/Mississippi Resellers Association

Madison County Telephone Company

Montana Power Company

Mountain View Telephone Company

Nevada Power Company

Network I, Inc.

North Carolina Long Distance Association

Northern Lights Public Utility

Otter Tail Power Company

Pan-Alberta Gas, Ltd.

Resort Village Utility, Inc.

South Carolina Long Distance Association

Stanton Telephone

Teleconnect Company

Tennessee Resellers' Association

Westel Telecommunications

Yelcot Telephone Company, Inc.

1 Other Private Organizations

2

3 Arizona Center for Law in the Public Interest
4 Black United Fund of New Jersey
5 Casco Bank and Trust
6 Coalition of Boise Water Customers
7 Colorado Energy Advocacy Office
8 East Maine Medical Center
9 Georgia Legal Services Program
10 Harris Corporation
11 Helca Mining Company
12 Idaho Small Timber Companies
13 Independent Energy Producers of Idaho
14 Interstate Securities Corporation
15 J.R. Simplot Company
16 Merrill Trust Company
17 MICRON Semiconductor, Inc.
18 Native American Rights Fund
19 PenBay Memorial Hospital
20 Rosebud Enterprises, Inc.
21 Skokomish Indian Tribe
22 State Farm Insurance Company
23 Twin Falls Canal Company
24 World Center for Birds of Prey
25

26 ***Prior Experience***

27

28 **Q. Before becoming a consultant, what was your employment experience?**

29 A. From August 1975 to September 1977, I held the position of Senior Utility Analyst
30 with Office of Public Counsel in Florida. From September 1974 until August 1975, I

held the position of Economic Analyst with the same office. Prior to that time, I was employed by the law firm of Holland and Knight as a corporate legal assistant.

Q. In how many formal utility regulatory proceedings have you been involved?

A. As a result of my experience with the Florida Public Counsel and my work as a consulting economist, I have been actively involved in approximately 400 different formal regulatory proceedings concerning electric, telephone, natural gas, railroad, and water and sewer utilities.

Q. Have you done any independent research and analysis in the field of regulatory economics?

A. Yes, I have undertaken extensive research and analysis of various aspects of utility regulation. Many of the resulting reports were prepared for the internal use of the Florida Public Counsel. Others were prepared for use by the staff of the Florida Legislature and for submission to the Arizona Corporation Commission, the Florida Public Service Commission, the Canadian Department of Communications, and the Provincial Governments of Canada, among others. In addition, as I already mentioned, my Master's thesis concerned the theory of the regulated firm.

Q. Have you testified previously as an expert witness in the area of public utility regulation?

A. Yes. I have provided expert testimony on more than 250 occasions in proceedings before state courts, federal courts, and regulatory commissions throughout the United States and in Canada. I have presented or have pending expert testimony before 35 state commissions, the Interstate Commerce Commission, the Federal Communications

Commission, the District of Columbia Public Service Commission, the Alberta, Canada Public Utilities Board, and the Ontario Ministry of Culture and Communication.

Q. What types of companies have you analyzed?

A. My work has involved more than 425 different telephone companies, covering the entire spectrum from AT&T Communications to Stanton Telephone, and more than 55 different electric utilities ranging in size from Texas Utilities Company to Savannah Electric and Power Company. I have also analyzed more than 30 other regulated firms, including water, sewer, natural gas, and railroad companies.

Teaching and Publications

Q. Have you ever lectured on the subject of regulatory economics?

A. Yes, I have lectured to undergraduate classes in economics at Florida State University on various subjects related to public utility regulation and economic theory. I have also addressed conferences and seminars sponsored by such institutions as the National Association of Regulatory Utility Commissioners (NARUC), the Marquette University College of Business Administration, the Utah Division of Public Utilities and the University of Utah, the Competitive Telecommunications Association (COMPTEL), the International Association of Assessing Officers (IAAO), the Michigan State University Institute of Public Utilities, the National Association of State Utility Consumer Advocates (NASUCA), the Rural Electrification Administration (REA), North Carolina State University, and the National Society of Rate of Return Analysts.

Q. Have you published any articles concerning public utility regulation?

A. Yes, I have authored or co-authored the following articles and comments:

"Attrition: A Problem for Public Utilities—Comment." *Public Utilities Fortnightly*, March 2, 1978, pp. 32-33.

