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BEFORE THE ARIZONA CORPORATION COMMISSION

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AZ CORP COMMISSION
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COMMISSIONERS
KRISTIN K. MAYES, Chairman
GARY PIERCE
PAUL NEWMAN
SANDRA D. KENNEDY
BOB STUMP

IN THE MATTER OF THE APPLICATION OF ABRA WATER COMPANY, INC. FOR APPROVAL OF A RATE INCREASE

DOCKET NO. W-01782A-10-0224

STAFF'S NOTICE OF FILING DIRECT TESTIOMONY

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the Direct Testimony of Juan C. Manrique (specifically regarding Revenue Requirement and Rate Design; and Cost of Capital); and the Direct Testimony of Staff Witnesses Jian Liu, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 29th day of November, 2010.

Bridget Humphrey
Attorney, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007
(602) 542-3402

Original and thirteen (13) copies of the foregoing were filed this 29th day of November, 2010 with:

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Arizona Corporation Commission
DOCKETED
NOV 29 2010
DOCKETED BY

Copies of the foregoing were mailed this 29th day of November, 2010 to:

Kevin Larson, President
ABRA WATER COMPANY, INC.
P.O. Box 515
Paulden, AZ 86334

Monica A. Martinez

BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

IN THE MATTER OF THE APPLICATION OF ABRA WATER COMPANY, INC. AN ARIZONA CORPORATION, FOR APPROVAL OF A RATE INCREASE	DOCKET NO. W-01782A-10-0224

DIRECT

TESTIMONY

(REVENUE REQUIREMENT AND RATE DESIGN)

OF

JUAN C. MANRIQUE

PUBLIC UTILITIES ANALYST I

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

NOVEMBER 29, 2010

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SCHEDULES

EXECUTIVE SUMMARY
ABRA WATER COMPANY, INC.
DOCKET NO. W-01782A-10-0224

Abra Water Company, Inc. ("Abra" or "Company") is an Arizona for-profit Class C public service corporation providing water service to approximately 630 customers in and around the city of Paulden, County of Yavapai, Arizona. On June 4, 2010, Abra filed a general rate application. The application shows that Abra posted a $30,528 adjusted operating loss for the test year that ended December 31, 2009. Abra requests a revenue increase of $90,137, or 38.92 percent, over test year revenue of $231,584 to provide a $43,053 operating income for an 8.66 percent rate of return on a $496,949 fair value rate base.

The testimony of Mr. Juan C. Manrique presents Staff's recommendation in the areas of rate base, operating income, revenue requirement, rate design and cost of capital (presented separately). Staff recommends a revenue increase of $82,897, or 35.80 percent, over test year revenue of $231,584 to provide a 7.50 percent rate of return on an original cost rate base of $466,276. Staff's adjustments resulted in a $30,673 reduction in rate base. Staff's recommendation reflects four rate base adjustments and seven operating income adjustments.

The Company presently has an inverted three-tier rate design with no gallons included in the minimum monthly charge. The break-over points are at 3,000 and 10,000 gallons for all rate groups. A school is the Company's only non-residential customer.

The Company proposes to continue the existing rate structure by increasing all minimum and commodity rates in a range between 34 percent and 37 percent except that the percent increase for the minimum monthly charge for 5/8 x 3/4-inch meters is 51 percent.

Staff recommends continued use of an inverted three-tier rate design with no gallons included in the minimum monthly charge for 5/8 x 3/4-inch and 3/4-inch meters. Staff recommends a two-tier rate structure for all meters 1-inch and above. Staff recommends increasing the spread between the tier rates to encourage efficient use of water. Staff's recommended rate design would generate Staff's recommended revenue requirement of $314,481 composed of $291,842 from metered water sales and $22,639 from other revenues. The typical residential water bill with median use of 5,109 gallons would increase by $4.73, or 19.66 percent, from $24.04 to $28.76.

I. INTRODUCTION

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

A. My name is Juan C. Manrique. I am a Public Utilities Analyst 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. Please describe your educational background and professional experience.

A. I graduated from Arizona State University and received a Bachelor of Science degree in Finance. My course of studies included courses in corporate and international finance, investments, accounting, statistics, and economics. I began employment as a Staff Public Utilities Analyst in October 2008. My professional experience includes two years as a Loan Officer with a homebuilder and as an Associate for an Investor Relations firm.

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

A. I am responsible for the examination of financial and statistical information included in utility rate applications as well as the performance of studies to estimate the cost of capital component in rate filings to determine the overall revenue requirement and analyze requests for financing authorizations. I also develop revenue requirements, design rates, and prepare written reports, testimony and schedules to present Staff's recommendations to the Commission.

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

A. The purpose of my testimony is to present Staff's analysis and recommendations regarding the Abra Water Company, Inc.'s ("Abra" or "Company") application for a permanent rate increase. I am presenting recommendations in the areas of rate base, operating income, revenue requirement and rate design. I am also presenting cost of

capital testimony in a separate document. Staff witness Jian Liu is presenting the engineering analysis and recommendations.

Q. What is the basis of Staff's recommendations?

A. I have performed a regulatory audit of the Company's records to determine whether sufficient, relevant and reliable evidence exists to support the proposals in Abra's rate application. My regulatory audit consisted of the following: (1) examining and testing Abra's accounting ledgers, reports and supporting documents; (2) checking the accumulation of amounts in the records; (3) tracing recorded amounts to source documents; and (4) verifying that the Company-applied accounting principles were in accordance with the National Association of Regulatory Commissioners ("NARUC") Uniform System of Accounts ("USOA").

Q. How is your testimony organized?

A. My testimony is presented in eleven sections. Section I is this introduction. Section II provides a background of the Company. Section III is a summary of consumer service issues. Section IV is a summary of proposed revenues. Section V is a summary of Staff's rate base and operating income adjustments. Section VI presents Staff's rate base recommendations. Section VII presents Staff's operating income recommendations. Section VIII discusses rate of return. Section IX discusses rate design.

Q. Have you prepared any schedules to accompany your testimony?

A. Yes. I prepared schedules JCM-1 to JCM-17.

II. BACKGROUND

Q. Would you please review the pertinent background information associated with the Company's application for a permanent rate increase?

A. Abra is a class C public service corporation that provides water service to approximately 630 customers in the vicinity of Paulden, County of Yavapai, Arizona. On June 4, 2010, Abra filed an application for approval of permanent rates and charges for water service, and on August 19, 2010, Staff filed a letter declaring the application sufficient. Abra's application asserts that an increase in revenues is required to recover operating expenses and to provide debt service coverage and an 8.66 percent return on fair value rate base ("FVRB"). The Company did not file reconstruction cost new information, accordingly, its FVRB is equal to its original cost rate base ("OCRB").

