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BEFORE THE ARIZONA CORPORATION COMMISSION

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Commissioner

IN THE MATTER OF THE APPLICATION OF PINE WATER COMPANY FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, A RATE CASE INCREASE AND FOR APPROVAL TO INCUR LONG-TERM DEBT	DOCKET NO. W-03512A-03-0279

SURREBUTTAL

TESTIMONY

OF

JOEL M. REIKER

CLAUDIO M. FERNANDEZ

MARLIN SCOTT, JR.

JANUARY 20, 2004

REIKER

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PUBLIC UTILITIES ANALYST V

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JANUARY 20, 2004

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EXECUTIVE SUMMARY
SURREBUTTAL TESTIMONY
OF
JOEL M. REIKER
W-03512A-03-0279

The surrebuttal testimony of Staff witness Joel M. Reiker addresses the following issues:

Financing Application
Mr. Reiker adopts Staff's recommendation to deny Pine Water Company's ("Pine" or "Company") financing application.

Financing recommendation
Staff recommends that Pine be authorized to issue debt and equity in the amount of $449,598, the book value of Project Magnolia, consisting of 33 percent debt and 66 percent equity, to account for the rate basing of Project Magnolia.

Rate of Return
Mr. Reiker responds to Company witness Thomas Bourassa's testimony regarding the rate of return. If the Commission chooses to base Pine's rate of return on the cost of capital, Staff recommends the Commission reject Mr. Bourassa's proposed rate of return ("ROR"), and instead use Staff's recommended ROR of 8.7 percent.

INTRODUCTION

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

A. My name is Joel M. Reiker. I am a Public Utilities Analyst V employed by the Arizona Corporation Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business address is 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Briefly describe your responsibilities as a Public Utilities Analyst V.

A. In my capacity as a Public Utilities Analyst V, I perform studies to estimate the cost of capital for utilities that are seeking rate relief. I also provide recommendations to the Commission on mergers, acquisitions, financings, and sales of assets. I have occasionally acted as arbitrator in disputes brought before the Utilities Division.

Q. Please describe your educational background and professional experience.

A. In 1998, I graduated cum laude from Arizona State University, receiving a Bachelor of Science degree in Global Business with a specialization in finance. My course of studies included classes in corporate and international finance, investments, accounting, statistics, and economics. I began employment as a Staff rate analyst in 1999. Since that time, I have attended various seminars and classes on general regulatory and business issues, including the cost of capital and energy derivatives.

Q. What is the scope of your surrebuttal testimony in this case?

A. I adopt Staff's recommendation to deny Pine Water Company's ("Pine" or "Company") financing application. I recommend financing approval to account for the rate basing of Project Magnolia. I also respond to Mr. Thomas Bourassa's testimony regarding the rate of return ("ROR"). If the Commission decides to base Pine's ROR on the cost of capital, I

offer an estimate of Pine's cost of capital that is more reasonable than Mr. Bourassa's estimate.

SUMMARY OF TESTIMONY

Q. How is Staff's testimony organized?

A. Staff's testimony is organized into three sections. Section I adopts Staff's recommendation to deny Pine's financing application and provides Staff's financing recommendation to account for the rate basing of Project Magnolia. Section II discusses the testimony of Company witness Thomas Bourassa regarding the rate of return. Section III provides Staff's estimate of Pine's cost of capital should the Commission decide to base the Company's ROR on the cost of capital.

Q. Have you prepared any exhibits to your testimony?

A. Yes. I prepared nine schedules (JMR-1 to JMR-9) that support Staff's surrebuttal testimony.

Q. Please summarize Staff's recommendations.

A. Staff recommends the Commission deny Pine's financing application. Staff recommends that Pine be authorized financing totaling $449,598, the book value of Project Magnolia, consisting of 33 percent debt and 66 percent equity, to account for the rate basing of Project Magnolia. Staff recommends that Pine's revenue requirement in this case be determined using operating margin. However, if the Commission decides to base Pine's rate of return on the cost of capital, Staff recommends the Commission apply an ROR of 8.7 percent. Staff recommends the Commission give little weight to the rate of return testimony of the Company's witness Mr. Thomas Bourassa.

I. FINANCING APPROVAL FOR THE ISSUANCE OF DEBT AND EQUITY

Q. Does Staff recommend approval of the Company's revised application to issue long-term debt?

A. No. The Company's financing request appears to remain inconsistent with Arizona Revised Statute ("A.R.S") § 40-302(A) despite the lowered request from $178,000 to $164,000 because the proceeds from the proposed debt issuance are still intended to repay an account payable to Brooke that was incurred to cover operating expenses.

Q. Does Staff still maintain that the Company's request to issue a five-year note at ten percent is unreasonable and not arms length in nature?

A. Yes, Staff still maintains that the transaction is not inherently arm's length and if the Commission does approve the loan it should approve a loan more consistent with sound financial principles and at a competitive-market rate.

Q. Does Staff have a recommendation regarding the issuance of debt and equity to finance the rate basing of Project Magnolia?

A. Yes. Mr. Bourassa finds shortcomings in Staff's recommendation to include Project Magnolia in the Company's rate base. In particular, he testifies, "Accounting properly for the financing of Project Magnolia would result in positive equity (see the rebuttal testimony of Thomas Bourassa. p. 11 at 26 – p. 12 at 1.) Staff agrees with Mr. Bourassa that, in this case, as Project Magnolia is added to the rate base then a similar pro forma entry should be made on the liability/equity side of the balance sheet. Staff corrects this shortcoming by recommending the approval of the issuance of debt and equity to account for the rate basing of Project Magnolia. Staff recommends that Pine be authorized

financing approval in the amount of $449,598, the book value of Project Magnolia, consisting of 33 percent long-term debt and 66 percent equity.[1] The financing mix represents the same percentages of debt and equity that the Company requested to repay the $533,599 inter-company payable but applied to the $449,598 book value of Project Magnolia.

Staff recommends an interest rate no higher than eight (8) percent and a term of fifteen (15) years.

II. RESPONSE TO THE TESTIMONY OF COMPANY WITNESS THOMAS BOURASSA REGARDING THE RATE OF RETURN

Q. What is the purpose of this portion of Staff's testimony?

A. The purpose of this portion of Staff's testimony is to comment on the appropriateness of Mr. Bourassa's rate of return recommendation. On page 28, lines 16 – 18 of his rebuttal testimony Mr. Bourassa notes that Staff has neither presented cost of capital testimony nor refuted his testimony on the appropriate cost of equity. In this case, Staff recommends that the Commission base Pine's revenue requirement on operating margin and not the cost of capital. However, if the Commission chooses not to determine the revenue requirement on operating margin and instead bases Pine's ROR on the cost of capital, Staff recommends the Commission reject Mr. Bourassa's proposed rate of return for the reasons stated below.

Q. Define the term "cost of equity."

[1] $149,979 in long-term debt and $299,619 in paid-in capital.

A. A firm's cost of equity is that rate of return that investors *expect* to earn on their equity investment given the risk of the firm. An investor's expected return is equally defined as the return on equity that they expect on other investments of similar risk. A utility's allowed ROE is set equal to an estimate of that utility's cost of equity under rate base/rate of return regulation.

Q. Please summarize Mr. Bourassa's ROE recommendations, analyses, and estimates.

A. Mr. Bourassa recommends a 12.0 percent ROE. He calculates discounted cash flow ("DCF") cost of equity estimates for seven publicly traded water utilities and conducts a "comparable earnings analysis" of the water utilities followed by *Value Line* and *C.A. Turner Utility Reports*. His cost of equity estimates average 10.64 percent. (See Mr. Bourassa's Schedule D-4, page 1.) He argues that Pine is riskier than nationally traded water utilities, so he adds 136 basis points to his estimates to arrive at his final recommendation of 12.0 percent. (See Mr. Bourassa's Schedule D-4, page 1.)

Q. Does Mr. Bourassa provide conclusive evidence that an equity investment in Pine is riskier than an equity investment in the water companies used in his sample?

A. No. Published articles on the subject of small utilities meriting an equity premium simply because of size contradicts the notion that smaller utilities merit some sort of premium.[2]

Mr. Bourassa's Discounted Cash Flow Estimates

[2] Specifically, see Annie Wong's article "Utility Stocks and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association* (1993, pp. 95-101) and Wallace Davidson et alia's article "A Note on the Relationship Between firm Size and Return in the Electric Utility Industry," *Journal of Accounting Auditing and Finance*, Vol. 8, No. 3 (Summer 1993).

Q. Please provide a brief summary of the theory upon which the DCF method of estimating the cost of equity is based.

A. The DCF method of estimating the cost of equity is based upon the theory that the market price of a stock is equal to the present value of all expected future dividends. Through a mathematical restatement, the discount rate, or cost of capital, can be derived from the expected dividends, the stock price, and a dividend growth rate. The formula is generally applied to a sample of companies that exhibit similar risk to the company in question and the resulting estimates for the discount rates (or costs of equity) are then averaged.

Q. What is Mr. Bourassa's DCF estimate?

A. Mr. Bourassa's DCF estimate is 9.27 percent.

Q. Are there problems with Mr. Bourassa's DCF analysis?

A. Yes. Mr. Bourassa's DCF analysis contains critical errors which, when corrected, lower his DCF estimate of the cost of equity.

Q. What errors are contained in Mr. Bourassa's constant growth DCF analysis?

A. Mr. Bourassa's DCF analysis contains two critical errors:

1. Mr. Bourassa's five-year historical earnings per share ("EPS") growth rate for California Water is incorrect.
2. Mr. Bourassa confuses book value growth with retention growth and uses *Value Line*'s projected book value growth rate as his projected retention growth rate.

Q. Please explain Mr. Bourassa's first error.

A. According to his working papers, Mr. Bourassa uses a five-year historical EPS growth rate for California Water of 2.5 percent. California Water's actual five-year historical EPS growth rate is -.5 percent. When corrected, Mr. Bourassa's estimate of constant dividend growth decreases seven basis points.

Q. What is Mr. Bourassa's second error?

A. Mr. Bourassa's second error is that he confuses the notion of retention growth (which is an accounting return on equity times a retention ratio) with book value growth. Mr. Bourassa uses *Value Line*'s near-term projected book value growth rate instead of *Value Line*'s projected retention growth rate in his calculation of projected intrinsic growth. When corrected, Mr. Bourassa's estimate of constant dividend growth decreases 14 basis points.

Combined, these errors inflate Mr. Bourassa's constant growth DCF estimate 21 basis points. After correcting these particular errors Mr. Bourassa's constant growth DCF estimate becomes 9.06 percent.

Q. On page 33 of his direct testimony Mr. Bourassa states that shares of stock in the smaller water utilities are selling at higher prices due to the possibility of being acquired by the larger water utilities, or foreign entities. (See direct testimony of Thomas Bourassa. P. 33 at 4 – 7.) Why would it be difficult to estimate the cost of equity using the DCF method if acquisition targets were included in the sample?

A. If a company is expected to be acquired at a premium, investors will bid the price of its stock up (and its dividend yield down) and the DCF method could understate the cost of equity.

Q. Does Mr. Bourassa provide any basis for his statement?

A. No. Mr. Bourassa provides no evidence that any of the water utilities in his sample are being acquired or have been targeted for acquisition, specifically. Mr. Bourassa's statement appears to be opinion rather than fact.