"The Attrition Problem: Underlying Causes and Regulatory Solutions." *Public Utilities Fortnightly*, March 2, 1978, pp. 17-20.

"The Dilemma in Mixing Competition with Regulation." *Public Utilities Fortnightly,* February 15, 1979, pp. 15-19.

"Cost Allocations: Limits, Problems, and Alternatives." *Public Utilities Fortnightly,* December 4, 1980, pp. 33-36.

"AT&T is Wrong." *The New York Times,* February 13, 1982, p. 19.

"Deregulation and Divestiture in a Changing Telecommunications Industry," with Sharon D. Thomas. *Public Utilities Fortnightly*, October 14, 1982, pp. 17-22.

"Is the Debt-Equity Spread Always Positive?" *Public Utilities Fortnightly,* November 25, 1982, pp. 7-8.

"Working Capital: An Evaluation of Alternative Approaches." *Electric Rate-Making,* December 1982/January 1983, pp. 36-39.

"The Staggers Rail Act of 1980: Deregulation Gone Awry," with Sharon D. Thomas. *West Virginia Law Review,* Coal Issue 1983, pp. 725-738.

"Bypassing the FCC: An Alternative Approach to Access Charges." *Public Utilities Fortnightly*, March 7, 1985, pp. 18-23.

"On the Results of the Telephone Network's Demise—Comment," with Sharon D. Thomas. *Public Utilities Fortnightly*, May 1, 1986, pp. 6-7.

"Universal Local Access Service Tariffs: An Alternative Approach to Access Charges." In *Public Utility Regulation in an Environment of Change,* edited by Patrick C. Mann and Harry M. Trebing, pp. 63-75. Proceedings of the Institute of Public Utilities Seventeenth Annual Conference. East Lansing, Michigan: Michigan State University Public Utilities Institute, 1987.

With E. Ray Canterbery. Review of *The Economics of Telecommunications: Theory and Policy* by John T. Wenders. *Southern Economic Journal* 54.2 (October 1987).

"The Marginal Costs of Subscriber Loops," A Paper Published in the Proceedings of the Symposia on Marginal Cost Techniques for Telephone Services. The National Regulatory Research Institute, July 15-19, 1990 and August 12-16, 1990.

With E. Ray Canterbery and Don Reading. "Cost Savings from Nuclear Regulatory Reform: An Econometric Model." *Southern Economic Journal,* January 1996.

Professional Memberships

Q. Do you belong to any professional societies?

A. Yes. I am a member of the American Economic Association.

EXHIBIT
R-21
ADMITTED

CHAPARRAL CITY WATER COMPANY, INC.

DOCKET NO. W-02113A-04-0616

SURREBUTTAL TESTIMONY

OF

BEN JOHNSON, PH.D.

ON BEHALF OF

THE

RESIDENTIAL UTILITY CONSUMER OFFICE

DECEMBER 7, 2007

SURREBUTTAL TESTIMONY

OF BEN JOHNSON, PH.D.

On Behalf of

The Residential Utility Consumer Office

Before the

Arizona Corporation Commission

Docket No. W-02113A-04-0616

Introduction

Q. Would you please state your name and address?

A. Ben Johnson, 3854-2 Killearn Court, Tallahassee, Florida.

Q. Are you the same Ben Johnson that earlier filed direct testimony in this proceeding?

A. Yes, I am.

Q. What is the scope of your surrebuttal testimony?

A. Due to resource constraints, it wasn't feasible to respond point-by-point to the Company's lengthy rebuttal. An exhaustive, point-by-point response would have undoubtedly run more than 100 pages, particularly given the overlapping and confusing nature of much of the Company's rebuttal testimony, and the fact that so much of the Company's testimony misstates or misinterprets my testimony, which makes it difficult to respond to the substance of the arguments without also having to expend considerable effort on clearing

up the many mischaracterizations or misunderstandings which further confuse the picture.

Rather than engaging in a lengthy point-by-point response, I will focus on the key issue which goes to the heart of the dispute in this proceeding – is a fair return on fair value rate base (FVRB) less than the weighted average cost of capital (WACC)? I will also discuss a few of the many instances where Chaparral has misunderstood or mischaracterized my position throughout its rebuttal testimony. The fact that I do not respond to specific criticisms or statements made by Company witnesses should not be construed as agreement with those statements. In this regard, I would ask the the Commission to carefully compare my direct testimony to the Company's rebuttal.