Q. What test year did Abra use in its filing?

A. Abra's rate filing is based on the twelve-month period that ended December 31, 2009.

Q. When were Abra's present rates established?

A. The Commission Decision No. 65917, dated May 16, 2003, established its present permanent rates.

Q. Does Abra have any other cases currently pending before the Commission?

A. Yes, on November 15, 2010, the Company filed a request to issue $75,000 of debt as two separate loans in the amounts of $50,000 and $25,000 to finance the purchase of arsenic replacement media.[1]

[1] Docket No. W-01782A-10-0465.

III. CONSUMER SERVICE

Q. Please provide a brief summary of customer complaints received by the Commission regarding Abra.

A. Staff reviewed the Commission's records for the period January 1, 2007, through September 17, 2010, and found 1 complaint and 6 opinions opposed to the rate increase. The Company is in good standing with Corporations Division. The Company is not currently in compliance with Arizona Department of Revenue ("ADOR") due to missing sales and income tax forms. Abra stated that it has submitted all paperwork and is current on all taxes with ADOR. ADOR has confirmed to Staff that the Company has submitted additional documentation that is currently under review. The Company should provide confirmation of ADOR compliance in this Docket if and when it is received. Staff will provide an update on the Company's ADOR compliance in its Surrebuttal Testimony and/or during the hearing, as is appropriate.

IV. SUMMARY OF PROPOSED REVENUES

Q. What revenue requirement is Abra proposing?

A. The Company's application proposes total operating revenue of $321,721, an increase of $90,137, or 38.92 percent, over its test year revenue of $231,584. The Company's proposed revenue, as filed, would provide an operating income of $43,053 for an 8.66 percent rate of return on the proposed $496,949 fair value rate base, which is the same as the proposed original cost rate base.

Q. What is Staff's revenue requirement recommendation?

A. Staff recommends revenues of $314,481, an $82,897 (35.80 percent) increase over test year revenues of $231,584, to provide an operating income of $34,971 for a 7.50 percent rate of return on $466,276 FVRB.

V. SUMMARY OF STAFF'S RATE BASE AND OPERATING INCOME ADJUSTMENTS

Q. Please summarize Staff's rate base and operating income adjustments.

A. Rate Base:

Water Treatment Equipment – This adjustment reclassifies $145,002 by removing it from the Water Treatment Equipment account 320 and placing $65,102 into account 320.1 Water Treatment Plant and $79,900 into account 320.3 Media for Arsenic Treatment.

Accumulated Depreciation – This adjustment increases Accumulated Depreciation by $30,673 to reflect application of the authorized depreciation rates for the intervening years since the prior rate decision.

B. Operating Income:

Depreciation expense – This adjustment increases operating expenses by $16,669 to reflect application of Staff's recommended depreciation rates to the Staff-recommended plant amounts.

Office Supplies Expense and Miscellaneous Expense – This adjustment reclassifies $1,164 from Office Supplies Expense to Miscellaneous Expense due to a misclassification of credit card processing fees.

Miscellaneous Expense (Debt Issuance Costs) – This adjustment decreases miscellaneous expense by $10,689 to remove debt issuance costs that were incorrectly classified.

Rate Case Expense – This adjustment provides a $2,500 normalized annual rate case expense allowance. The Company did not request any rate case expense.

Water Testing Expense – This adjustment decreases water testing expenses by $145 to recognize Staff's recommended amount.

Property Taxes – This adjustment increases test year property taxes by $2,378 to reflect application of the modified version of ADOR's property tax methodology which the Commission has consistently adopted.

Test Year Income Taxes – This adjustment reduces test year income tax expense by $11,588 to reflect application of statutory state and federal income tax rates to Staff's adjusted taxable income.

VI. RATE BASE

Fair Value Rate Base

Q. Does Abra's application include schedules with elements of a Reconstruction Cost New Rate Base?

A. No. The Company's application does not request recognition of a Reconstruction Cost New Rate Base. Accordingly, Staff has treated the Company's OCRB as its FVRB.

Rate Base Summary

Q. Please summarize Staff's rate base recommendation.

A. Staff recommends a $466,276 OCRB, a $30,673 reduction from the Company's proposed $496,949 rate base. Staff's recommendation results from the rate base adjustments described below.

Rate Base Adjustment No. 1 – Water Treatment Equipment

Q. What did the Company propose with respect to the Water Treatment Equipment Account No. 320?

A. The Company included in account 320 the cost of an arsenic treatment plant, as well as the costs related to arsenic media.

Q. Is this an appropriate classification?

A. No. Account 320 represents an aggregate total for the entire water treatment processing system which includes three separate sub-accounts.

Q. What adjustments did Staff propose?

A. Staff reclassified $145,002 by removing it from the Water Treatment Equipment account 320 and adding $65,102 to Water Treatment Plant account 320.1 and $79,900 to Media for Arsenic Treatment account 320.3. The Water Treatment Plant includes the cost of the arsenic treatment plant and Media for Arsenic Treatment includes the cost of arsenic media.

Rate Base Adjustment No. 2 – Accumulated Depreciation

Q. What does the Company propose with respect to the Accumulated Depreciation account?

A. The Company proposes a $502,485 balance in the Accumulated Depreciation account.

Q. Please explain the adjustments made by Staff to the Company's Accumulated Depreciation amount.

A. Staff recommends an increase to the Accumulated Depreciation account of $30,673 to $533,158, as shown in Schedule JCM-6. This adjustment removes accumulated

depreciation recorded for Organization and Franchises to comply with the non-depreciable characteristics of these accounts according to the NARUC USOA. The adjustment also reflects application of the authorized depreciation rates by account for the intervening years since the prior rate decision, and it reflects accumulation of depreciation on arsenic media.

VII. OPERATING INCOME

Revenues

Q. Please summarize the results of Staff's examination of test year operating income.

A. Staff determined a $29,653 operating loss for the adjusted test year, an $875 lesser loss than the Company's $30,528 adjusted test year operating loss. Staff's recommendation results from the operating income adjustments described below.

Operating Income Adjustment No. 1 – Depreciation Expense

Q. What is the Company proposing for Depreciation expense?

A. The Company proposes its recorded test year depreciation expense of $36,107.

Q. Did the Company record depreciation expense in accordance with the authorized depreciation rates?

A. No. The Company recorded depreciation/amortization on the Organization and Franchises accounts, which according to the NARUC USOA are non-depreciable accounts. Also, when the Company installed an arsenic treatment plant in 2007, it included arsenic media with an approximate service life of 3 years (or 33.33 percent depreciation rate) in Water Treatment Equipment account 320, which has a 3.33 percent authorized depreciation rate. Staff recommends segregating the arsenic media into a separate sub-account 320.3 Media for Arsenic Treatment with a 33.33 percent depreciation rate.