The Capital Asset Pricing Model

Q. Please describe the capital asset pricing model.

A. The capital asset pricing model ("CAPM") is the best-known model of risk and return. The CAPM is the work of Nobel prize-winning economists and provides a method to estimate the risk and expected return on a risky asset. The model concludes that the expected return on a risky asset is equal to the sum of the prevailing risk-free interest rate and the market risk premium adjusted for the riskiness of the investment relative to the market. The critical assumptions of the CAPM can be summed up in the following quote from the book, *The Stock Market: Theories and Evidence*:[3]

> The [CAPM] model presents a simple and intuitively appealing picture of financial markets. All investors hold efficient portfolios and all such portfolios move in perfect lockstep with the market. Portfolios differ only in their sensitivity to the market. Prices of all risky assets adjust so that their returns are appropriate, in terms of the model, to their riskiness. This riskiness is measured by a simple statistic, beta, which indicates the sensitivity of the asset to market movements.

[3] Lorie, James, Mary T. Hamilton. *The Stock Market: Theories and Evidence*. Richard D. Irwin, Inc. Homewood, Illinois. 1973. p. 202.

According to a 2001 study published in the *Journal of Financial Economics*, among CFOs the CAPM is by far the most popular method of estimating the cost of equity.[4]

Q. On pages 15 and 16 of his testimony Mr. Bourassa states that the reason he has not used the CAPM to estimate the cost of equity is that the CAPM "is producing a very low return ... unless one uses a long-term government obligation, the results produced by the CAPM method do not appear reasonable." Is this a valid reason for rejecting the CAPM?

A. No. Mr. Bourassa essentially rejects the CAPM because it does not produce a cost of equity estimate that is high enough for him. In other words, Mr. Bourassa's rejection of the CAPM appears result driven. Further, he implicitly suggests that investors cease to behave rationally when interest rates are low relative to the past – a suggestion he later contradicts on page 23 of his testimony when he states that the cost of capital is a function of the risk-free rate of interest.

The CAPM is just as valuable when interest rates are low relative to the past as it is in times when interest rates are high relative to the past. The CAPM is the most popular method of estimating the cost of equity among companies, and the Commission has recognized its usefulness in adopting Staff's recommendations.

Q. Does the CAPM produce cost of equity estimates that appear reasonable?

A. Yes. As explained below, Staff's CAPM cost of equity estimates in this case average 8.1 percent. According to Wharton School finance professor Jeremy Siegel, the average

[4] Graham, John R., Campbel R. Harvey. "The Theory and Practice of Corporate Finance: Evidence from the Field." *Journal of Financial Economics*. 60 (2001) pp. 187-243.

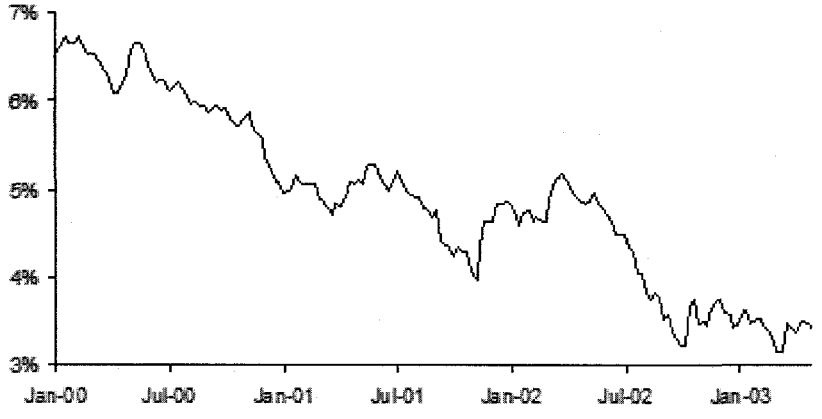
compound and arithmetic annual returns on U.S. equities have been 8.3 percent and 9.7 percent, respectively, using 199 years of data from 1802 through 2001.[5] The risk of a regulated water utility, as measured by CAPM's beta, is significantly below the theoretical average beta of 1.0. Therefore, the required return on an investment in the water utility industry is significantly below the average required return on the market.

One should keep in mind that the above returns are actual returns, not expected returns. However, any request for an allowed ROE at or above 10.0 percent exceeds the compound and arithmetic average historical return on U.S. equities for the period mentioned above.

Q. What has been the general trend of capital costs in recent years?

A. Interest rates have declined in recent years. Chart 1 graphs intermediate-term U.S. Treasury rates from June 1998 to May 2003.

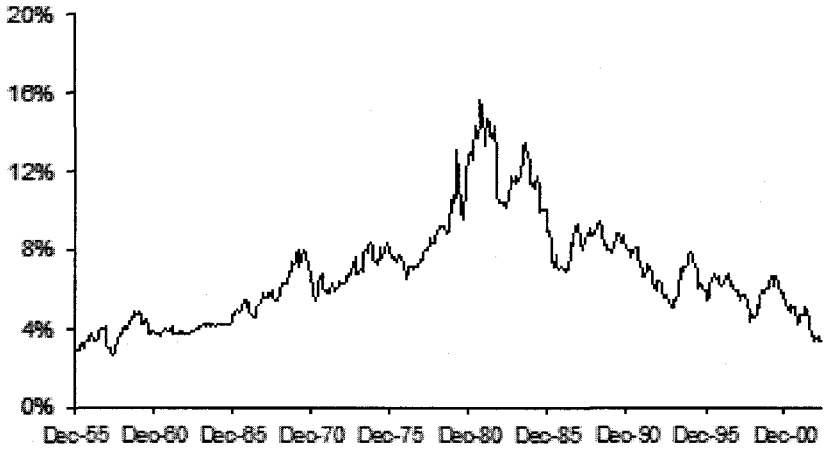
Chart 1: Average Yield on 5-, 7-, & 10-Year Treasuries



[5] Siegel, Jeremy J. *Stocks for the Long Run*, third edition. McGraw-Hill, New York. 2002. p.13.

The following graph puts interest rates and capital costs in general, into historical perspective. Interest rates have declined significantly in the past twenty years and are currently at levels comparable to the 1950's and '60's.

Chart 2: History of 5- and 10-Year Treasury Yields



According to the CAPM, the cost of equity moves in the same direction as interest rates. Chart 2 suggests that capital costs, including the cost of equity, are lower than they have been in decades. Therefore, contrary to Mr. Bourassa's statement, the CAPM does produce cost of equity estimates that appear reasonable.

Comparable Earnings

Q. What is the comparable earnings method?

A. The comparable earnings method is the practice of examining past or projected accounting/book returns on equity as a gauge of the cost of equity, rather than relying on market-based models such as the DCF and CAPM.

Q. What is Mr. Bourassa's comparable earnings analysis?

A. Mr. Bourassa examines authorized, actual and forecasted accounting/book returns for companies followed by *Value Line* and *C.A. Turner Utility Reports*. He *assumes* a meaningful relationship between accounting/book returns and the cost of equity and uses book/accounting returns to support his recommendation.

Q. Should the Commission rely on the "comparable earnings" method to estimate the cost of equity for a water utility?

A. No. The Commission should not rely on the comparable earnings method for several reasons:

1. The average market-to-book ratio of the companies in Mr. Bourassa's sample group is 2.1 and it has remained above 1.0 for a number of years. A market-to-book ratio greater than 1.0 indicates that a utility is expected to earn accounting/book returns greater than its cost of equity. Therefore, the companies in Mr. Bourassa's sample are expected to over-earn, and from a theoretical standpoint, regulators can be expected to correct this situation in the long term.

2. The comparable earnings method has been supplanted by modern corporate finance theory and market-based models such as the DCF and CAPM.

3. The traditional comparable earnings approach does not rest easily on the concept of opportunity cost, which the cost of equity represents.

4. The comparable earnings approach is circular.

Q. Are accounting/book returns representative of investors' required returns on common equity?

A. No. The average market-to-book ratio of the companies in Mr. Bourassa's sample is 2.1, and it has remained above 1.0 for a number of years. The implication of a market-to-book ratio greater than 1.0 is that investors expect the companies in the sample to earn book/accounting returns on equity greater than the companies' costs of equity. Additionally, investors will drive the price of the stock in a regulated utility above book value when the cost of equity is less than the authorized rate of return on book equity. According to Professor Laurence Booth at the Rotman School of Management at the University of Toronto:

> Theoretically, there is no question whatsoever that a market-to-book ratio of 1.50 indicates that the [cost of equity] is less than the [allowed rate of return on equity], *we have never even come across a company witness who would disagree with that proposition.*[6] (emphasis added)

To the extent Mr. Bourassa has examined actual authorized returns on book equity, the average market-to-book ratio of the companies in his sample indicates their costs of equity are significantly below the returns they have been authorized and the accounting returns they are expected to earn.

Q. Are there other reasons accounting/book returns should not be relied on to gauge investors' required returns?

[6] Booth, Laurence. "The Importance of Market-to-Book Ratios in Regulation." NRRI Quarterly Bulletin. Winter 1997. pp. 415 – 425.

A. Yes. The cost of equity represents an internal rate of return ("IRR"). Schedule JMR-1 is an example of a typical project with a $1,000 initial investment, $257 cash in-flows at the end of each year, a six-year life, and straight-line depreciation. The example shown in Schedule JMR-1 has an IRR of 9.0 percent. However, the average book/accounting return over the life of the project for the example is 20.4 percent. In fact, the accounting/book return *never* equals the economically relevant IRR. This is another reason accounting/book returns should not be relied on to gauge investors' required returns.

Q. Is the comparable earnings method a popular method to estimate the cost of equity?

A. No. Many decades ago the comparable earnings method was a widely used method for estimating the cost of equity to a public utility. It has since been supplanted by market-based models developed in corporate finance.

The application of corporate finance theory to public utility rate cases was set forth over thirty years ago by Professor Stewart Myers of the Massachusetts Institute of Technology. Professor Myers explained in his now classic article "The Application of Finance Theory to Public Utility Rate Cases" how the traditional comparable earnings approach contained serious deficiencies, both in logic and application.[7]

Q. Does the comparable earnings approach rest easily on the opportunity cost concept?

A. No. Opportunity cost is a forward-looking concept, whereas observed book/accounting returns used in the comparable earnings method are average returns on past investments. In discussing the comparable earnings standard set forth by the Supreme Court in the Hope decision, which states "the return to the equity owner should be commensurate with

[7] Myers, Stewart C. "The Application of Finance Theory to Public Utility Rate Cases." *The Bell Journal of Economics and Management Science*. Spring, 1972. pp. 58 – 97.

returns on investments in other enterprises having corresponding risks," Professor Myers states that the interpretation of the comparable earnings standard suggested by finance theory is:

> ... the rate of return investors *anticipate* when they purchase equity shares of comparable risk. This is a *market* rate of return, defined in terms of anticipated dividends and capital gains relative to stock prices.[8] (former emphasis added)

Accounting/book returns do not represent market returns. Only accepted market-based models such as the DCF and CAPM can be used to estimate required market returns.

Q. Is the comparable earnings method circular?

A. Yes. If regulatory commissions continually relied on the ROE's granted by other commissions in other jurisdictions, the market would never update the allowed ROE, except to account for changes in the risk-free rate. Further, capital markets determine the cost of equity, not state commissions.

Q. On page 30 of his testimony Mr. Bourassa mentions *Value Line*'s projected equity return and states that *Value Line* provides an excellent indication of investors' expectations. (See direct testimony of Thomas Bourassa. p. 30 at 11 – 14.) Is Mr. Bourassa referring to accounting/book returns or market returns?

A. Mr. Bourassa is referring to accounting/book returns. *Value Line*'s projected accounting/book return is not a market return and does not necessarily represent the return investors can expect to receive by purchasing stock in water companies.

[8] Myers. P. 62.

Q. Does *Value Line* project market returns for the sample water companies?

A. Yes. In the upper-left-hand corner of the *Ratings & Reports*, *Value Line* projects the average annual market return – this is price appreciation plus dividend income, for each company for the next three to five years. *Value Line*'s projected three to five year price appreciation plus dividend income return for American States Water, California Water, and Philadelphia Suburban Corp. averages 6.2 percent. An investor would most logically look at this projection before examining projected accounting/book returns if he was considering purchasing stock in the sample water companies.