Q. **What do you see as the key difference between RUCO's position as described in your direct testimony, and Chaparral's position as described in the Company's testimony?**

A. The fundamental difference between our respective positions, and the central issue in this proceeding, is whether the exact same percentage rate of return which would be fair and appropriate for application to an original cost rate base would also be fair and appropriate for application to a fair value rate base – one which is intended to reflect the current fair market value of the utility's property, plant and equipment, taking into account the impact of inflation. Stated more succinctly, is it fair to multiply the Company's weighted average cost of capital (WACC) by its fair value rate base (FVRB), or should some lesser percentage figure be used?

Q. Can you succinctly state the Company's position on this issue?

A. Chaparral argues that the "fair rate of return" for application to a fair value rate base should be the same percentage figure that would be applied to an original cost rate base. Therefore, it argues that the Company's WACC should be applied to its fair value rate base. In support of this position Chaparral argues that "[t]he determination of both the return on equity and the overall rate of return on FVRB is independent of the determination of an original cost rate base (OCRB)". [Zepp Rebuttal, p. 3. Emphasis original]

Q. Can you summarize your position on this issue?

A. As I explained in my direct testimony, I disagree with this view. The allowed return in percentage terms and the rate base should be developed in a conceptually consistent manner, so that the final end result is appropriate and reasonable, regardless of what specific methodology is used in developing the rate base.

It is well established both as a matter of theory and as a matter of practice, that when the WACC is applied to an original cost rate base the utility is given an opportunity to earn a fair return – a return that fully compensates investors for the actual level of capital costs, without unduly burdening customers. Logically, then, applying that same percentage figure to a significantly larger rate base valuation will result in an unfair return – one that is larger than necessary to compensate investors, and which places an unfair burden on customers.

In comparing the Commission's fair value approach to rate base valuation with the original cost methodology, it is clear that the fair value method systematically results in

higher valuation levels because the forces of inflation tend to outweigh the forces of deflation. Thus, there will be a consistent, systematic discrepancy between the original cost and fair value valuations, with the latter systematically exceeding the former, primarily due to inflation.

Given that systematic discrepancy, if the WACC yields appropriate results when applied to the original cost rate base, it follows as a matter of pure logic that multiplying the WACC times a fair value rate base will tend to yield excessive results. Of course that statement of logic is contingent upon a key "if" -- the assumption that the WACC yields appropriate results when applied to the original cost rate base. But, that assumption is hardly controversial – in fact, this is probably the most robustly established principle in the field of public utility regulation – something that has been affirmed and reaffirmed by countless regulators and courts in numerous state and federal jurisdictions.

Q. Does Chaparral dispute there is a well-established relationship between the weighted average cost of capital and original cost rate base?

A. Apparently so. Yet, in countless proceedings where the OCRB is used, the fair rate of return is almost always computed based upon a composite, or weighted average, of the utility's cost of debt, preferred stock, and equity, with each of these cost rates being calculated with reference to amounts recorded in the utility's accounting records. The consistent application of WACC to OCRB is not coincidental. The WACC is fully consistent with, and directly comparable to, the original cost valuation concept – both the OCRB and the WACC are largely derived from accounting data, except that the cost of equity calculations necessarily rely in part on analyst judgment and stock market data,

and in so doing, the equity cost component provides investors with compensation for inflation.

Company witnesses Zepp and Bourassa dispute the tight conceptual linkage between the OCRB and the WACC, and they dismiss or ignore the decades of evidence that combining the WACC with OCRB results in a fair return. Yet, their counter arguments are extremely shallow. Dr. Zepp briefly focuses on the cost of equity component of the cost of capital, while Mr. Bourassa focuses on the capital amounts found on the Company's balance sheet.