Q. Did Staff recalculate depreciation expense?

A. As shown in Schedule JCM-9, Staff recalculated depreciation expense by applying Staff's recommended depreciation rates to Staff's recommended plant by account. Staff calculated depreciation expense of $52,776, an increase of $16,669 from the $36,107 proposed by the Company.

Q. What is Staff recommending?

A. Staff recommends $52,776 for Depreciation expense, a $16,669 increase from the Company's proposed amount, as shown in Schedules JCM-8 and JCM-9.

Operating Income Adjustment No. 2 – Office Supplies Expense and Miscellaneous Expense

Q. What is the Company proposing for test year Office Supplies Expense and Miscellaneous Expense?

A. Abra proposes $8,292 for Office Supplies Expense and $10,595 for Miscellaneous Expense.

Q. Were these amounts consistent with previous years' financial data?

A. No. Office Supplies Expense was substantially higher than previous years' financial statements. In response to Staff's inquiry regarding this difference, Abra stated that the Company had misclassified $1,164 of credit card processing fees under Office Supplies Expense.

Q. What is Staff recommending?

A. Staff recommends that Office Supplies Expense be reduced by $1,164 and Miscellaneous Expense be increased by $1,164 as a reclassification of credit card processing fees, as shown in Schedules JCM-8 and JCM-10.

Operating Income Adjustment No. 3 – Miscellaneous Expense (Debt Issuance Costs)

Q. Are there any other Staff adjustments to Miscellaneous Expense?

A. Yes. The Company also included $10,689 of administrative fees associated with its two outstanding WIFA loans in its Miscellaneous Expense calculation. These administrative fees are considered debt issuance costs. NARUC's USOA specifies that debt issuance costs are a component of interest expense, and Staff's cost of debt reflects the specified treatment, i.e., these costs are amortized over the life of the loans as a component of interest expense.

Q. What is Staff recommending?

A. Staff recommends removing the $10,689 loan administrative fees from Miscellaneous Expense, as shown in Schedules JCM-8 and JCM-11.

Operating Income Adjustment No. 4 – Rate Case Expense

Q. Did the Company propose an amount for Rate Case Expense in its application?

A. No. Abra did not propose an amount for rate case expense in its application. However, in response to a query from Staff in regard to rate case expense, the Company proposed a total Rate Case Expense of $7,500.

Q. What is Staff's recommendation?

A. Staff concludes that the rate case expense amount anticipated by Abra is reasonable. Accordingly, Staff recommends $2,500 for Rate Case Expense to reflect a normalized amount assuming a three-year interval between rate cases, as shown in Schedules JCM-8 and JCM-12.

Operating Income Adjustment No. 5– Water Testing Expense

Q. What did the Company propose for Water Testing Expense in the test year?

A. Abra proposes its test year recorded amount of $5,571 for Water Testing Expense.

Q. What is Staff's recommendation?

A. Staff estimated an on-going level of water testing expense of $5,426. Staff recommends annual water testing expense of $5,426, as shown in Schedules JCM-8 and JCM-13.

Operating Income Adjustment No. 6 – Property Tax Expense

Q. What is the Company proposing for test year property tax expense?

A. Abra proposes its test year recorded amount of $6,506 for test year property taxes.

Q. What method has the Commission typically adopted for Class C water utilities to determine property tax expense for ratemaking purposes?

A. The Commission's practice in recent years has been to use a modified ADOR methodology for water utilities.

Q. Did the Company use the modified ADOR method to calculate its test year property tax expense?

A. No. The Company used its actual real estate tax assessments to determine its test year property tax expense.

Q. Using the modified ADOR property tax method, what is the primary factor for determining the amount of property tax calculated?

A. The results from the modified ADOR methodology are primarily dependent upon revenue inputs for three years. In the same manner as each operating income has a specific income

tax expense, there is a specific property tax expense for each three-year set of revenue inputs. Therefore, the property tax expense calculated for the test year is different than the property tax calculated for the authorized revenue. Only when the revenue input for each of the three years is equal to the test year revenue will the resulting calculation reflect property tax expense that correlates with the test year revenue. Since under the modified ADOR method property tax expense is revenue dependent in the same manner as is income tax expense, property tax expense must be recalculated to reflect the authorized revenue. Using inputs of one year of authorized revenue and two years of test year revenue in the modified ADOR method provides the average expected property tax over a subsequent three-year period. Use of one year of authorized revenue and two years of test year revenue is consistent with the tax assessment lags used by ADOR.

Q. Has Staff developed a solution to address the dependent relationship between Property Tax expense and revenues?

A. Yes. Staff has included a factor for property taxes in the gross revenue conversion factor ("GRCF") (see Schedule JCM-2) that automatically adjusts property taxes for changes in revenue in the same way that income taxes are adjusted for changes in operating income. This flexible method will accurately reflect property tax expense at any authorized revenue level. This refinement allows for accurate calculation of property tax expense at the test year revenue level, and for recovery of any additional property tax expense incurred due to any increase in authorized revenue. It also removes any necessity to present on-going property tax expense as test year property tax expense. In using the GRCF to calculate the correct revenue requirement, the test year operating income must be determined with property tax expense derived from the modified ADOR method using test year revenue as the input for all three years.

Q. What is Staff recommending for test year property tax expense?

A. Staff recommends $8,884 for test year property tax expense, a $2,378 increase from the Company's proposed amount, as shown in Schedules JCM-8 and JCM-14.[2] Staff further recommends adoption of its GRCF that includes a factor for property tax expense, as shown in Schedule JCM-2.

Operating Income Adjustment No. 7 – Income Tax Expense

Q. What is the Company proposing for test year income tax expense?

A. Abra is proposing $50 for test year income tax expense.

Q. Is the Company's proposed test year income tax expense compatible with use of a GRCF for calculating the revenue requirement?

A. No. In order for the GRCF to properly and directly calculate the recommended revenue requirement, a negative income tax expense must be calculated on the taxable loss in the test year.

Q. How did Staff calculate Test Year Income Tax Expense?

A. Staff calculated test year income tax expense of negative $11,538 by applying the statutory State and Federal income tax rates to Staff's adjusted test year taxable income, as shown in Schedule JCM-2.

Q. What is Staff recommending?

A. Staff recommends test year income tax expense of a negative $11,538, as shown in Schedules JCM-2 and JCM-15.

[2] Schedule JCM-14 also shows calculations for Property Tax Expense for Staff's recommended revenue.

VIII. RATE OF RETURN

Q. Please provide an overview of Staff's rate of return.

A. Staff recommends adoption of a 7.50 percent overall rate of return based on the Company's actual capital structure consisting of 55.3 percent debt and 44.7 percent equity and a 5.25 percent cost of debt and a 10.3 percent return of equity ("ROE"). Staff's ROE recommendation includes a 0.8 percent upward adjustment to reflect a higher financial risk in the Company's capital structure compared to that of the sample companies. Staff's testimony on cost of capital/rate of return is presented in a separate document.