Risk

Q How is risk defined?

A. Modern portfolio theory ("MPT") separates risk into two categories; market risk and unique risk. Market risk is defined as the sensitivity of an investment's returns to market returns. Market risk, also known as systematic risk, is the risk related to economy-wide perils that threaten all businesses such as changes in interest rates, inflation, and general business cycles. Market risk is the only type of risk that affects the cost of equity. The CAPM beta is a measurement of an investment's market risk, and it reflects both the business risk and financial risk of a firm.

Unique risk, or microeconomic risk, is risk that can be eliminated by portfolio diversification, i.e. buying securities in portfolios. Unique risk is not measured by beta nor does it factor into the cost of equity because it can be eliminated through simple shareholder diversification. Unique risks are peculiar to an individual company or investment project. Investors who hold diversified portfolios do not worry about unique

risk; therefore, it does not affect the cost of capital. Additionally, investors who choose to be less than fully diversified will not expect to be compensated for unique risk.

Q. Please distinguish between business risk and financial risk.

A. Business risk is the risk associated with the fluctuation in earnings due to the basic nature of a firm's business. Financial risk is the risk to shareholders caused by a firm's reliance on debt financing. A greater percentage of debt in a company's capital structure equates to greater financial risk and results in a higher cost of equity.

Q. Starting on page 34 of his testimony Mr. Bourassa lists a number of additional so-called "specific risks" which he claims must be accounted for in the Company's return on equity. Has Mr. Bourassa shown that any of his so-called "specific risks" increase Pine's cost of equity?

A. No. As was mentioned previously, the only type of risk that affects the cost of equity is market risk. To the extent that any of the so-called "specific risks" cited by Mr. Bourassa are unique to Pine (and are risks at all), they are diversifiable and investors do not expect to be rewarded for them.

Q. Can you give another explanation of market vs. unique risk?

A. Yes. Brealey, Myers, and Marcus' ("BM&M") text *Fundamentals of Corporate Finance* describes the theory of market and unique risk as one of the "six most important ideas in finance."[9] In discussing the CAPM, BM&M say the following:

> Again, it is an attractively simple idea. There are two kinds of risks – those that you can diversify away and those that you can't.

[9] Brealey, Richard, Stewart C. Myers, Alan J. Marcus. *Fundamentals of Corporate Finance*. 1995 McGraw-Hill. New York. pp. 664 – 665.

> *The only risks people care about are the ones that they can't get rid of – the nondiversifiable ones.*[10] (emphasis added)

Q. What else do BM&M say about unique risk?

A. According to BM&M, unique or firm-specific risks are "risk factors affecting only that firm." Page 236 of the BM&M text describes unique risk:

> [Unique] risk stems from the fact that many of the perils that surround an individual company are peculiar to that company and perhaps its direct competitors.

The Company may or may not face the "specific" risks cited by Mr. Bourassa. The question is whether or not investors expect extra return on their investment for them. They do not. Mr. Bourassa's assumption that investors expect extra return to compensate for firm-specific risk is contrary to mainstream corporate finance theory developed by Nobel Prize winning economists.

Mr. Bourassa's testimony regarding "specific" risks essentially amounts to adding a "fudge factor" to his DCF cost of equity estimate. Financial experts specifically warn against adding any type of "fudge factor" to discount rates:

> Managers sometimes add fudge factors to discount rates to account for worries such as these.
>
> This sort of adjustment makes us nervous. First, the bad outcomes we cited appear to reflect diversifiable risks which would not affect the expected rate of return demanded by investors…
>
> If the cash-flow forecasts are prepared properly, the discount rate should reflect only the market risk of the project. It should not be fudged to offset other errors in the cash-flow forecast.[11]

[10] Brealey. pp. 664 – 665.

Q. Have other experts addressed the subject of cost of capital witnesses inappropriately increasing recommended ROEs to account for firm-specific risks?

A. Yes. In its June 2003 edition, *The NRRI Journal of Applied Regulation* published an article by Steven Kihm entitled "How Improper Risk Assessment Leads to Overstated Required Returns for Utility Stocks." In his article, which the National Regulatory Research Institute Research Advisory Committee awarded first prize for best work, Mr. Kihm addresses the inappropriateness of the type of risk adjustment Mr. Bourassa proposes:

> When the inappropriate firm-specific risk factor adjustments are stripped away from the required return determination, we find that investors today demand less than a 10% return on most utility equities. This is supported not only by academic research, but also by research at investment banking and brokerage firms.[12]

III. STAFF'S ESTIMATE OF PINE'S COST OF CAPITAL

Q. What is the purpose of this portion of Staff's testimony?

A. The purpose of this portion of Staff's testimony is to provide the Commission with a reasonable and appropriate estimate of Pine's cost of capital. Should the Commission decide to base Pine's ROR on the cost of capital, Staff's estimate of Pine's cost of capital should be a guide to the Commission in setting the appropriate ROR.

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[11] Brealey. p. 263. It should be noted that these particular "worries" cited by the author include: A geologist looking for oil worries about the risk of a dry hole. A pharmaceutical manufacturer worries about the risk that a new drug which reverses balding may not be approved by the Food and Drug Administration. And the owner of a hotel in a politically unstable part of the world worries about the political risk of expropriation.

[12] Kihm, Steven. " How Improper Risk Assessment Leads to Overstatement of Required Returns for Utility Stocks." *The NRRI Journal of Applied Regulation*. June 2003. pp. 79 – 101.

Pine's Pro Forma Capital Structure

Q. What capital structure does Staff recommend if the Commission decides to base Pine's ROR on the cost of capital?

A. Staff recommends the following capital structure:

Table 1

Capital Source	Percentage
Long-term Debt	58.34%
Common Equity	41.66%
	100.0%

Q. How did Staff arrive at its recommended capital structure?

A. Staff's recommended capital structure represents the Company's December 31, 2002, capital structure pro forma adjusted to reflect the issuance of $149,979 in long-term debt and $299,619 in paid-in capital, as discussed above. The pro forma adjustment reflects the $449,598 financing approval recommended by Staff to account for the rate basing of Project Magnolia and consists of 33 percent debt and 66 percent equity.

The Cost of Debt

Q. What is Staff's recommended cost of debt if the Commission decides to base Pine's ROR on the cost of capital?

A. Staff recommends an 8.54 percent cost of long-term debt.

Q. What is the Company's proposed cost of debt?

A. The Company proposes a 10.0 percent cost of debt.

Q. Dow does Staff's recommended cost of debt differ from the Company's proposed cost of debt?

A. The Company's proposed cost of debt reflects a 10.0 percent interest rate on its originally-proposed $178,000 loan. Staff's recommended cost of debt reflects an 8.0 percent interest rate on its recommended pro forma loan of $149,979. Staff's recommended cost of debt is calculated in the following table:

Table 2

Loan	Amount Outstanding	Rate	Weighted Cost
Existing (12/31/02)	$55,353	10.0%	2.70%
Pro forma	$149,979	8.0%	5.84%
	$205,332		8.54%

Q. Why didn't Staff adjust the pro forma percentage calculation to account for the reduced loan request from $178,000 to $164,000?

A. Staff does not believe that the $164,000 amount is any more commendable than the $178,000 in and of itself, and that the change was not material enough to alter Staff's analysis in preparation of this testimony that had already used the $178,000 for Project Magnolia purposes. The recalculation would reduce the implicit debt percentage from 33 percent to 31.5 percent and increase the equity percentage of the request to 68.4 percent. Staff used these figures to make a pro forma increase to Pine's capital to synchronize with the Project Magnolia rate base increase. Staff could recalculate the pro forma percentages and flow-through adjustments if requested in support of the order in this matter if the Commission so directed.

The Cost of Equity

Q. What models did Staff use to estimate Pine's cost of equity?

A. Staff used the DCF model and the CAPM. Staff applied these two models to publicly traded stocks to estimate Pine's cost of equity.

Q. Did Staff apply the DCF model and the CAPM to Pine directly?

A. No, Staff did not apply the models directly to Pine because it does not have publicly traded stock and therefore lacks the information necessary to apply the market-based models. Staff used a sample of publicly traded water companies as a proxy.

Q. What companies did Staff select as proxies or comparables for Pine?

A. Staff selected all of the water companies currently followed by *The Value Line Investment Survey* ("*Value Line*") and *The Value Line Investment Survey Small and Mid Cap Edition* ("*Value Line Small Cap*") who have a significant percentage of revenues derived from regulated water utility operations. These companies include: American States Water, California Water, Connecticut Water Services, Middlesex Water, Philadelphia Suburban, and SJW Corp.

Discounted Cash Flow Model Analysis

Q. How did Staff apply the DCF Model?

A. Staff applied the DCF model using two different approaches. Staff's first approach used the constant-growth DCF model. Staff's second approach was to use a non-constant growth, or multi-stage DCF. The advantage of the multi-stage DCF is that it does not assume that dividends grow at a constant rate over time.

The Constant-Growth DCF

Q. What is the constant-growth DCF formula used in Staff's analysis?

A. The constant-growth DCF formula used in Staff's analysis is:

Equation 1:

$$K = \frac{D_1}{P_0} + g$$

where:
K = the cost of equity
D_1 = the expected annual dividend
P_0 = the current stock price
g = the expected infinite annual growth rate of dividends

The constant-growth DCF model shown in Equation 1 assumes that a company has a constant payout ratio and that its earnings are expected to grow at a constant rate. Thus, if a stock has a market price of $10 per share, an expected annual dividend of $1 per share, and if its dividends were expected to grow 3 percent per year, then the cost of equity for the company would be 13.0 percent (the 10 percent dividend yield plus the growth rate of 3 percent per year).

Q. How did Staff calculate the dividend yield component (D_1/P_0) of the constant-growth DCF formula?

A. Staff calculated the yield component of the DCF formula by dividing the expected dividend over the next year by the spot stock price for each company in the sample. Staff used spot stock prices as of the close of the market on September 25, 2003, as reported by *Yahoo Finance*. Staff then calculated the dividend yield by dividing expected dividends by the spot stock prices.

Q. What is the average dividend yield for Staff's sample of companies?

A. Staff's sample average dividend yield is 3.44 percent.

Q. How did Staff estimate the dividend growth (g) component of the DCF model?

A. Staff examined historical and projected growth in dividends per share ("DPS") because the DCF model is predicated on dividend growth. Staff also examined growth in earnings per share ("EPS") as well as intrinsic growth.

Q. How did Staff estimate DPS growth?

A. Staff estimated DPS growth by calculating the average rate of growth in dividends per share of the sample water companies for the period 1992 to 2002. The results of the analysis are shown in Schedule JMR-2. Staff's analysis indicates an average historical DPS growth rate of 2.5 percent for the sample water companies.

Q. What DPS growth rate does *Value Line* project for the sample water companies?

A. *Value Line* projects an average DPS growth rate of 2.9 percent over the next five years for the sample water companies it follows, as shown in Schedule JMR-2.

Q. Did Staff examine EPS growth to estimate the dividend growth component of the constant-growth DCF model?

A. Yes, Staff examined EPS growth because dividend growth does not occur independently of earnings. It would be virtually impossible for dividend growth to exceed earnings growth over the long run, as it would ultimately lead to payout ratios in excess of 100

percent, which are not sustainable. Therefore, Staff considered historical growth in EPS in estimating dividend growth.

Q. What is Staff's historical EPS growth rate?

A. Schedule JMR-2 shows the average historical rate of growth in EPS for the sample water companies. Staff's average historical EPS growth rate is 3.2 percent for the sample water companies.

Q. What EPS growth rate did *Value Line* project for the sample water companies it follows?

A. Schedule JMR-2 shows the average of the projected EPS growth rates to be 8.7 percent, higher than the 10-year historical EPS growth rate. One should note that analysts' projections of future earnings are generally high,[13] and vary widely depending on the source.