Q. Can you elaborate on how Dr. Zepp disputes the relationship between the WACC and OCRB?

A. Dr. Zepp notes that he previously provided equity cost estimates for the Company, and states that those estimates did not depend upon the type of rate base used. "Equity cost estimates are generally determined with market data and thus are independent of the rate base to which they are applied." [Zepp Rebuttal, pp. 10-11] Dr. Zepp also notes that the ACC has a "policy of relying on market-based finance models to estimate the cost of equity..." [Id. p. 11] "Thus, the percentage equity cost ... is independent of whatever formula is used to determine the FVRB". [Id. p. 12]

Dr. Zepp is correct in his assertion that a utility's equity cost is often estimated using stock market data. Equity costs cannot be directly observed or measured; they can only be estimated indirectly, by reference to relevant data sets. But, the results of that estimation process are supposed to be fair to both stockholders and customers.

The end result of applying the WACC (including an estimate of the cost of equity)

to an OCRB is to provide a opportunity to earn a just and reasonable return. The reasonableness of this end result has been confirmed over multiple decades by thousands of carefully reasoned decisions by both regulators and appellate courts throughout the United States. Unless all of these regulators and courts have been wrong all along, applying the WACC to a consistently higher rate base valuation (fair value) will necessarily achieve an unjust and unreasonable result – one that overcompensates stockholders, and unreasonably burdens customers.

Q. Can you now elaborate on how Mr. Bourassa disputes the relationship between the WACC and OCRB?

A. In addition to noting that the cost of equity is estimated with reference to stock market data, as noted by Dr. Zepp, Mr. Bourassa claims there is no link between the cost of capital and rate base, because "in many cases, the utility's capital structure (debt and equity) does not equal the utility's OCRB". [Bourassa Rebuttal, p. 18] Mr. Bourassa further states:

> None of the parties made an attempt to match the total capital in Chaparral City's capital structure to the amount of its OCRB until Staff did so in this remand proceeding. The amounts of debt and equity capital in the capital structure simply provided the inputs used to calculate the weighted cost of capital. In the instant case, those inputs were 41.3 percent debt and 58.8 percent equity. The cost of each input, 5.1 percent for debt and 9.3 percent for equity, were then multiplied by the percentage weights to calculate the rate of return, 7.6 percent. The actual <u>amounts</u> of debt and equity weren't relevant - only their percentages. [Id., p. 19. Emphasis original]

Q. Does the fact that a utility's invested capital may not equal its OCRB as determined in a rate case, prove that there is no relationship between the two concepts?

A. No. I am not contending that the dollar amount of the OCRB exactly equals the dollar amount of investor supplied capital used in developing the WACC. However, there is a fundamental consistency between these two concepts – beginning with the fact that both amounts are developed directly from the utility's balance sheet. There are numerous reasons why the total amount of investor supplied capital may not equal the OCRB. For example, most utilities have non-utility investments – they own assets which are not appropriately included in the rate base. Some assets may be utility-related, but they may have been excluded from the rate base because they were determined to be imprudent or otherwise disallowed for ratemaking purposes. Similarly, construction work in progress is often excluded from the rate bases, yet it is financed with debt and equity funds that are included in the WACC calculations. This doesn't mean that investors are prevented from earning a fair return on their investment in construction work in progress – just that the return is deferred until the plant has been placed into service. The fact that the two dollar amounts differ does not change the fact that both the WACC and the OCRB are derived directly from the firm's historical accounting records, and that there is an inherent consistency between these two concepts – a consistency that is lacking when comparing the WACC to the FVRB.

Q. You have explained why you believe WACC is an appropriate return to apply to an original cost rate base, and noted that the end result of this approach has been found reasonable by numerous regulators and appellate courts. Can you briefly

elaborate on why you believe it would not be equally appropriate to apply WACC to a FVRB?

A. First and foremost, if the end result of multiplying WACC times OCRB is just and reasonable, then the the end result of multiplying WACC times FVRB will be excessive, if the FVRB is systematically higher than OCRB (as it is under the Commission's rate base methodology).

Second, the Court of Appeals recognized that the fair rate of return can vary based on the type of rate base used. [Chaparral City Water v. ACC, f.n. 5, p. 5] There is nothing in the Court of Appeals decision which requires this Commission to overcompensate stockholders, or to burden customers with paying rates which are excessive.

Third, if the rate base value grows over time, due to inflation, the fair rate of return will logically be lower than in jurisdictions where the rate base is not tied to inflation. In jurisdictions where OCRB is used regulators have found that the WACC approach provides a reasonable result – since the cost of equity includes adequate compensation for the effects of inflation and no further compensation is needed. In contrast, where the rate base is growing with inflation, because it is partly tied to reproduction cost, the utility's income will be systematically growing with increases in reproduction cost, and thus a reasonable result can best be achieved by using a lower percentage return – thereby avoiding overcompensating for inflation.