IX. RATE DESIGN

Present Rate Design

Q. Please provide an overview of the Company's present rates.

A. The following is a general description of the present rate structure. Details of the rate design are presented in Schedule JCM-16. The present rate design consists of an inverted rate structure that includes three tiers with break-out points at 3,000 and 10,000 gallons for all meter sizes and no gallons included in the minimum monthly charge. The rate for each tier is uniform among the meter sizes. Currently, with the exception of a school on a 2-inch meter, all customers are residential using a 5/8 x 3/4-inch meter. The minimum monthly charge for a 5/8 x 3/4-inch meter is $11.55.

Company's Proposed Water Rate Design

Q. Please provide an overview of the Company's proposed rate structure.

A. The Company proposes to continue the existing rate structure by increasing all minimum monthly charges and commodity rates in a range between 34 percent and 37 percent except that the percent increase for the minimum monthly charge for 5/8 x 3/4-inch meters is 51 percent.

Q. Is the Company proposing any changes to its service charges?

A. Yes. The Company's proposed service charges are presented in Schedule JCM-16.

Q. Has the Company submitted proposed tariff language specifying the terms and conditions as well as its rates and charges?

A. No. The Company's application proposes only rates and charges. No specific tariff language is proposed.

Staff's Recommended Rate Design

Q. Please provide a description of Staff's recommended rate structure.

A. Staff recommends continued use of an inverted three-tier rate design with no gallons included in the minimum monthly charge for 5/8 x 3/4-inch and 3/4-inch meters. Staff recommends a two-tier rate structure for all meters 1-inch and above. The first tier for the 5/8 x 3/4-inch and 3/4-inch meters carves out 3,000 gallons from the first tier of the larger meters as a separate, lower rate to reflect an estimate of non-discretionary use. Staff recommends increasing the spread between the tier rates to encourage efficient use of water.

Q. Did Staff prepare schedules showing the present, Company-proposed, and Staff-recommended monthly minimums and commodity rates for each rate class?

A. Yes. Staff's Direct Testimony Schedule JCM-16 shows the present monthly fixed charges and commodity rates, the Company's proposed monthly fixed charges and commodity rates and Staff's recommended monthly fixed charges and commodity rates.

Q. Did Staff prepare a schedule showing the average and median monthly bill under present rates, the Company's proposed rates, and Staff's recommended rates?

A. Yes. Staff's Direct Testimony Schedule JCM-17 presents the typical bill analysis for a residential customer using present rates, the Company's proposed rates and Staff's recommended rates.

Q. What is the impact to the median customer bill with Staff's rate design?

A. The typical residential water bill with median use of 5,109 gallons would increase by $4.73, or 19.66 percent, from $24.04 to $28.76.

Q. Does Staff agree with the Company's proposed changes to service charges?

A. While Staff agrees with most of the Company's proposed change to service charges, Staff does not agree that the Company should charge a $5.00 fixed charge as well as a 1.5 percent per month charge for late payment. Additionally, since the Company may at times install meters on existing service lines, it would be appropriate for some customers to only be charged for the meter installation. Therefore, Staff recommends approval of the proposed total charges, with separate charges for Service Line and Meter Installation, as shown in Schedule JCM-16.

Q. Does Staff recommend any new tariffs not proposed by the Company?

A. Yes, Staff recommends establishing a tariff to private fire sprinklers equal to 2 percent of the monthly minimum for a comparable size meter connection but not less than $10.00 per month.

Q. Will Staff's recommended rate design generate Staff's recommended revenue requirement?

A. Staff's recommended rate design will generate Staff's recommended revenue requirement of $314,481 composed of $291,842 from metered water sales and $22,639 from other water revenues.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-1

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY ORIGINAL COST	(B) COMPANY FAIR VALUE	(C) STAFF ORIGINAL COST	(D) STAFF FAIR VALUE
1	Adjusted Rate Base	$ 496,949	$ 496,949	$ 466,276	$ 466,276
2	Adjusted Operating Income (Loss)	$ (30,528)	$ (30,528)	$ (29,653)	$ (29,653)
3	Current Rate of Return (L2 / L1)	-6.14%	-6.14%	-6.36%	-6.36%
4	Required Rate of Return[1]	8.66%	8.66%	7.50%	7.50%
5	Required Operating Income[1] (L4 * L1)	$ 43,053	$ 43,053	$ 34,971	$ 34,971
6	Operating Income Deficiency[1] (L5 - L2)	$ 73,581	$ 73,581	$ 64,624	$ 64,624
7	Gross Revenue Conversion Factor[1]	1.2250	1.2250	1.2828	1.2828
8	Required Revenue Increase (L7 * L6)	$ 90,137	$ 90,137	**$ 82,897**	**$ 82,897**
9	Adjusted Test Year Revenue	$ 231,584	$ 231,584	$ 231,584	$ 231,584
10	Proposed Annual Revenue (L8 + L9)	$ 321,721	$ 321,721	$ 314,481	$ 314,481
11	Required Increase in Revenue (%)	38.92%	38.92%	35.80%	35.80%

[1] Amounts in Colums [A] and [B] Calculated by Staff

References:
Column (A): Company Application
Column (B): Company Application
Column (C): Staff Schedules JCM-2 , JCM-3 & JCM-7
Column (D): Staff Schedules JCM-2 , JCM-3 & JCM-7