Q. What is retention growth?

A. Retention growth is simply the product of the percentage of earnings retained by the company ("retention ratio") and the book/accounting return on equity. This concept is based upon the theory that dividend growth can only be achieved if a company retains and reinvests a portion of its earnings in itself to earn a return.

Q. What is the formula for the retention growth rate?

[13] See Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. p. 100. Malkiel, Burton G. A Random Walk Down Wall Street. 1999. W.W. Norton & Co. New York. p. 169. Dreman, David. Contrarian Investment Strategies: The Next Generation. 1998. Simon & Schuster. New York. pp. 97-98. Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

A. The retention growth rate formula is:

Equation 2 :

$$g = br$$

where : g = retention growth
b = the retention ratio (1 – dividend payout ratio)
r = the accounting return on common equity

Q. What retention (br) growth rate did Staff calculate for the sample water companies?

A. Staff calculated an average retention (br) growth rate of 3.1 percent for the sample water companies, as shown on Schedule JMR-3. Staff calculated the rate by multiplying the accounting return on equity (r) by the retention ratio (b) for the years 1993 through 2002, and then averaging the results.

Q. Under what circumstances is the br growth rate method a reasonable estimate of future dividend growth?

A. The br growth rate is a reasonable estimate of future dividend growth if the retention ratio is fairly constant and if the market price to book value ("market-to-book") ratio is expected to equal 1.0. The retention ratio for the sample water companies used in Staff's analysis has remained relatively stable over the past several years. However, the average market-to-book ratio of the sample water companies is 2.3. (See Schedule JMR-5.) Staff assumes that investors expect the market-to-book ratio to remain above 1.0.

Q. What is the financial implication of a market-to-book ratio greater than 1.0?

A. As stated previously, the implication is that investors expect the sample water companies to earn book/accounting returns on equity greater than the companies' costs of equity.

Q. How has Staff accounted for the assumption that investors expect the average market-to-book ratio of the sample water companies to remain above 1.0?

A. Staff accounted for the assumption that investors expect the average market-to-book ratio of the sample water companies to remain above 1.0 by adding a second growth term to its br growth rate to arrive at the intrinsic growth rate.

Q. What is the second growth term Staff used to account for the assumption that investors expect the average market-to-book ratio of the sample water companies to remain above 1.0?

A. The second growth term, derived by Myron Gordon in his book, *The Cost of Capital to a Public Utility*[14], is found by multiplying a variable, v by another variable, s. Staff will refer to the product of v and s as the vs, or stock financing growth term. The vs growth term represents the company's dividend growth through the sale of stock.

Q. What does the variable v represent and how is it calculated?

A. The variable v represents the fraction of the funds raised from common stock sales that accrues to existing shareholders. It is calculated as follows:

Equation 3 :

$$v = 1 - \left(\frac{book\ value}{market\ value} \right)$$

[14] Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

For example, if a share of stock with a $10 book value is selling for $13, the v term would equal .23 (calculated as 1-[$10/$13]). Schedule JMR-3 shows Staff's calculation of v for each of the sample water companies.

Q. What does the variable s represent and how is it calculated?

A. The variable s represents the expected rate of increase in common equity from stock sales. For example, if a company has $100 in equity and it sells $10 of stock then s would equal 10 percent ($10/$100). Staff used historical accounting data to calculate an average s value for the sample water companies of 2.9 percent.

Q. How does the vs term work?

A. When a utility is expected to earn a book/accounting return equal to its cost of equity then its market price will equal its book value and v will be equal to 0.0 (calculated as 1-($10/$10)). If a utility is expected to earn more than its cost of equity then its market-to-book ratio will be greater than 1.0. If the market-to-book ratio is greater than 1.0 and v is positive when new shares are sold, then the book value per share of outstanding stock is less than the per share contributions of new shareholders. The per-share contribution in excess of book value per share accrues to the old shareholders in the form of a higher book value. The resulting higher book value leads to higher expected earnings and dividends. Thus, the growth term in the basic DCF model should include the vs growth term when the market-to-book ratio is not expected to equal 1.0.

Q. Shouldn't utilities' market-to-book ratios fall to 1.0 if their authorized ROEs are set equal to their costs of equity?

A. In theory, yes. Utilities' market-to-book ratios should fall to 1.0, in theory, making the vs term unnecessary. Setting the authorized return on equity for a utility equal to its cost of equity should eventually force the utility's market price down to equal its book value. In principle, then, the vs term is unnecessary in the long run. In reality, rate orders do not force market-to-book ratios to 1.0 for a variety of reasons. For example, regulatory commissions do not issue orders simultaneously for multi-jurisdictional utilities, and a company may have earnings that are unregulated. Therefore, Staff included the vs growth term in its DCF analysis, even though the resulting growth rate estimate might be too high. Staff's resulting estimates are too high to the extent that investors expect the sample's average market-to-book ratio to fall to 1.0 because of falling authorized ROEs.

Q. What is Staff's intrinsic growth rate and how was it calculated?

A. Staff's intrinsic growth rate is 4.9 percent for the sample water companies. It was calculated by averaging the sum of Staff's br and vs growth rates for each of the sample water companies. (See Schedule JMR-3)

Q. Did Staff consider *Value Line* forecasts to estimate intrinsic growth?

A. Yes. Staff considered *Value Line*'s b and r projections to calculate projected intrinsic growth rates for the sample water companies. The average intrinsic growth rate calculated under this approach is 7.7 percent. Schedule JMR-3 shows Staff's calculations of intrinsic growth based on *Value Line*'s projections.

Q. What is Staff's expected infinite annual growth rate in dividends?

A. Schedule JMR-4 shows Staff's calculation of expected dividend growth to be 4.98 percent and is reproduced below.

Table 3

Growth Rate	g
10-Year EPS Growth	3.2%
Projected EPS Growth	8.7%
10-Year DPS Growth	2.5%
Projected DPS Growth	2.9%
10-Year Intrinsic Growth	4.9%
Projected Intrinsic Growth	7.7%
Average	**4.98%**

Q. What is the result of Staff's constant-growth DCF analysis?

A. Staff's estimate of the cost of equity to the sample companies, using the constant-growth DCF model) is shown below:

Table 4

D_1/P_0	+	g	=	k
3.44%	+	4.98%	=	**8.4%**

The Multi-Stage DCF

Q. What is the multi-stage DCF formula?

A. The multi-stage DCF formula is shown in the following equation:

Equation 4 :

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

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

The multi-stage DCF model shown above incorporates at least two growth rates. It assumes that investors expect a certain rate of non-constant dividend growth in the near term known as "stage-1 growth", as well as a longer-term constant rate of growth known as "stage-2 growth."

Q. How did Staff implement the multi-stage DCF model?

A. Staff forecasted a stream of dividends and found the cost of equity that equates the present value of the stream to the current stock price for each of the sample water companies, consistent with Equation 4.

Q. How did Staff calculate stage-1 growth?

A. Staff forecasted dividends five years out for each of the sample water companies followed by *Value Line* using *Value Line*'s estimate of the projected dividend for the next twelve months and the five-year projected DPS growth rate. For the sample water companies followed by *Value Line Small Cap*, Staff forecasted the dividends expected over the next twelve months, and forecasted dividends five years out using the average projected DPS growth rate.

Q. How did Staff estimate stage-2 growth?

A. For stage-2 growth, or constant growth, Staff used the rate of growth in gross domestic product ("GDP") from 1929 to 2002, which is 6.5 percent. Historical growth in GDP is appropriate because it ultimately assumes that the water utility industry will neither grow faster, nor slower, than the overall economy.

Q. What is the result of Staff's multi-stage DCF analysis?

A. Schedule JMR-6 shows the result of Staff's multi-stage DCF analysis. The average of Staff's multi-stage DCF estimates is 9.6 percent.

Capital Asset Pricing Model

Q. What is the CAPM formula?

A. The CAPM formula is shown in the following equation:

Equation 5 :

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

where :

R_f = risk free rate
R_m = return on market
β = beta
$R_m - R_f$ = market risk premium

Q. How was the CAPM implemented to estimate Pine's cost of equity?

A. Staff implemented the CAPM on the same sample water companies to which it applied the DCF model.

Q. What risk-free rate of interest did Staff estimate?

A. Staff estimated the risk-free rate to be 3.6 percent. The estimate is based upon an average of intermediate-term U.S. Treasury securities' spot rates published in *The Wall Street Journal*. Published rates, as determined by the capital markets, are objective, verifiable, and readily available, as opposed to rates published by a forecasting service which are not necessarily objective, and are certainly not necessarily verifiable or readily available. Staff averaged the yields-to-maturity of three intermediate-term[15] (five-, seven-, and ten-year) U.S. Treasury securities quoted in the September 26, 2003, edition of *The Wall Street Journal* for rates on September 25, 2003. Intermediate-term rates averaged 3.6 percent.[16]

Q. What beta (β) did Staff use?

A. Staff used the average of the *Value Line* betas for the six sample water companies in its analysis as a proxy for Pine's beta. Column 'F' of Schedule JMR-5 shows that the average *Value Line* beta is .60 for the sample water companies.

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[15] The use of intermediate-term securities is based on the theoretical specification that the time to maturity approximates the investor's holding period, and assumes that most investors consider the intermediate time frame (5-10 years) a more appropriate investment horizon. See Reilly, Frank K., and Keith C. Brown. Investment Analysis and Portfolio Management. 2003. South-Western. Mason, OH. pp. 438 – 439.

[16] Average yield on 5-, 7-, and 10-year Treasury notes according to the September 26, 2003, edition of *The Wall Street Journal*: 3.03%, 3.55%, and 4.10%, respectively.

Q. Please describe the expected market risk premium ($R_m - R_f$).

A. The expected market risk premium is the amount of additional return that investors expect from investing in the market (or an average-risk security) over the risk-free asset.

Q. What is Staff's range of market risk premium estimates?

A. Staff's range of estimates for the market risk premium is 7.4 percent to 7.6 percent.

Q. How did Staff calculate its market risk premium range?

A. Staff used two approaches. The first approach is an estimate of the historical market risk premium. The second approach is an estimate of the current market risk premium.

Q. Please describe Staff's first approach to estimating the market risk premium: calculating the historical market risk premium.

A. For the first approach, Staff assumed that the average historical market risk premium is a reasonable estimate of the expected market risk premium. If one consistently uses the long-run average market risk premium to estimate the expected market risk premium, one should, on average, be correct.

Staff used the historical intermediate-term market risk premium published in Ibbotson Associates' *Stocks, Bonds, Bills and Inflation 2003 Yearbook* for the 77-year period from 1926 to 2002. Ibbotson Associates' calculation is the arithmetic average difference between S&P 500 returns and intermediate-term government bond income returns. The 77-year period is used to eliminate shorter-term biases while at the same time including

unexpected past events including business cycles. Staff's market risk premium estimate using this approach is 7.4 percent.

Q. Please describe the second approach to estimating the market risk premium: estimating the current market risk premium.

A. Staff's second approach essentially boils down to inserting a DCF-derived ROE into the CAPM equation, along with a beta and long-term risk-free rate, and solving the CAPM equation for the implied market risk premium. *Value Line* projects the expected dividend yield (next 12 months) and growth for all dividend-paying stocks under its review. According to the September 19, 2003, edition of *Value Line*, the expected dividend yield is 1.9 percent and the expected annual growth in share price is 10.7 percent.[17] Therefore, the constant-growth DCF estimate of the cost of equity to all dividend-paying stocks followed by *Value Line* is 12.6 percent. Using a beta of 1.00 and the current long-term risk-free rate of 5.00 percent, the implied current market risk premium is 7.6 percent.[18]

Q. What are the results of Staff's CAPM analysis?

A. Schedule JMR-7 shows the results of Staff's CAPM analysis. Staff's CAPM cost of equity estimates are also shown in the following table:

[17] 3 to 5 year price appreciation potential is 50%. $1.50^{1/4} - 1 = 10.67\%$

[18] 12.6% = 5.00% + 1.00 x (current market risk premium); 7.6% = current market risk premium.
A long-term rate is used here because the constant-growth DCF model does not assume a holding period other than infinity, which is a very long time. Therefore, a long-term risk-free rate is used for consistency.