In this regard, it is important to realize that there is widespread agreement concerning the economic purpose of rate regulation, as well as the basic standards which should be used in judging how well the goal of regulation is being achieved. Most

theorists agree that the primary objective of regulation was, and still is, to produce results in the utility sectors of the economy which parallel those that would be obtained under conditions of competition. If application of the WACC to OCRB achieves results that are consistent with this objective benchmark, then application of that same percentage figure to FVRB will obviously deviate from the competitive benchmark, effectively overcompensating for inflation. Any given level of capital costs can be recovered using a lower percentage figure if the percentage figure will be applied to a rate base valuation that is growing over time as a result of increases in reproduction costs.

Q. How has Chaparral responded to those arguments?

A. Chaparral has submitted more than a hundred pages of rebuttal testimony from four different witnesses, yet none of these witnesses fully refute this line of reasoning. The witness who seems most responsible for addressing the issue is Dr. Zepp. However, even he never fully addresses the issue head on. For example, in his rebuttal he testifies at length about the constitutional requirement that in Arizona rates must be based upon a FVRB – a fact that isn't in dispute. [See, e.g. pp. 5-10] After discussing that undisputed fact, he concludes that the ACC should develop rates "that provide a fair rate of return on the fair value of a utility's property at the time of inquiry, i.e., its FVRB". [Id., p. 10] Yet, he never explains what steps the Commission should take to to ensure that the return is fair to customers as well as stockholders – as if the only concern is ensuring fairness from a stockholder perspective.

In fact, Dr. Zepp does not provide the Commission with any guidance regarding how to determine a "fair" return in this context. He skips over the problem of ensuring

fairness to customers, as well as the problem of overcompensating for inflation, and simply concludes that the Commission should "determine operating income by multiplying the FVRB by the rate of return previously determined by the Commission in this case, which is 7.6%". [Id., p. 4]

He doesn't address the fact that the fair value rate base valuation is growing due to inflation (through the reproduction cost calculations) and that the 7.6% WACC figure includes full compensation for the effects of inflation (built into the cost of equity estimates), and thus he ignores the fact that combining WACC with FVRB will tend to overcompensate for inflation.

Since both the FVRB methodology and the WACC methodology provide compensation for inflation, unless there is some offsetting reduction to the WACC in developing the final rate of return which is applied to the FVRB, stockholders will receive a windfall. Such a windfall would not be fair to customers, nor would it be consistent with the competitive benchmark. In a competitive market if investors were to be overcompensated for the effects of inflation, the industry would expand in response to these higher-than-necessary returns, leading to an overall increase in supply relative to demand, which in turn would drive down prices and profits, until they reached more reasonable levels, and thus the windfall would be short-lived. In contrast, Dr. Zepp is proposing to provide a windfall that would not end – a much higher rate of return would be provided, with no mechanism to bring it back to a fair level in line with investors' actual requirements or the returns that are earned in competitive industries.

Q. Does Chaparral dispute that a windfall would occur from applying the WACC to a

FVRB that is greater than OCRB?

A. Yes. Dr Zepp's responds by claiming such an argument presumes

> that a rate of return designed to provide investors a market-determined return on the equity portion of the FVRB and recovery of embedded costs of debt provides a higher return on investment than investors require. ... [I]nvestors should expect to earn a return on the "value of the property used at the time it is being used" as the U.S. Supreme Court said in *Bluefield*, and "the value of properties at the time of inquiry" as the Arizona Supreme Court said in *Simms*. That dollar return will be either higher or lower - and would only be the same return by accident - than the return earned on OCRB, and thus there is no windfall gain. [Id., pp. 15-16]

Dr. Zepp seems to be arguing that the WACC is the "fair rate of return" regardless of the rate base to which it is applied, and therefore there can never be a "windfall" under any circumstances. In other words, he seems to suggest (though he does not explicitly state) that since the WACC is always the "fair rate of return", this same percentage figure can appropriately be applied to rate bases of varying magnitude, based on widely differing methodologies, and that the resulting widely varying income levels must all be reasonable. This simply cannot be true.