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-2

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
	Calculation of Gross Revenue Conversion Factor:				
1	Revenue	100.0000%			
2	Uncollectible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Tax Rate (Line 17) + Property Tax Factor (Line 22)	22.0426%			
5	Subtotal (L3 - L4)	77.9574%			
6	**Revenue Conversion Factor (L1 / L5)**	1.282751717			
	Calculation of Uncollectible Factor:				
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 17)	21.0328%			
9	One Minus Combined Income Tax Rate (L7 - L8)	78.9672%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0			
	Calculation of Effective Tax Rate:				
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	6.9680%			
14	Federal Taxable Income (L12 - L13)	93.0320%			
15	Applicable Federal Income Tax Rate (Line 44)	15.1183%			
16	Effective Federal Income Tax Rate (L14 x L15)	0.140648349			
17	Combined Federal and State Income Tax Rate (L13 +L16)	21.0328%			
	Calculation of Effective Property Tax Factor				
18	Unity	100.0000%			
19	Combined Federal and State Tax Rate (Line 17)	21.0328%			
20	One Minus Combined Income Tax Rate (L18 - L19)	78.9672%			
21	Property Tax Factor (JCM-14, L24)	1.2787%			
22	Effective Property Tax Factor (L 21 * L 22)	1.0098%			
23	Combined Federal and State Tax and Property Tax Rate (L17+L22)		22.0426%		
24	Required Operating Income (Schedule JCM-1, Line 5)	$ 34,971			
25	AdjustedTest Year Operating Income (Loss) (Schedule JCM-7, Line 33)	$ (29,653)			
26	Required Increase in Operating Income (L24 - L25)		$ 64,624		
27	Income Taxes on Recommended Revenue (Col. (D), L52)	$ 5,675			
28	Income Taxes on Test Year Revenue (Col. (B), L52)	$ (11,538)			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		$ 17,213		
30	Recommended Revenue Requirement (Schedule JCM-1, Line 10)	$ 314,481			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncollectible Expense on Recommended Revenue (L24 * L25)	$ -			
33	Adjusted Test Year Uncollectible Expense	$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32 - L33)		$ -		
35	Property Tax with Recommended Revenue (JCM-14, L19)	$ 9,944			
36	Property Tax on Test Year Revenue (JCM-14, L 16)	$ 8,884			
37	Increasee in Property Tax Due to Increase in Revenue (JCM-14, L22)		$ 1,060		
38	Total Required Increase in Revenue (L26 + L30 + L34+L37)		$ 82,897		
	Calculation of Income Tax:	Test Year		STAFF Recommended	
39	Revenue (Schedule JCM-9, Col.[C], Line 5 & Sch. JCM-1, Col. [B], Line 10)	$ 231,584		$ 314,481	
40	Operating Expenses Excluding Income Taxes	$ 272,775		$ 273,835	
41	Synchronized Interest (L47)	$ 13,522		$ 13,522	
42	Arizona Taxable Income (L39 - L40 - L41)	$ (54,713)		$ 27,124	
43	Arizona State Income Tax Rate	6.9680%		6.9680%	
44	Arizona Income Tax (L42 x L43)		$ (3,812)		$ 1,890
45	Federal Taxable Income (L42 - L44)	$ (50,900)		$ 25,234	
46	Federal Tax on First Income Bracket ($1 - $50,000) @ 15%	$ (7,500)		$ 3,785	
47	Federal Tax on Second Income Bracket ($50,001 - $75,000) @ 25%	$ (225)		$ -	
48	Federal Tax on Third Income Bracket ($75,001 - $100,000) @ 34%	$ -		$ -	
49	Federal Tax on Fourth Income Bracket ($100,001 - $335,000) @ 39%	$ -		$ -	
50	Federal Tax on Fifth Income Bracket ($335,001 -$10,000,000) @ 34%	$ -		$ -	
51	Total Federal Income Tax		$ (7,725)		$ 3,785
52	Combined Federal and State Income Tax (L35 + L42)		$ (11,538)		$ 5,675
53	Applicable Federal Income Tax Rate [Col. (D), L42 - Col. (B), L42] / [Col. (C), L36 - Col. (A), L36]				15.12%
	Calculation of Interest Synchronization:				
54	Rate Base (Schedule JCM-3, Col. [C], Line (14))	$ 466,276			
55	Weighted Average Cost of Debt (Cost of Capital Schedule JCM-1)	2.90%			
56	Synchronized Interest (L54 X L55)	$ 13,522			

ABRA WATER COMPANY, INC. Schedule JCM-3
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

RATE BASE - ORIGINAL COST

LINE NO.		(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	REF	(C) STAFF AS ADJUSTED
1	Plant in Service	$ 1,419,695	$ -		$ 1,419,695
2	Less: Accumulated Depreciation	502,485	30,673		533,158
3	Net Plant in Service	$ 917,210	$ (30,673)		$ 886,537
	LESS:				
4	Contributions in Aid of Construction (CIAC)	$ 320,237	$ -		$ 320,237
5	Less: Accumulated Amortization	200,895	-		200,895
6	Net CIAC	$ 119,342	$ -		$ 119,342
7	Advances in Aid of Construction (AIAC)	288,675	-		288,675
8	Customer Deposits	12,244	-		12,244
9	Deferred Income Tax Credits	-	-		-
	ADD:				
10	Unamortized Finance Charges	-	-		-
11	Deferred Tax Assets	-	-		-
12	Working Capital	-	-		-
13	Intentionally Left Blank	-	-		-
14	**Original Cost Rate Base**	$ 496,949	$ (30,673)		$ 466,276

References:
Column (A), Company Application Page Nos. 14,15, 22
Column [B]: Column [C] - Column [A]
Column [C], JCM-4

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-4

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	JCM-5 [B] Trmt Plant ADJ #1	JCM-6 [C] Accum Depr ADJ #2	[D] STAFF ADJUSTED
	PLANT IN SERVICE:					
1	301	Organization Cost	$ 508	$ -	$ -	$ 508
2	302	Franchise Cost	787	-	-	787
3	303	Land and Land Rights	15,044	-	-	15,044
4	304	Structures and Improvements	72,787	-	-	72,787
5	307	Wells and Springs	63,078	-	-	63,078
6	311	Electrical Pumping Equipment	50,877	-	-	50,877
7	320	Water Treatment Equipment	145,002	(145,002)	-	-
8	320.1	Water Treatment Plants	-	65,102	-	65,102
9	320.2	Solution Chemical Feeders	4,654	-		4,654
10	320.3	Media For Arsenic Treatment		79,900		79,900
11	330	Distribution Reservoirs & Standpipe	-	-	-	-
12	330.1	Storage Tanks	197,626	-	-	197,626
13	330.2	Pressure Tanks	-	-	-	-
14	331	Transmission and Distribution Mains	659,578	-	-	659,578
15	333	Services	133,378	-	-	133,378
16	334	Meters & Meter Installations	35,125	-	-	35,125
17	335	Hydrants	-	-	-	-
18	336	Backflow Prevention Devices	-	-	-	-
19	339	Other Plant & Miscellaneous Equipment	9,890	-	-	9,890
20	340	Office Furniture & Fixtures	278	-	-	278
21	340.1	Computers & Software	6,098	-	-	6,098
22	341	Transportation Equipment	20,280	-	-	20,280
24	343	Tools and Work Equipment	65	-	-	65
25	344	Laboratory Equipment	-	-	-	-
26	345	Power Operated Equipment	-	-	-	-
27	346	Communications Equipment	-	-	-	-
28	347	Miscellaneous Equipment	95	-	-	95
29	348	Other Tangible Plant	4,545	-	-	4,545
31		Rounding Amount	-	-	-	-
32		Subtotal Plant in Service	$ 1,419,695	$ -	$ -	$ 1,419,695
33						
34	Add:					
35	Other 1	Construction Work in Progress	-		-	-
36	Other 2	General Office Plant Allocation	-	-		-
37	Less:					
38	Other 3	Post Test Year Plant	-	-	-	-
39	Other 4	General Office Plant Allocation	-	-	-	-
40						
41	Total Plant in Service:		$ 1,419,695	$ -	$ -	$ 1,419,695
42	Less: Accumulated Depreciation (Company App. Page 15)		502,485	-	30,673	$ 533,158
43	Intentionally Left Blank		-	-	-	-
44	Net Plant in Service (L59 - L 60)		$ 917,210	$ -	$ (30,673)	$ 886,537
45						
46	*LESS:*					
47	Contributions in Aid of Construction (CIAC)		$ 320,237	$ -	$ -	320,237
48	Less: Accumulated Amortization		200,895	-	-	200,895
49	Net CIAC (L25 - L26)		$ 119,342	$ -	$ -	119,342
50	Advances in Aid of Construction (AIAC)		288,675	-	-	288,675
51	Customer Deposits		12,244	-	-	12,244
52	Deferred Income Taxes		-	-	-	-
53						
54	*ADD:*					
55	Unamortized Finance Charges		-	-	-	-
56	Deferred Tax Assets		-	-	-	-
57	Working Capital (Inventory & Supplies)		-	-	-	-
58	Regulatory Asset (Liability)			-	-	-
59	**Original Cost Rate Base**		$ 496,949	$ -	$ (30,673)	$ 466,276