Table 5

CAPM	Resulting Cost of Equity Estimate
Historical Market Risk Premium	8.0%
Current Market Risk Premium	8.1%
Average	**8.1%**

Q. Please summarize the results of Staff's cost of equity analysis for the sample water companies.

A. The following table shows the results of Staff's cost of equity analysis:

Table 6

Method	Estimate
Constant Growth DCF	8.4%
Multi-Stage DCF	9.6%
Average DCF Estimate	**9.0%**
Historical MRP CAPM	8.0%
Current MRP CAPM	8.1%
Average CAPM Estimate	**8.1%**
Average	**8.5%**

Based on the results shown in Table 6, Staff would conclude that the cost of equity to the water utility industry is somewhere in the range of 8.0 percent to 9.6 percent. The average of Staff's cost of equity estimates is 8.5 percent.

Final Cost of Equity estimate For Pine Water Company

Q. Does Pine's cost of equity depend on its capital structure?

A. Yes. As a company increases leverage its cost of equity goes up lockstep with beta. Schedule JMR-8 shows that the average capital structure of the companies in Staff's

sample is comprised of approximately 50 percent equity and 50 percent debt. Staff's recommended capital structure has more debt than the capital structure of the sample companies, on average. Therefore, Staff used the methodology developed by Professor Robert Hamada of the University of Chicago, which incorporates capital structure theory with the CAPM, to calculate a cost of equity financial risk adjustment of 50 basis points. Adding this 50 basis point financial risk addition to Staff's average estimate of the cost of equity to the sample water utilities of 8.5 percent results in a 9.0 percent cost of equity for Pine.

Staff's ROR Recommendation

Q. What is Staff's ROR recommendation if the Commission decides to base Pine's rate of return on the cost of capital?

A. Staff's ROR recommendation is 8.7 percent, shown in the following table:

Table 7

	Weight	Cost	Weighted Cost
Long-term Debt	58.3%	8.54%	4.98%
Common Equity	41.7%	9.0%	3.75%
Weighted Cost/ROR			8.7%

Staff's recommended ROR is also shown in Schedule JMR-9.

IV. CONCLUSION

Q. Please summarize your recommendations.

A. Staff recommends the Commission deny Pine's financing application as it appears to be inconsistent with Arizona Revised Statute ("A.R.S") § 40-302(A). Staff recommends Pine be authorized financing totaling $449,598, consisting of $149,979 in long-term debt and

$299,619 in paid-in capital, to account for the rate basing of Project Magnolia. Staff recommends that Pine's revenue requirement in this case be determined using operating margin. However, if the Commission decides to base Pine's rate of return on the cost of capital, Staff recommends the Commission apply an ROR of 8.7 percent. Staff recommends the Commission give little weight to the rate of return testimony of the Company's witness Mr. Thomas Bourassa. Mr. Bourassa's recommendations are inconsistent with modern corporate finance theory and the proper application of finance theory to public utility ratemaking.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

The Difference Between a Book/Accounting Return and an Internal Rate of Return

[A] [B] [C] [D] [E] [F] [G] [H] [I] [J]

Economist's Internal Rate of Return (IRR)[3]

Year	Cash Flow	Present Worth at 9%[1]
0	$(1,000.00)	
1	$257	236
2	257	216
3	257	198
4	257	182
5	257	167
	Present value	1,000
	Initial Investment	-1,000
	Net Present Value	0
	IRR/Cost of Capital	9%

Accountant's Rate of Return (Book Return)[3]

Original Cost of Investment	Gross Return	Depreciation	Net Return	Accumulated Depreciation	Net Investment (year end)	Accountant's Rate of Return[2]
$1,000	$257	$200	$57	$200	$800	6.3%
1,000	257	200	57	400	600	8.1%
1,000	257	200	57	600	400	11.4%
1,000	257	200	57	800	200	19.0%
1,000	257	200	57	1,000	0	57.0%
					Average Book/Accounting Return:	20.4%

Conclusion: The accountant's book rate of return never equals the economically revelant internal rate of return in the above project.

[1]Per present value table.

[2]Based on net return divided by average net investment.

[3]Assumes a $1000 initial investment, $257 cash in-flows at the end of each year, a 6-year life, and straight-line depreciation.

Schedule JMR-1

Pine Water Company
Growth in Earnings and Dividends
Sample Water Companies

Line No.	[A] Company	[B] 10-Year Earnings EPS	[C] Projected Earnings EPS	[D] 10-Year Dividends DPS	[E] Projected Dividends DPS
1	American States Water	1.5%	6.7%	1.2%	2.4%
2	California Water	1.4%	9.3%	1.9%	1.0%
3	Connecticut Water Services	3.0%	No Projection	1.3%	No Projection
4	Middlesex Water	1.9%	No Projection	2.9%	No Projection
5	Philadelphia Suburban	8.7%	10.0%	5.0%	5.3%
6	SJW Corp.	2.6%	No Projection	2.6%	No Projection
7					
8	Average	3.2%	8.7%	2.5%	2.9%
9					
10					
11					
12	Source: *Value Line*				

Schedule JMR-2

Pine Water Company
Calculation of Intrinsic Growth
Sample Water Companies

Line No.	[A] Company	[B] 10-Year Retention Growth br	[C] Projected Retention Growth br	[D] Book Value BV	[E] Market Price MP	[F] v 1-[(BV)/(MP)]	[G] s	[H] Stock Financing Growth vs	[I] 10-Year Intrinsic Growth br + vs	[J] Projected Intrinsic Growth br + vs
1	American States Water	2.6%	5.0%	14.67	23.5	0.38	2.6%	1.0%	3.6%	6.0%
2	California Water	2.8%	4.0%	13.69	25.7	0.47	0.2%	0.1%	3.0%	4.1%
3	Connecticut Water Service	2.9%	No Projection	9.78	27.2	0.64	1.5%	1.0%	3.8%	No Projection
4	Middlesex Water	1.8%	No Projection	10.06	26.0	0.61	5.8%	3.5%	5.3%	No Projection
5	Philadelphia Suburban	3.7%	8.0%	7.47	24.1	0.69	7.3%	5.0%	8.8%	13.0%
6	SJW Corp.	4.9%	No Projection	53.21	87.1	0.39	0.0%	0.0%	4.9%	No Projection
7										
8	Average	3.1%	5.7%				2.9%		4.9%	7.7%
9										
10										
11										
12										
13										
14										
15										
16	Book value per Schedule JMR-5									
17	Market Price per Schedule JMR-5									
18	s value = Funds raised from the sale of stock as a fraction of existing common equity over previous seven years.									

Schedule JMR-3

Pine Water Company
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Companies

Line No.	[A]	[B]
		g
1	10-Year EPS Growth	3.2%
2	Projected EPS Growth	8.7%
3	10-Year DPS Growth	2.5%
4	Projected DPS Growth	2.9%
5	10-Year Intrinsic Growth	4.9%
6	Projected Intrinsic Growth	7.7%
7		
8	Average	4.98%
9		
10		
11		
12	Per Schedule JMR-2 and Schedule JMR-3	

Schedule JMR-4

Pine Water Company
Selected Financial Data of Sample Water Companies

Line No.	[A] Company	[B] Symbol	[C] Spot Price 9/25/03	[D] Book Value 9/25/03	[E] Mkt To Book	[F] *Value Line* Beta	[G] Raw Beta
1	American States Water	AWR	23.53	14.67	1.6	0.65	0.45
2	California Water	CWT	25.68	13.69	1.9	0.60	0.37
3	Connecticut Water Services	CTWS	27.20	9.78	2.8	0.60	0.37
4	Middlesex Water	MSEX	25.96	10.06	2.6	0.55	0.30
5	Philadelphia Suburban	PSC	24.06	7.47	3.2	0.70	0.52
6	SJW Corp.	SJW	87.10	53.21	1.6	0.50	0.22
7							
8	Average				2.3	0.60	0.37
9							
10							
11							
12							
13							
14							
15							
16							

Schedule JMR-5

Pine Water Company
Multi-Stage DCF Estimates
Sample Water Companies

Line No.	[A]	[B] Current Mkt. Price (P_o)	[C] Projected Dividends[1] (D_t) d_1	[D] d_2	[E] d_3	[F] d_4	[G] d_5	[H] Stage 2 growth[2] (g_n)	[I] Equity Cost Estimate (K)
1									
2									
3	American States Water	23.5	0.88	0.91	0.93	0.96	0.99	6.5%	9.8%
4	California Water	25.7	1.12	1.14	1.15	1.17	1.19	6.5%	10.2%
5	Connecticut Water Services	27.2	0.86	0.89	0.92	0.95	0.98	6.5%	9.3%
6	Middlesex Water	26.0	0.89	0.92	0.95	0.98	1.01	6.5%	9.6%
7	Philadelphia Suburban	24.1	0.60	0.63	0.66	0.70	0.74	6.5%	8.9%
8	SJW Corp.	87.1	2.98	3.08	3.18	3.28	3.39	6.5%	9.6%
9									
10								Average	9.6%

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

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] d_1 (*Value Line* Companies) = "Est'd Div'd next 12 mos." 09/19/2003, *Value Line* Selection & Opinion.
[1] d_1 (*VL Small Cap Edition*) = Forecasted dividend over next twelve months.
[2] Average annual growth in GDP 1929 - 2002 in current dollars. http://www.bea.doc.gov/

Schedule JMR-6

Pine Water Company
Final Cost of Equity Estimates
Sample Water Companies

Line No.	[A]	[B]		[C]		[D]		[E]
	Constant Growth DCF			D_1/P_0	+	g	=	k
1	Constant Growth DCF Estimate			3.44%	+	4.98%	=	8.4%
2	Multi-Stage DCF Estimate						=	9.6%
3	**Average of DCF Estimates**							**9.0%**
4								
5	**CAPM Method**	**Rf**	+	**β**	**x**	**(Rp)**	=	**k**
6	Historical Market Risk Premium	3.6%	+	0.60	x	7.4%	=	8.0%
7	Current Market Risk Premium	3.6%	+	0.60	x	7.6%	=	8.1%
8	**Average of CAPM Estimates**							**8.1%**
9								
10								
11						**Average**		**8.5%**

Schedule JMR-7

Pine Water Company
Capital Structures of Sample Water Companies
31-Mar-03

Line No.	[A] Company	[B] Ticker Symbol	[C] Long-Term Debt	[D] Common Equity	[E] Total
1	American States Water	AWR	50.8%	49.2%	100.0%
2	California Water	CWT	56.3%	43.7%	100.0%
3	Connecticut Water Services	CTWS	45.5%	54.5%	100.0%
4	Middlesex Water	MSEX	52.3%	47.7%	100.0%
5	Philadelphia Suburban	PSC	53.6%	46.4%	100.0%
6	SJW Corp.	SJW	40.8%	59.2%	100.0%
7	Average		49.9%	50.1%	100.0%
8					
9	Pine Water Company		58.3%	41.7%	100.00%
10					
11					
12					
13					
14					
15	Source: 08/01/2003 Value Line				

Schedule JMR-8

Pine Water Company
Capital Structure
And Weighted Cost of Capital

Line No.	[A]	[B] Weight (%)	[C] Cost	[D] Weighted Cost
1	Long-term Debt	58.3%	8.54%	4.98%
2	Common Equity	41.7%	9.0%	3.75%
3				
4	Weighted Average Cost of Capital/ROR			8.7%

Schedule JMR-9

FERNANDEZ

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF PINE WATER COMPANY FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, A RATE CASE INCREASE AND FOR APPROVAL TO INCUR LONG-TERM DEBT	)	DOCKET NO. W-03512A-03-0279

SURREBUTTAL

TESTIMONY

OF

CLAUDIO M. FERNANDEZ

PUBLIC UTILITIES MANAGER

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JANUARY 20, 2004

TABLE OF CONTENTS

Schedules

EXECUTIVE SUMMARY

The surrebuttal testimony of Staff witness Mr. Claudio M. Fernandez addresses the rebuttal testimony of Pine Water Co. witnesses Mr. Robert Hardcastle and Mr. Thomas Bourassa. Mr. Hardcastle takes exception to Staff's recommendation regarding the ownership of Project Magnolia and the elimination of the wheeling expenses charged to Pine Water Company to transport the water through the pipeline. Mr. Bourassa' rebuts Staff's position regarding the disallowance of deferred tax asset, rate case expense, calculation of property taxes, reduction of the materials and supplies operating expense and interest synchronization and rate design.