The fundamental premise of the return on rate base approach to ratemaking is to allow utilities with an opportunity to recover their actual costs, including their actual cost of capital, consistent with what occurs in competitive industries. Those costs are what they are, and thus the amounts to be recovered do not vary widely merely on the basis of details of the ratemaking process. Widely varying dollar amounts of income cannot all result in recovery of the same level of actual capital costs; to the contrary, an excessive

return will result in over-recovery of capital costs. Unless some reasonable downward adjustment is made in translating the WACC to into a fair return for application to the FVRB, utility investors will be overcompensated, and customers will be burdened with unreasonably high prices.

Q. What else does Dr. Zepp say regarding your windfall argument?

A. Dr. Zepp states that such an analysis

> implies that the "correct" rate base is the OCRB, and that if the utility's operating income is not based on OCRB, then the authorized operating income is erroneous. [Dr. Johnson] admits the requirement to use FVRB in Arizona is unique, but he is unwilling to acknowledge that the correct rate base - the FVRB - should be used. [Id.]

This is one of many instances in which Company witnesses mischaracterize or misinterpret my testimony. In my testimony, I never said or implied that the only appropriate rate base is OCRB, and I certainly don't believe that to be the case. There are many different ratemaking methodologies which can be, and have been, appropriately used by regulators, including both FVRB and OCRB. However, what I am asserting is that while the details of specific rate setting procedures can vary, and the year-to-year and company-to-company results may vary somewhat from method to method, in order to be valid all ratemaking methodologies should be consistent with the underlying purpose of regulation. Regardless of the technical details, customers should be protected from monopoly power, and the overall end result of the rate making process should be reasonable to both customers and shareholders.

It is Dr. Zepp who seems unwilling to make a proper acknowledgment – he fails

to acknowledge that the rate of return must be fair to both investors and customers. An appropriate percentage return is one that fairly compensates the utility for its actual capital costs, but does not overcompensate for those costs; what that appropriate percentage figure is must necessarily be tied, at least in part, to the principles underlying the rate base – since the capital costs that are supposed to be recovered through the return on rate base mechanism are not a function of the ratemaking methodology, but are a fact that exists independent of the regulatory process.

While the Arizona Constitution requires this Commission to use a FVRB, it leaves many other details of the ratemaking process, including the method to be used in developing a fair rate of return, to the Commission's discretion. While the Commission may have considerable latitude in exercising this discretion, it would be improper to overcompensate for inflation, or to greatly deviate from the basic principle of allowing investors to recover the actual, prudent costs incurred in providing service, including the cost of capital. Yet that inappropriate result is exactly what would happen if Chaparral's position were accepted, and it were suddenly (and permanently) allowed to recover substantially more than its actual costs.

Q. Can you point to another example where the Company's witnesses misunderstood or mischaracterized your testimony?

A. Yes. There are many such instances. A good example occurs on page 30 of Dr. Zepp's testimony. In response to my proposed inflation adjustment, he states: "Dr. Johnson contends FVRB is expected to increase and designs his method to offset that increase in value. His assumption is factually incorrect". [Id. p. 30] Dr. Zepp then cites Handy-

Whitman reports to assert that "the average index of all geographical regions for Total Gas Plant" decreased during 2006. This small slice of Dr. Zepp's rebuttal testimony is, unfortunately, typical of the whole – he misstates my position, then attempts to refute that misstatement. Unfortunately, it will take more than a sentence or two to clear up the confusion.

First, Dr. Zepp is comparing a general expectation to a small part of the historical data. I never contended or assumed that inflation, or the reproduction cost of utility plant, must consistently increase in each and every year – whether in the past, or in the future. My direct testimony included an extensive discussion of how investors respond to inflationary expectations, primarily focusing on the familiar example of housing and other real estate markets. The key points I made in this discussion of real estate investors remain true regardless of whether or not real estate prices happen to decrease in some years, and I never suggested that real estate values always and everywhere increase from year to year.