References:
Column [A] Company Application Page 15

References:

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-5

ORIGINAL COST RATE BASE ADJUSTMENT # 1 - RECLASSIFY WATER TREATMENT MEDIA COSTS

LINE NO.	Account Number	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	320	Water Treatment Equipment	$ 145,002	$ (145,002)	$ -
2	320.1	Water Treatment Plant	$ -	$ 65,102	$ 65,102
3	320.3	Media For Arsenic Treatment	$ -	$ 79,900	$ 79,900
4		Total	$ 145,002	$ -	$ 145,002

References:
Col [A]: Company Application Page 15
Col [B]: JCM Testimony
Col [C]: Col. [A] + Col. [B]

ABRA WATER COMPANY, INC. Schedule JCM-6
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

ORIGINAL COST RATE BASE ADJUSTMENT # 2 - INCREASE ACCUMULATED DEPRECIATION

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Accumulated Depreciation	$ 502,485	$ 30,673	$ 533,158
2				
3				
4				
5	Depreciation Charges on Media	Per Company		Per Staff
6	2007 (book value $79,990)	2,661	5,329	7,990
7	2008	2,661	13,319	15,980
8	2009	2,661	13,319	15,980
9	Sub-total	$ 7,982	$ 31,968	$ 39,950
10	Organization Cost	508	(508)	0
11	Franchises	787	(787)	0
12	Total	$ 9,277	$ 30,673	$ 39,950
13				
14	(A) = Reflects application of the half-year convention.			
15				
16				

References:
Col [A]: Company Application Page 15
Col [B]: JCM Testimony
Col [C]: Col. [A] + Col. [B]

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-7

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	*OPERATING REVENUES:*					
2	Metered Water Revenues	$ 214,645	$ -	$ 214,645	$ 77,197	$ 291,842
3	Unmetered Water Revenues	-	-	-	-	-
4	Other Water Revenues	16,939	-	16,939	5,700	22,639
5	**Total Operating Revenues**	$ 231,584	$ -	$ 231,584	$ 82,897	$ 314,481
6						
7	*OPERATING EXPENSES:*					
8	Salaries and Wages	$ 28,705	$ -	$ 28,705	$ -	$ 28,705
9	Employee Pensions & Benefits	-	$ -	-	-	-
10	Purchased Water	-	$ -	-	-	-
11	Purchased Power	19,811	$ -	19,811	-	19,811
12	Chemicals	602	$ -	602	-	602
13	Materials and Supplies	36,282	$ -	36,282	-	36,282
14	Office Supplies and Expense	8,292	$ (1,164)	7,128	-	7,128
15	Outside Services	78,085	$ -	78,085	-	78,085
16	Water Testing	5,571	$ (145)	5,426	-	5,426
17	Rents	18,309	$ -	18,309	-	18,309
18	Transportation Expenses	7,294	$ -	7,294	-	7,294
19	Insurance - General Liability	1,787	$ -	1,787	-	1,787
20	Insurance - Health and Life	-	$ -	-	-	-
21	Advertising	-	$ -	-	-	-
22	Regulatory Comm Expense - Rate Case	-	$ 2,500	2,500	-	2,500
23	Regulatory Comm Expense - Other	-	$ -	-	-	-
24	Bad Debt Expense	1,446	$ -	1,446	-	1,446
25	Miscellaneous Expense	10,595	$ (9,525)	1,070	-	1,070
26	Depreciation and Amortization	36,107	$ 16,669	52,776	-	52,776
27	Interest on Security Deposits	-	$ -	-	-	-
28	Taxes other than Income (Payroll)	2,670	$ -	2,670	-	2,670
29	Property Taxes	6,506	$ 2,378	8,884	1,060	9,944
30	Income Tax	50	$ (11,588)	(11,538)	17,213	5,675
31	**Total Operating Expenses**	$ 262,112	(875)	$ 261,237	18,273	$ 279,510
32						
33	**Operating Income**	(30,528)	875	(29,653)	64,624	34,971

References:
Column [A]: Company Application Page 19
Column [B]: Schedule JCM-8
Column [C]: Column [A] + Column [B]
Column [D]: Schedules JCM-1 and JCM-2
Column [E]: Column [C] + Column [D]

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-8

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] JCM-9 Depreciation ADJ # 1	[C] JCM-10 Office Supplies ADJ # 2	[D] JCM-11 Debt Issuance ADJ # 3	[E] JCM-12 Rate Case ADJ # 4	[J] JCM-13 Water Testing ADJ # 5	[F] JCM-14 Property Taxes ADJ # 6	[G] JCM-15 Income Taxes ADJ # 7	[H] STAFF ADJUSTED
1	*Operating Revenues:*									
2	Metered Water Revenues	$ 214,645		$ -	$ -	$ -	$ -	$ -	$ -	$ 214,645
3	Unmetered Water Revenues	-	-		-	-	-	-	-	-
4	Other Water Revenues	16,939	-		-	-	-	-	-	16,939
5	Total Operating Revenues	$ 231,584	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 231,584
6										
7	*Operating Expenses:*									
8	Salaries and Wages	$ 28,705	$ -	$ -	$ -	$ -	$ -	$ -	$ -	28,705
9	Employee Pensions & Benefits	-	-	-	-	-	-	-	-	-
10	Purchased Water	-	-	-	-	-	-	-	-	-
11	Purchased Power	19,811	-	-	-	-	-	-	-	19,811
12	Chemicals	602	-	-	-	-	-	-	-	602
13	Materials and Supplies	36,282	-	-	-		-	-	-	36,282
14	Office Supplies and Expense	8,292	-	(1,164)	-	-	-	-	-	7,128
15	Outside Services	78,085	-	-	-	-	-	-	-	78,085
16	Water Testing	5,571	-	-	-		(145)	-	-	5,426
17	Rents	18,309	-	-	-	-	-	-	-	18,309
18	Transportation Expenses	7,294	-	-	-	-	-	-	-	7,294
19	Insurance - General Liability	1,787	-	-	-	-	-	-	-	1,787
20	Insurance - Health and Life	-	-	-	-	-	-	-	-	-
21	Advertising	-	-	-	-	-	-	-	-	-
22	Regulatory Comm Expense - Rate Case	-	-	-		2,500	-	-	-	2,500
23	Regulatory Comm Expense - Other	-	-	-	-	-	-	-	-	-
24	Bad Debt Expense	1,446	-	-	-	-	-	-	-	1,446
25	Miscellaneous Expense	10,595	-	1,164	(10,689)		-	-	-	1,070
26	Depreciation and Amortization	36,107	16,669	-	-	-	-	-	-	52,776
27	Interest on Security Deposits	-	-	-	-	-		-	-	-
28	Taxes other than Income (Payroll)	2,670	-	-	-	-	-	-	-	2,670
29	Property Taxes	6,506	-	-	-	-	-	2,378	-	8,884
30	Income Tax	50	-	-	-	-	-	-	(11,588)	(11,538)
31	Total Operating Expenses	$ 262,112	$ 16,669	$ -	$ (10,689)	$ 2,500	$ (145)	$ 2,378	$ (11,588)	$ 261,237
	Operating Income	$ (30,528)	$ (16,669)	$ -	$ 10,689	$ (2,500)	$ 145	$ (2,378)	$ 11,588	$ (29,653)