As a result of the rebuttal testimony Staff prepared a cost of capital study in case the Commission decides to base Pine Water's rate of return on the cost of capital instead of an operating margin of 10 percent as explained in Mr. Joel Reiker's testimony.

Staff further adjusted its recommended operating income consistent with the recommended operating margin of 10.00 percent.

Staff further increased its recommended original cost rate base ("OCRB") by $3,583, from $633,958 to $637,541. Staff increased plant in service by $1,597, decreased Accumulated Depreciation by $11,780 due to Project Magnolia placed in service in February 2001 versus February 2000. Staff further reduced Working Capital by $9,794 as a result of a correction of a mathematical error.

INTRODUCTION

Q. Please state your name and business address.

A. My name is Claudio M. Fernandez. My address is, 1200 West Washington Street, Phoenix, Arizona 85007.

Q. Are you the same Claudio M. Fernandez who has previously filed testimony in this case?

A. Yes. I filed direct testimony on October 15, 2003.

PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony in this proceeding?

A. I am presenting Staff's analysis and recommendations concerning the rebuttal testimony of Pine Water Company ("Pine Water" or "Company") in the Company's rate increase application.

Q. As a result of your review of the Company's rebuttal testimony, is Staff changing any of its recommendations set forth in its direct testimony?

A. Yes. Staff increased its recommended original cost rate base ("OCRB") by $3,583 as depicted in surrebuttal schedule CMF-3. Staff increased Plant in Service by $3,583 and decreased Accumulated Depreciation by $11,780 due to Project Magnolia placed in service in February 2001 versus February 2000. Staff further reduced Working Capital by $9,794 as a result of a correction of a mathematical error. However, the above mentioned changes did not materially affect Staff's recommended revenue requirements in its direct testimony.

Staff prepared a cost of capital study as a result of its proposed capital structure which resulted in a pro forma equity balance. Staff's recommended capital structure was adjusted to reflect the issuance of $149,979 in long-term debt and $299,619 in paid-in capital. The

pro forma adjustment reflects the same percentages of debt (33 percent) and equity (66 percent) that the Company requested to repay $533,599 inter-company note but applied to the $449,598 original cost of Project Magnolia.

Staff's recommended revenue requirement was based on an operating margin of 10 percent, which translates to an 11.00 percent rate of return. Staff's recommended operating margin method to arrive at its recommended revenue requirement instead of the cost of capital study is the result of the Company's small rate base.

Advances in Aid of Construction ("AIAC") and Contributions in Aid of Construction ("CIAC") represent approximately 23 percent of the gross plant in service. Furthermore, the gross plant has been depreciated by 53 percent. Consequently, the small rate base.

However, Staff provided a cost of capital study in case the Commission decides to base the Company's rate of return on the cost of capital. Staff further adjusted its recommended operating income consistent with the recommended operating margin of 10.00 percent as shown in surrebuttal schedule CMF-1.

SUMMARY OF COMPANY'S REBUTTAL TESTIMONY

Q. Would you briefly summarize the Company's rebuttal testimony?

A. The Company indicated in its rebuttal testimony that is in disagreement with Staff on the following issues:

1. The ownership of the Magnolia Project pipeline.
2. The disallowance of the wheeling charges.
3. The disallowance of deferred tax asset of $369,000.
4. Rate case expense.
5. Calculation of property taxes.

6. Reduction of the materials and supplies operating expense.
7. Interest synchronization with rate base.
8. Rate Design

Q. How did Staff organize its Surrebuttal Testimony?

A. Staff utilized the Company's major points of disagreements listed above and made appropriate comments accordingly.

PROJECT MAGNOLIA

Q. What are the Company's rebuttal issues regarding Project Magnolia.

A. The Company asserts that Project Magnolia is owned by Brooke Utilities Inc. ("BUI") and all the costs for constructing and operating Project Magnolia were paid by BUI. The Company also stated that even though the Company requested and received Commission authorization in Decision No. 62400 to issue common stock to fund capital projects subsequent to June 30, 1998 and Project Magnolia was one of the projects listed, the Company never issued the stock.

The Company also stated that Staff's reliance in the previous rate case to determine ownership of Project Magnolia was a serious error. The Company criticized Staff for using a plant schedule that listed Construction Work In Progress ("CWIP") with an amount of $17,040 as the cost of Project Magnolia. According to the Company, that plant listing shows Project Magnolia being placed in service June 30, 1998 (the test year used in the last rate increase application) and since the cost of the project was approximately $450,000 and not placed in service until February 2001, that plant detail schedule was mistaken. In addition, the Company stated that since the Commission did not include CWIP in its authorized rate base, Staff's position is somewhat incredible.

Q. Does Staff agree with any of the Company's issues described above regarding Project Magnolia?

A. Yes. Staff agrees that apparently the Company did not issue any of the common stock authorized in Decision No. 62400, dated March 31, 2000. Consequently, Staff's recommended capital structure reflects the effects of the increase in equity of $299,619 and long-term debt of $149,979.

Q. Does Staff agree with the Company's characterization in regards to the CWIP issue?

A. No. Staff does not agree. The Company's rebuttal testimony failed to address the fact that the previous rate increase application included CWIP of $334,242 in schedule B-1 (rate base) which represented the cost of Project Magnolia. Staff, frankly is puzzled as to how the Company funded the CWIP plant account that reflected approximately 75 percent of the cost of Project Magnolia in the books of Pine Water's predecessor. Notwithstanding, Staff's pro forma capital structure provided the funding for Project Magnolia and retained the ownership in the Company's books.

Q. Has Pine Water ever sought Commission authorization to transfer ownership of Project Magnolia to BUI?

A. No. Staff is not aware of any Company filing requesting transfer of ownership.

Q. In your opinion is Project Magnolia necessary or useful to Pine Water in its provision of service to its customers?

A. Yes. Staff believes that Project Magnolia is an integral part of the Company's infrastructure necessary in the provision of service to its customers because the pipeline provides the most economical mean to move water from its source to the distribution system of Pine Water.

Q. Did Staff imply that CWIP of $334,242 was included in the Commission's authorized rate base in Decision No. 62400?

A. No. Staff's direct testimony is very clear and did not say or imply that CWIP was part of the authorized rate base in Decision No. 62400. Staff's witness Fernandez direct testimony page 7 at line 26 through page 8 at lines 1 to 4 states that plant in service in the Company's last rate increase application reflected CWIP of $334,242 which represented the cost of Project Magnolia up to the time of the filing and that Staff removed this item from rate base because it was not used and useful. However, the fact that the application reflected approximately 75 percent of the cost in the books and records of the Company clearly established ownership status.

Q. Please explain why the Company assigned ownership of Project Magnolia to BUI rather than Pine Water.

A. According to the rebuttal testimony, BUI decided to build, own and operate Project Magnolia because of the risk regarding regulatory approvals and because of the possibility that the pipeline would never be used. The Company also stated that unlike Pine Water, BUI would not have its decision second guessed and if successful, it would have a better opportunity to recover its investment and earn a return that rewarded it for the significant risks it took.

The Company also stated the risks associated with Project Magnolia were sufficient enough that they should be borne outside of the regulatory arena. In addition, Project Magnolia is a two-way pipeline that could deliver water from the Pine Water system to the Strawberry Water system and vice versa and since the pipeline is not for the exclusive benefit of Pine's Water customers, ownership by BUI avoids complicated allocation problems in the ratemaking process.

Q. Does Staff agree with the Company's arguments?

A. No, Staff does not agree with the Company. Staff was led to believe that Project Magnolia was going to be owned by the Company consistent with its last rate increase application where Pine Water's predecessor recorded CWIP of $334,242 which represented the cost of Project Magnolia up to the filing date. In addition, in that same filing (Docket No. W-01576A-99-0277) the Company requested and received authorization to issue common stock to fund the construction of the pipeline. As explained above, Staff removed CWIP from the Company's proposed rate base because it was not used and useful. In other words, if the pipeline would have been in service at the time of the filing, Staff would have accepted the cost of Project Magnolia and recommended inclusion in its proposed rate base. Accordingly, there should not have been any second guessing in the part of the Company whether the construction of Project Magnolia was a prudent investment. Knowing the water situation in the area and how expensive it is to truck water, the beneficiary of Project Magnolia is clearly Pine Water, even though the pipeline could move water from Pine to Strawberry. However, this is an unlikely event because the Pine Water system cannot produce enough water to sustain its own needs.

The Company's argument regarding a return on investment asserts that the regulatory process could not provide an adequate rate of return and that BUI could recover its investment much faster than the Company. The Company is partially correct in its assertion. BUI is recovering its investment by charging Pine Water for the use of the pipeline at a rate of $15.00 per 1,000 gallons of water. In this manner BUI would break-even on its investment and recover operating expenses of $35,884 annually by wheeling 36,131.73 million gallons of water. At a rate of 11,643 million gallons per year, the break-even point would be accomplished in 3.1 years as shown in schedule CMF-21. Furthermore, BUI would realize a 32.13 percent rate of return.

WHEELING CHARGES

Q. What is the Company's position regarding the reasonableness of the wheeling charges?

A. The Company affirms that the wheeling charges are reasonable when compared with the cost of trucking water. The Company also alleges that since Staff erroneously concluded that Pine Water is the owner of Project Magnolia, it would appear that Staff does not oppose the reasonableness of the wheeling charge or the test year level of expense.

Q. Please explain Staff's position regarding the wheeling charge.

A. Staff believes that ownership of the pipeline should remain with the Company and therefore the wheeling charge should not apply. If the Commission agrees with the Company that Project Magnolia is owned by BUI, Staff recommends that no wheeling charge be applied because BUI has recovered its costs through the Overhead Allocation recorded in Pine Water's books of $71,092 which Staff accepted. Staff notes that even with BUI's allocation of expenses related to Project Magnolia of $35,884 plus $45,871 which represents a 10.62 percent rate of return ($449,598 less accumulated depreciation of $17,668 = $431,930 x 10.62% = $45,871) the total to be recovered would be $81,755 divided by 11,643 million gallons resulting in a wheeling charge of $7.02 per 1,000 gallons.

Q. Does this mean that Staff is recommending a wheeling charge of $7.02 per 1,000 gallons?

A. No, Staff's above described calculation was done for illustrative purposes only to show that $15.00 per 1,000 gallons is excessive. Some of the expense categories amounts used in the allocation related to Project Magnolia provided by the Company in response to Staff's data request CF 9-2 do not appear to correlate to the expense amounts recorded in BUI's books. For example, BUI's books for the year ended December 31, 2002 reflect

Purchased Power of $6,091 while the expense allocation for this expense category is $9,227. Another example is the Materials and Supplies account. BUI's books show a total expense of $3,027 while the allocation expense is $3,159.