Just because housing and other real estate prices sometimes experience a downward correction doesn't in any way negate the underlying principles I set forth in my direct testimony. While I didn't focus on the exceptions that make the rule – instances where real estate prices decrease, rather than increase, I was well aware of the fact that exceptions occur from time to time. In fact, I specifically stated in my direct testimony that "the annual change in any one measure of inflation can vary widely from one year to the next; as well there are variations between the various data series." Yet, Dr. Zepp points to an anomalous decrease in a single data series during a single year – as if that bit of evidence somehow refuted my point, which is that investors have a reasonable

expectation of inflation in the future, based in part on the reality that inflationary forces have generally outweighed deflationary forces in most sectors of our economy throughout the past 40 or more years.

A price decrease in any one year does not disprove the fact that the value of a utility's plant in service can be expected to increase (relative to original cost) if that value is measured in part based on reproduction cost data. Nor does it disprove the fact that investors will require a lower percentage return on assets that are expected to appreciate over time than they would require on those same assets that are not expected to increase in value.

Second, while Dr. Zepp claims that I designed my recommended method "to offset that increase in value" (referring to the year-to-year increases in rate base value), that is simply not true. While I asserted that the fair return must be less than the WACC, I never suggested that the differential between the WACC and the fair rate of return must be equivalent to the year-to-year increases in rate base value, or that the differential in returns must exactly offset any and all increases in rate base value. To the contrary, even a cursory review of the actual methodology I proposed shows that my recommended method is not designed to do that. I recommended arriving at a fair rate of return by subtracting an inflation factor from the WACC – and that subtraction would be based upon general expectations concerning inflation, not the specific change in rate base values of an specific utility.

Frankly, I don't understand how Dr. Zepp could misunderstand this aspect of my testimony, since I stated quite clearly that the differential between the WACC and the fair return is "a matter of judgment," and I indicated that the Commission "can exercise

sound discretion in determining the most appropriate inflation factor to subtract from the weighted average cost of capital." (Johnson Direct, p. 34). At no point did I suggest or imply that the inflation factor should be "designed" to offset the specific dollar increase in rate base value which a specific utility has experienced, or is expected to experience in the future. To the contrary, the thrust of my testimony was clearly focused on avoiding overcompensation for general inflation – inflation that is recognized by equity investors generally, because such inflation is already compensated for within the cost of equity capital.

Accordingly, I recommended that the Commission review and consider several data series that are publicly available, including data for annual changes in the Gross Domestic Product Deflator, as well as annual changes in consumer prices and various measures of producer prices. Needless to say, none of these suggested data series are designed to offset year to year increases (or decreases) in a utility's specific rate base value, as incorrectly suggested by Dr. Zepp.

Q. You've mentioned there are many instances in which the Company witnesses misunderstood or mischaracterized your testimony. Can you provide one more example – preferably one that you can dispose of a bit more succinctly?

A. Yes. Another example occurs on page 30 of Dr. Zepp's testimony, where he states: "Dr. Johnson and I agree that the appropriate return on Chaparral City's FVRB is 7.6%". Needless to say, this simply isn't correct. To the contrary, if 7.6% is assumed to be an appropriate return on OCRB, then the fair return on FVRB must logically be significantly

lower than 7.6%.

Frankly, it's hard to understand how Dr. Zepp could have become confused about my position, considering that I not only stated my opinion in considerable depth, but I summarized the essence of my position using a very simple numerical example – albeit using 7.5% rather than 7.6% as the WACC:

> A rate of return that is fair to both customers and stockholders can be derived from the weighted average cost of capital by simply subtracting an amount related to the rate of inflation. For example, assume the weighted average cost of capital is 7.50%, and the relevant inflation rate is 2.5%, then a fair return on the fair value rate base would be 5.00%, or thereabouts.
>
> Since the dollar magnitude of the fair value rate base is larger than an original cost rate base, reflecting past growth in the value of the utility's property, and since the future income stream can reasonably be expected to increase in the future, due to inflation and other factors which tend to push up property values as time passes, a 5.00% return on fair value is likely to provide investors with as large a total return (over time) as a 7.50% return applied to an original cost rate base. The exact amounts received by investors may differ somewhat, and they certainly will differ during any specific year, but the key point is that investors will have as strong an opportunity to recover their capital costs and to earn a competitive return through the application of a 5.00% return on fair value as with a 7.50% return on original cost. The regulatory goal of simulating the effects of competitive markets can be achieved either way. [Id., pp. 28-29]

Q. Does this conclude your surrebuttal testimony that was prefiled on December 5th, 2007?

A. Yes, it does.