ABRA WATER COMPANY, INC. Schedule JCM-9
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

OPERATING INCOME ADJUSTMENT # 1 - DEPRECIATION EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1		$ 36,107	$ 16,669	$ 52,776

Line No.	ACCT NO.	DESCRIPTION	[A] Company Proposed PLANT IN SERVICE BALANCE	[B] STAFF DEPR. PLANT BALANCE	[C] STAFF RECOMMENDED RATE	[D] STAFF RECOMMENDED EXPENSE
	Plant In Service					
2	301	Organization Cost	$ 508	$ 508	0.00%	$ -
3	302	Franchise Cost	$ 787	$ 787	0.00%	-
4	303	Land and Land Rights	$ 15,044	$ 15,044	0.00%	-
5	304	Structures and Improvements	$ 72,787	$ 72,787	3.33%	2,424
6	305	Collecting and Impounding Res.	$ -	$ -	2.50%	-
7	306	Lake River and other Intakes	$ -	$ -	2.50%	-
8	307	Wells and Springs	$ 63,078	$ 63,078	3.33%	2,101
9	308	Infiltration Galleries and Tunnels	$ -	$ -	6.67%	-
10	309	Supply Mains	$ -	$ -	2.00%	-
11	310	Power Generation Equipment	$ -	$ -	5.00%	-
12	311	Electrical Pumping Equipment	$ 50,877	$ 50,877	12.50%	4,099
13	320	Water Treatment Equipment	$ 145,002	$ -	0.00%	-
14	320.1	Water Treatment Plants	$ -	$ 65,102	3.33%	2,168
15	320.2	Solution Chemical Feeders	$ 4,654	$ 4,654	20.00%	931
16	320.3	Media For Arsenic Treatment	$ -	$ 79,900	33.00%	26,367
17	330	Distribution Reservoirs & Standpipe	$ -	$ -	0.00%	-
18	330.1	Storage Tanks	$ 197,626	$ 197,626	2.22%	4,387
19	330.2	Pressure Tanks	$ -	$ -	5.00%	-
20	331	Transmission and Distribution Mains	$ 659,578	$ 659,578	2.00%	13,192
21	333	Services	$ 133,378	$ 133,378	3.33%	4,441
22	334	Meters & Meter Installations	$ 35,125	$ 35,125	8.33%	2,926
23	335	Hydrants	$ -	$ -	2.00%	-
24	336	Backflow Prevention Devices	$ -	$ -	6.67%	-
25	339	Other Plant & Miscellaneous Equipment	$ 9,890	$ 9,890	6.67%	660
26	340	Office Furniture & Fixtures	$ 278	$ 278	6.67%	19
27	340.1	Computers & Software	$ 6,098	$ 6,098	20.00%	146
28	341	Transportation Equipment	$ 20,280	$ 20,280	20.00%	4,056
29	342	Stores Equipment	$ -	$ -	4.00%	-
30	343	Tools and Work Equipment	$ 65	$ 65	5.00%	-
31	344	Laboratory Equipment	$ -	$ -	10.00%	-
32	345	Power Operated Equipment	$ -	$ -	5.00%	-
33	346	Communications Equipment	$ -	$ -	10.00%	-
34	347	Miscellaneous Equipment	$ 95	$ 95	10.00%	9
35	348	Other Tangible Plant	$ 4,545	$ 4,545	10.00%	455
36		Subtotal General	$ 1,419,695	$ 1,419,695		$ 68,380
37		Less: Non- depreciable Account(s)	16,339	16,339		
38		Depreciable Plant (L36-37)	$ 1,403,356	$ 1,403,356		
39		Contributions-in-Aid-of-Construction (CIAC)			$ 320,237	
40		Composite Depreciation/Amortization Rate			4.8726%	
41		Less: Amortization of CIAC (L39 x L40)				$ 15,604
42		**Depreciation Expense - STAFF [Col. (C), L40 - L41]**				$ 52,776

ABRA WATER COMPANY, INC. Schedule JCM-10
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

OPERATING INCOME ADJUSTMENT # 2 - RECLASSIFY CREDIT CARD FEES

LINE NO.	Account Number	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED	
1		Office Supplies Expense	$ 8,292	$ (1,164)	$ 7,128	
2		Miscellaneous Expense	$ 10,595	$ 1,164	$ 11,759	[1]
3		Net Change in Expense		-		

[1] Excludes effect of Operationg Adj. No. 3.