Q. Does Staff agree with the Company statement that BUI operating expenses are recovered through the wheeling charges?

A. No. The Company stated that BUI does not allocate Project Magnolia operating expenses to Pine Water because BUI's operating expenses are recovered through the wheeling charge paid by Pine Water. This statement seems to contradict the Company's response to Staff's data request CF 9-2. In addition, the Company's statement suggests that the wheeling charge of $15.00 per 1,000 gallons is a net figure which represents a gross wheeling charge of $22.02 less allocated expenses of $7.02 as calculated above for a net wheeling charge of $15.00. However, Staff does not believe that to be the case because operating expenses should be recorded in the expense section of the income statement and revenues should not be netted against the expense before being recorded in the revenue section of the income statement.

DEFERRED TAX ASSET

Q. Is Staff changing its recommendation regarding the disallowance of deferred tax asset of $369,000 as a result of the Company's rebuttal explanation?

A. No. The Company's rebuttal testimony explained that the tax asset was derived from three components. The first component was due to the 1986 Tax Reform Act that taxed Contributions in Aid of Construction ("CIAC") as ordinary income until it was repealed in 1996. The Company asserted that Pine Water paid income taxes on ordinary income due to the CIAC received. Staff requested a copy of the income tax filings showing that Pine Water paid the income taxes claimed. The Company responded saying that Pine Water was not in existence from 1986 to 1996; therefore no tax records exist and that no records

exist for the Company's predecessors. Accordingly, Staff is not changing its recommendation.

The second component of the deferred tax asset according to the Company resulted from timing differences due to the use of accelerated depreciation for tax purposes which result in greater deductions for income tax purposes than from book purposes. This timing difference results in a liability and therefore a reduction from rate base.

The third component of the deferred tax asset claimed by the Company is the result of net operating loss ("NOL") to be carried forward for the next 20 years. However, NOL's are not recognized by the Commission and they should not be included in the calculation of deferred taxes.

In summary, none of the three components that resulted in the tax asset claimed by the Company are valid and therefore, should be rejected.

Q. Did Staff claim that the tax asset should be eliminated because it increases rate base?

A. No, the Company's rebuttal testimony is in error. Staff did not make such claim in its direct testimony.

RATE CASE EXPENSE

Q. What is the Company's issue regarding rate case expense?

A. The Company believes that a more realistic amortization period is three years rather than Staff's recommended 4.5 years. The Company also stated that due to unforeseen developments regarding the intervention of the Pine-Strawberry Water District, rate case expense could increase.

Q. Is Staff in agreement with the Company?

A. Staff is willing to review its rate case recommendation pending an updated figure from the Company. However, this should not be construed to mean that Staff would recommend any amount of rate case expense without scrutiny.

PROPERTY TAXES

Q. Please explain the Company's concern regarding property tax.

A. The Company believes that Staff did not use the appropriate revenue levels to calculate property taxes. The Company indicated that Staff only used historical revenue levels and did not use prospective revenues in its calculation. The Company is also arguing that Staff did not use the same methodology as the one recommended in the Arizona-American rate case.

Q. Did Staff use the appropriate revenue level in its calculation of property taxes?

A. Yes, it did. Staff's recommended revenue levels followed the methodology prescribed by the Arizona Department of Revenue ("ADOR"). The prescribed formula indicates that the tax will be computed by multiplying the average of the three previous years of reported gross revenues of the company by a factor of two. It also requires that if the taxpayer reports less than three years of gross income, but reports income for the previous calendar year, the average gross revenue will be calculated based on the average of those years with reported revenues.

In the case of Pine Water, Staff used the average of three reported years and in order to synchronize the tax with prospective revenues Staff added its recommended revenue increase to its calculation. Staff also notes that the same methodology was used in the Arizona Water Company – Eastern Division rate case, Docket No. W-01445A-02-0619.

MATERIALS AND SUPPLIES

Q. Please explain the Company's issue regarding the computation of Materials and Supplies expense.

A. The Company apparently is in agreement with Staff's three year average method of calculating this expense category. However, the Company disagrees with the result. The reason for averaging is that the expense level of the two prior years to the test year was very low when compared to the test year expense level. Consequently, Staff sought to normalize this expense category because it is unlikely that the Company will sustain the same test year expense level in the future. The Company's argument that the result of the average computation should meet management expectations and be evaluated for reasonableness does not meet the known and measurable criteria. Therefore, Staff is not changing its recommendation.

INTEREST SYNCHRONIZATION

Q. Please explain Staff's use of interest synchronization for income tax calculations in its direct testimony.

A. Staff erroneously used interest synchronization in its recommended income tax expense calculations in its direct testimony. Staff should not have used the weighted cost of debt when the Company had a negative equity. However, consistent with Staff's recommended capital structure due to a positive equity balance, it is appropriate to use the weighted cost of debt for income tax calculations.

RATE DESIGN

Q. Is Staff recommending a different rate design as a result of the Company's rebuttal testimony?

A. No. Staff's recommendation remains the same regarding tier breaks and number of gallons included in those tiers regardless of meter size. The Company's rate structure includes

more gallons in the larger than the 5/8 x ¾-inch meter size that typically serves the residential customer class. In Staff's opinion, in the case of Pine Water, the rate structure should be uniform and non-discriminatory regardless of the meter size, especially when you consider Pine's water shortage situation.

Staff's proposed rates are the same as its recommended rates in direct testimony.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.

Pine Water Company
Docket No. W-03512A-03-0279
Test Year Ended December 31, 2002

Schedule CMF-1
Surrebuttal

COMPUTATION OF INCREASE IN GROSS REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	[A] COMPANY ORIGINAL COST	[B] STAFF ORIGINAL COST
1	Adjusted Rate Base	$ 680,033	$ 637,541
2	Adjusted Operating Income (Loss)	$ (132,725)	$ 33,147
3	Current Rate of Return (L2 / L1)	-19.52%	5.20%
4	Required Rate of Return	10.9300%	11.0000%
5	Required Operating Income (L4 * L1)	$ 74,328	$ 70,130
6	Required Operating Margin (L5 / L11)	8.05%	10.00%
7	Operating Income Deficiency (L5 - L2)	$ 207,053	$ 36,982
8	Gross Revenue Conversion Factor	1.29930	1.26876
9	Increase In Gross Revenue (L7 * L6)	$ 269,023	$ 46,922
10	Adjusted Test Year Revenue	$ 654,048	$ 654,048
11	Proposed Annual Revenue (L8 + L9) Note A	$ 923,071	$ 700,970
12	Require Increase in Revenue (%) (L8/L9)	41.13%	7.17%

Pine Water Company
Docket No. W-03512A-03-0279
Test Year Ended December 31, 2002

Schedule CMF-2
Surrebuttal

Line No.			
	Calculation of Gross Revenue Conversion Factor:		
1	Recommended Revenue Increase:		
2	Billings		1.000000
3	Combined Federal and State Income Tax Rate	20.92280%	
4	Uncollectible Rate After Income Taxes	0.26031%	
5	Total Tax Rate		21.18311%
6	Gross Revenue Conversion Factor		**1.268764**
	Calculation of Effective Income Tax Rate:		
7	Operating Income Before Taxes (Arizona Taxable Income)	100.00000%	
8	Arizona State Income Tax Rate	6.96800%	
9	Federal Taxable Income (L5 - L6)	93.03200%	
10	Applicable Federal Income Tax Rate (Line 32)	15.00000%	
11	Effective Federal Income Tax Rate (L7 x L8)	13.95480%	
12	Combined Federal and State Income Tax Rate (L6 +L9)	20.92280%	
	Calculation of Uncollectible Rate After Income Taxes:		
13	Uncollectible Rate		0.32918%
14	Combined Federal and State Income Tax Rate	20.92280%	
15	1 minus Combined Federal and State Income Tax Rate		79.07720%
16	Uncollectible Rate After Income Taxes		0.26031%
	Revenue Reconciliation:		
17	Recommended Increase in Revenue (from REL-1, L8)	$ 46,922	
18	Uncollectible Rate	0.329180%	
19	Required Increase in Revenue to Provide for Uncollectibles		$ 154
20	Recommended Increase in Revenue (from REL-1,L8)	$ 46,922	
21	Required Increase in Revenue to Provide for Uncollectibles	154	
22	Incremental Taxable Income	$ 46,768	
23	Combined Federal and State Income Tax Rate	20.92280%	
24	Required Increase in Revenue to Provide for Income Taxes		9,785
25	Required Operating Income	$ 70,130	
26	Adjusted Test Year Operating Income (Loss)	33,147	
27	Required Increase in Operating Income		36,982
28	Total Required Increase In Revenue		$ 46,922

	Calculation of Income Tax:	Test Year		STAFF Recommended	
29	Revenue	$ 654,048		$ 700,970	
30	Less: Operating Expenses Excluding Income Taxes	$ 619,097		$ 619,252	
31	Less: Synchronized Interest	$ 26,330		$ 26,330	
32	Arizona Taxable Income	$ 8,620		$ 55,388	
33	Arizona State Income Tax Rate	6.968%		6.968%	
34	Arizona Income Tax		$ 601		$ 3,859
35	Federal Taxable Income	$ 8,020		$ 51,528	
36	Federal Income Tax @ 15%		$ 1,203		$ 7,729
37	Combined Federal and State Income Tax		$ 1,804		$ 11,589
				$ 9,785	
	Calculation of Interest Synchronization:				
38	Rate Base	$ 637,541			
39	Weighted Average Cost of Debt	4.130%			
40	Synchronized Interest	$ 26,330			

Pine Water Company
Docket No. W-03512A-03-0279
Test Year Ended December 31, 2002

Schedule CMF-3
Surrebuttal

RATE BASE - ORIGINAL COST

LINE NO.		(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	(C) STAFF AS ADJUSTED
1	Plant in Service	$ 1,967,030	375,760	$ 2,342,790
2	Less: Accumulated Depreciation	(1,228,209)	(17,668)	(1,245,877)
3	Net Plant in Service	$ 738,821	$ 358,092	$ 1,096,913
	LESS:			
4	Advances in Aid of Construction (AIAC)	(52,072)	-	(52,072)
5	Contributions in Aid of Construction (CIAC)	$ (958,323)	$ -	$ (958,323)
6	Less: Accumulated Amortization	494,931	-	494,931
7	Net CIAC	(463,392)	-	(463,392)
8	Total Advances and Contributions	(515,464)	-	(515,464)
9	Customer Deposits	(21,356)	-	(21,356)
10	Meter Advances	-	-	-
11	Deferred Income Tax Assets	369,000	(369,000)	-
	ADD:			
12	Working Capital	109,032	(31,584)	77,448
15	**Total Rate Base**	$ 680,033	$ (42,492)	$ 637,541

Pine Water Company
Docket No. W-03512A-03-0279
Test Year Ended December 31, 2002

Schedule CMF-9
Surrebuttal

OPERATING INCOME - TEST YEAR AND STAFF PROPOSED

LINE NO.	DESCRIPTION	[A] COMPANY TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
	REVENUES:					
1	Metered Water Revenue	$ 645,612		$ 645,612	$ 46,922	$ 692,534
2	Unmetered Water Revenue	-		-		-
3	Other Water Revenue	8,436		8,436		8,436
4	Total Operating Revenues	$ 654,048	$ -	$ 654,048	$ 46,922	$ 700,970
5						
6	*EXPENSES:*					
7	Salaries and Wages	$ 125,296	-	$ 125,296		$ 125,296
8	Pension and Benefits	6,105	-	6,105		6,105
9	Purchased Water	64,262	(6,427)	57,835		57,835
10	Purchased Power	36,942	-	36,942		36,942
11	Chemicals	604	-	604		604
12	Materials and Supplies	42,923	(17,630)	25,293		25,293
13	Regulatory Water Testing	7,758	-	7,758		7,758
14	Contractual Services - Engineering	-	-	-		-
15	Constractual Services - Accounting	38,328	-	38,328		38,328
16	Contractual Services - Legal	66,430	-	66,430		66,430
17	Contractual Services - Other	19,368	-	19,368		19,368
18	Overhead Allocation - G and A	71,092	-	71,092		71,092
19	Rental of Equipment	-	-	-		-
20	Transportation Expenses	176,144	(174,645)	1,499		1,499
21	Workmen's Comp	2,271	-	2,271		2,271
22	Insurances Medical/Dental	12,663	-	12,663		12,663
23	Telephone	2,631	-	2,631		2,631
24	Dues and Subscriptions	299	-	299		299
25	Bad Debt Expense	2,153	-	2,153	154	2,307
26	Miscellaneous Expenses	202	-	202		202
27	Office Supplies	4,080	-	4,080		4,080
28	Licenses and Permits	1,000	-	1,000		1,000
29	Repairs and Maintenance - Building	-	-	-		-
30	R and M Vehicles	-	-	-		-
31	Sales tax Expenses	(380)	380	-		-
32	Utility Regulatory Assessment Fee	272	-	272		272
33	CAWCD Costs	21,501	-	21,501		21,501
34	Rate Case Expense	50,000	(16,667)	33,333		33,333
35	Depreciation Expense	35,496	6,982	42,478		42,478
36	Other Taxes and Licenses	45	-	45		45
37	Property Taxes	45,239	(5,620)	39,619	-	39,619
38	Income Tax	(45,951)	47,755	1,804	9,785	11,589
39						
40	**Total Operating Expenses**	$ 786,773	$ (165,872)	$ 620,901	$ 9,940	$ 630,840
41						
42	**Operating Income (Loss)**	$ (132,725)	$ 165,872	$ 33,147	$ 36,982	$ 70,130

Pine Water Company
Docket No. W-03512A-032-0279
Test Year Ended December 31, 2002

Schedule CMF- 17
Surrebuttal

OPERATING INCOME ADJUSTMENT NO. 7 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENT	(C) STAFF AS ADJUSTMENT
1	2000 Annual Gross Revenues			$ 599,608
2	2001 Annual Gross Revenues			$ 655,846
3	2002 Annual Gross Revenues			$ 628,705
4	Plus Staff's Recommended Increase			$ 46,922
5	Subtotal (Lines 1 + 2 + 3 + 4)			$ 1,931,081
6	Three Year Average Calculation			3
7	Three Year Average (Line 5 / Line 6)			$ 643,694
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			$ 1,287,387
10	Plus: 10% of 2001 CWIP			-
11	Less: Net Book Vaule of Leased Vehicles			$ -
12	Full Cash Value (Line 9 + Line 10 - Line 11)			$ 1,287,387
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			$ 321,847
15	Composit Property Tax Rate (See Note B Below)			0.123100
16	**Staff Proposed Property Tax Expense (Line 14 x Line 15)**	$ 45,239	$ (5,620)	$ 39,619

References:
Column A: Company Schedule
Column B: Testimony
Column C, Line 16: Column (A) + Column (B)

Pine Water Company
Docket No. W-03512A-03-0279
Test Year Ended December 31, 2002

Schedule CMF-21

ANALYSIS OF WHEELING CHARGES

Line No			
1	Cost of Project Magnolia	$	449,598
2	Wheeling Charge-per 1,000 gallons	$	15.00
3	Gallons needed to recover cost of Project Magnolia (Line 9 divided by line 10)		29,973,200
4	Gallons transported in test year		11,643,000
5	Cost of transportation (per Company response to Staff's Data Request CF 9-3)	$	35,884
6	Cost per 1,000 gallons (Line 14 divided by line 13)	$	3.08
7	Gallons needed to recover cost of Project Magnolia (Line 9 divided by line 10)		29,973,200
8	Total cost of transportation (Line 15 multiplied by Line 16)	$	92,378
9	Cost of Project Magnolia	$	449,598
10	Total cost to be recovered (Line 17 plus line 18)	$	541,976
11	Wheeling Charge-per 1,000 gallons	$	15.00
12	Gallons needed to recover cost of Project Magnolia and transporation expenses (Line 19 divided by line 20)		36,131,741
13	Gallons transported in test year		11,643,000
14	Number of years required to recover total cost of Project Magnolia and transportation cost (Line 12 divided by line 13)		3.1
15	Gallons transported in test year		11,643,000
16	Wheeling Charge-per 1,000 gallons	$	15.00
17	Wheeling revenue (Line 25 times line 26)	$	174,645
18	Cost of transportation (per Company response to Staff's Data Request CF 9-3)	$	35,884
19	Operating income from Project Magnolia (Line 27 minus line 28)	$	138,761
20	Plant in Service-Project Magnolia	$	449,598
21	Less: Accumulated Depreciation	$	17,669
22	Net Plant - Project Magnolia (Line 20 minus line 21)	$	431,929
23	Rate of Return (Line 19 divided by line 22)		32.13%

SCOTT

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF PINE WATER COMPANY FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY, A RATE INCREASE AND FOR APPROVAL TO INCUR LONG-TERM DEBT	)	DOCKET NO. W-03512A-03-0279

SURREBUTTAL TESTIMONY

OF

MARLIN SCOTT, JR.

UTILITIES ENGINEER

UTILITIES DIVISION

JANUARY 20, 2004

TABLE OF CONTENTS

SUMMARY
PINE WATER COMPANY
DOCKET NO. W-03512A-03-0279

1. Staff recommends acceptance of the post-test year plant items for the Pumping Equipment and Meter Installation accounts and recommends against the acceptance of the Transmission and Distribution Mains account.

2. After reviewing the *Investigation of Groundwater Availability for the Pine/Strawberry Water Improvement District* report, Staff concludes that water availability is still questionable until the actual test/production well is drilled, cased, equipped with a pump and pump tested for sustained flow rate verification.

INTRODUCTION

Q. Please state your name, place of employment and job title.

A. My name is Marlin Scott, Jr. My place of employment is the Arizona Corporation Commission ("Commission"), Utilities Division, 1200 West Washington Street, Phoenix, Arizona 85007. My job title is Utilities Engineer.

Q. Are you the same Marlin Scott, Jr. who filed direct testimony in this proceeding?

A. Yes.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my surrebuttal testimony is to respond to certain testimony submitted by Pine Water Company, Inc. ("Company") concerning the post-test year plant items. I will also comment on the *Investigation of Groundwater Availability for the Pine/Strawberry Water Improvement District* ("*Investigation*") submitted by Intervener John O. Breninger.

POST-TEST YEAR PLANT

Q. Have you reviewed the Company's rebuttal testimony by Thomas J. Bourassa concerning the post-test year plant?

A. Yes. Mr. Bourassa disagreed with Staff's recommendation that the post-test year plant items should be disallowed for the reasons that the requested plant items, mainly the meter installations, were submitted in the rate application as "on-going". Mr. Bourassa believes that Staff's audit cut-off date is not reasonable. Based on his disagreement, Mr. Bourassa revised the Company's post-test year plant amount from $30,000 to $61,138.

Q. Please explain why Staff did not allow any of the post-test year plant?

A. Staff recommended against the acceptance of the post-test year plant because three of the initial plant projects were not constructed, resulting in these plant items being not used and useful. The last plant project, Meter Installations, was not allowed by Staff because only a small percentage of service installations had been completed (38% or 113 out of the requested 300 service installations) and because there was a declining trend in service requests and/or installations for the remainder of the year.

Q. What is the revised post-test year amount the Company is now requesting?

A. In Bourassa' Rebuttal Exhibit 1, the revised plant item amounts are; 1) Account No. 311 – Pumping Equipment at $1,015, 2) Account No. 331 – Transmission and Distribution Mains at $7,995, and 3) Account No. 334 – Meter and Water (?) Installation at $52,128, for a total of $61,138 at a selected cut-off date of October 31, 2003.

Q. Has Staff's position changed regarding the post-test year plant?

A. Partially. After reviewing the revised plant amounts and the selected cut-off date of October 31, 2003, Staff will recommend the acceptance of the post-test year plant items for the Pumping Equipment and Meter accounts.

Q. Could you explain why Staff is now accepting part of the requested post-test year plant items?

A. Yes. On December 8, 2003, I field inspected the revised post-test year plant items with Mr. Dean Shaffer, Operations Superintendent for the Company. For the Pumping Equipment, the Company's adjustment was for replacement of a submersible pump/motor at PWC Well 2 located at the Brookview Tank Site. (Invoice in the amount of $1,015 dated October 2,

2003.) The Company reported the retirement amount of the old well pump/motor at $988. Therefore, Staff will accept this adjustment.

For Transmission and Distribution Mains, Mr. Shaffer did not know of any water mains that were replaced. Mr. Shaffer only had knowledge of mains that were repaired due to leaks. Therefore, Staff concludes that the reported $7,995 amount was for water main repairs, not new water main plant additions.

For Meter and Water (?) Installation, Mr. Bourassa increased the requested amount from $30,000 to $61,138 due to new service line and meter installations and "meters installed to replace poorly functioning meters". Per the Company's response to Staff's Tenth Set of Data Request on December 22, 2003, the Company provided a detailed cost breakdown of new service line and meter installations (113 new service connections at $416.62 per connection = $47,078) and cost of the meter replacements (77 meters at $65.58 per meter = $5,050), totaling to $52,128. The Company also provided the retirement amount of the 77 meters at $3,480.

In the same data request, Staff also asked if the current tariffed service line and meter installation charge ($430 for a 5/8" x 3/4" meter size) was collected for the 113 new service connections. The Company's response appears to confirm that this was the case. Therefore, Staff concludes that the tariffed service line and meter installation charge was collected by the Company which would cover the requested $47,078 amount.

For the above reasons, Staff recommends the acceptance of the post-test year plant for the requested Pumping Equipment item ($1,015 with a retirement amount of $988) and Meter Installation item ($5,050 with a retirement amount of $3,480) as proposed by Mr. Bourassa

in his rebuttal testimony. Staff still recommends against the acceptance of requested Transmission and Distribution Mains because the reported $7,995 amount was for water main repairs, not new water main plant additions.

INVESTIGATION OF GROUNDWATER AVAILABILITY FOR THE PINE/STRAWBERRY WATER IMPROVEMENT DISTRICT ("INVESTIGATION REPORT")

Q. Has Staff reviewed the Intervener Mr. John O. Breninger's testimony and his submitted *Investigation Report* prepared for the Pine/Strawberry Water Improvement District?

A. Yes.

Q. Does Staff have any comments regarding the *Investigation Report*?

A. Yes. Based on an exploration well drilled in 2000, the *Investigation Report* stated that groundwater with good chemical quality for use as public water supply might be available and a test/production well site was selected in the Strawberry area. This test/production well is recommended to have a 12-inch casing to a depth of 2,110 feet with static water level anticipated at 1,505 feet. The *Investigation Report* anticipates that this test/production well will produce at least 150 gpm, however, the *Report* provides no guarantee.

Q. What is the estimated cost of the subject test/production well?

A. Under a range of assumptions, this production well could cost from $606,830 to $870,580.

Q. After having read the *Investigative Report*, what is Staff's conclusion regarding the availability of water?

A. That the actual amount of water available will remain questionable until the test/production well is drilled, cased, equipped with a pump and pump tested for sustained flow rate verification.

Q. Does this conclude your surrebuttal testimony?

A. Yes, it does.