References:
Col [A]: Company Application Page 19
Col [B]: JCM Testimony
Col [C]: Col. [A] + Col. [B]

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-11

OPERATING INCOME ADJUSTMENT # 3 - MISCELLANEOUS EXPENSE (DEBT ISSUANCE COSTS)

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Debt Issuance Costs	$ 10,689	$ (10,689)	$ -
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12	References:			
13				
14				
15	Col [C]: Col. [A] + Col. [B]			

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-12

OPERATING INCOME ADJUSTMENT # 4 - RATE CASE EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Rate Case Expense	$ -	$ 2,500	$ 2,500
2				
3				
4				
5				
6				
7	Total Rate Case Expense	$ 7,500		
8	Divided by	3		
9	Normalized amount (over 3 years)	$ 2,500		
10				
11				
12				
13				
14	References:			
15	Col [A]: Company Application Page 19			
16	Col [B]: Column [C] - Column [A]			
17	Col [C]: JCM Tesimony			

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-13

OPERATING INCOME ADJUSTMENT # 5 - WATER TESTING EXPENSE

LINE NO.	Account Number	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1		Water Testing Expense	$ 5,571	$ (145)	$ 5,426

References:

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-14

OPERATING INCOME ADJUSTMENT # 6 - PROPERTY TAXES

LINE NO.	Property Tax Calculation	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues - 2009	$ 231,584	$ 231,584
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	$ 463,168	$ 463,168
4a	Staff Adjusted Test Year Revenues - 2009	231,584	
4b	Staff Recommended Revenue, Per Schedule JCM-1		314,481
5	Subtotal (Line 4 + Line 5)	$ 694,752	$ 777,649
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	$ 231,584	$ 259,216
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	$ 463,168	$ 518,432
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	-	-
12	Full Cash Value (Line 9 + Line 10 - Line 11)	$ 463,168	$ 518,432
13	Assessment Ratio	21.0%	21.0%
14	Assessment Value (Line 12 * Line 13)	97,265	$ 108,871
15	Composite Property Tax Rate (Per Company DR4)	9.1336%	9.1336%
16	Staff Proposed Property Tax Expense (Line 14 * Line 15)	$ 8,884	
17	Company Proposed Property Tax	6,506	
18	Staff Test Year Adjustment (Line 16-Line 17)	$ 2,378	
19	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		$ 9,944
20	Staff Test Year Adjusted Property Tax Expense (Line 16)		$ 8,884
21	Increase/(Decrease) to Property Tax Expense		$ 1,060
22	Increase to Property Tax Expense		$ 1,060
23	Increase in Revenue Requirement		82,897
24	Increase to Property Tax per Dollar Increase in Revenue (Line19/Line 20)		1.278704%

References:
Col [A]: Company Schedule DR4
Col [B]: JCM Testimony

ABRA WATER COMPANY, INC.
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-15

OPERATING INCOME ADJUSTMENT # 7 - INCOME TAXES

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Income Tax	$ 50	$ (11,588)	$ (11,538)
2				
3				
4				
5				
6				
7				
8				
9				
10				
11	References:			
12	Col [A]: Company Application Page 19			
13	Col [B]: Column [C] - Column [A]			
14	Col [C]: Schedule JCM-2			

RATE DESIGN

Monthly Usage Charge	Present Rates	Company Proposed Rates	Staff Recommended Rates
5/8" Meter - All Classes	$ 11.55	$ 17.50	$ 14.00
3/4" Meter - All Classes	$ 17.33	$ 23.22	$ 21.00
1" Meter - All Classes	$ 28.88	$ 38.70	$ 35.00
1½" Meter - All Classes	$ 57.75	$ 77.39	$ 70.00
2" Meter - All Classes	$ 92.24	$ 123.60	$ 112.00
3" Meter - All Classes	$ 173.25	$ 232.16	$ 224.00
4" Meter - All Classes	$ 288.75	$ 386.93	$ 350.00
6" Meter - All Classes	$ 577.50	$ 773.85	$ 700.00
Commodity Rates			
5/8" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	$ 2.25
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	$ 3.80
Over 10,000 Gallons	$ 2.78	$ 3.75	$ 6.00
3/4" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	$ 2.25
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	$ 3.80
Over 10,000 Gallons	$ 2.78	$ 3.75	$ 6.00
1" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 15,000 Gallons	N/A	N/A	$ 3.80
Over 15,000 Gallons			$ 6.00
1½" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 30,000 Gallons	N/A	N/A	$ 3.80
Over 30,000 Gallons	N/A	N/A	$ 6.00
2" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 45,000 Gallons	N/A	N/A	$ 3.80
Over 45,000 Gallons	N/A	N/A	$ 6.00
3" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 90,000 Gallons	N/A	N/A	$ 3.80
Over 90,000 Gallons	N/A	N/A	$ 6.00
4" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 145,000 Gallons	N/A	N/A	$ 3.80
Over 145,000 Gallons	N/A	N/A	$ 6.00
6" Meter			
From 1 to 3,000 Gallons	$ 2.37	$ 3.25	N/A
From 3,001 to 10,000 Gallons	$ 2.55	$ 3.50	N/A
Over 10,000 Gallons	$ 2.78	$ 3.75	N/A
From 1 to 300,000 Gallons	N/A	N/A	$ 3.80
Over 300,000 Gallons	N/A	N/A	$ 6.00

Service Line and Meter Installation Charges	Present Total	Co. Proposed Line	Co. Proposed Meter	Co. Proposed Total	Staff Recommended Line	Staff Recommended Meter	Staff Recommended Total
5/8" Meter	$ 425	$ 475	$ -	$ 475	$ 380	$ 95	$ 475
3/4" Meter	450	500	$ -	500	335	165	500
1" Meter	500	550	$ -	550	350	200	550
1½" Meter	700	900	$ -	900	470	430	900
2" Meter	1,125	1,325	$ -	1,325	590	735	1,325
3" Meter	1,505	1,705	$ -	1,705	660	1,045	1,705
4" Meter	2,340	2,540	$ -	2,540	910	1,630	2,540
6" Meter	4,445	4,645	$ -	4,645	1,410	3,235	4,645
Service Charges							
Establishment	$ 20.00			$ 30.00			$ 30.00
Establishment (After Hours)	30.00			40.00			$ 40.00
Reconnection (delinquent)	30.00			50.00			$ 50.00
Reconnection (delinquent) after hours	30.00			50.00			$ 50.00
Meter Test	30.00			50.00			$ 50.00
Deposit Requirement (Residential)	(a)			(a)			(a)
Deposit Requirement (None Residential Meter)	(a)			(a)			(a)
Deposit Interest	Per Rules *			Per Rules *			6.00%
Re-Establishment (With-in 12 Months)	None			Per Rules **			(b)
Re-Establishment (After Hours)	None			Per Rules **			(b)
NSF Check	15.00			25.00			25.00
Deferred Payment, Per Month	1.5%			1.50%			1.5%
Meter Re-Read	10.00			20.00			20.00
Late Charge per month	1.50%			5.00 + 1.5%			1.5%
Fire Sprinkler	N/A			N/A			(c)

* Per Commission Rule R14-2-403(B)(3)
** Per Commission Rule R14-2-403(D)(1)
(a) Residential - two times the average bill. Non-residential - two and one-half times the average bill. R14-2-403(B)(7)
(b) Minimum charge times number of months disconnected.
(c) 2 percent of the monthly minimum for a comparatble size meter connection but not less than $10.00 per month.

In addition to the collection of regular rates, the utility will collect from its customers a proportionate share of any privelege, sales, use, and franchise tax. Per Commission Rule 14-2-409(D)(5).
All advances and/or contributions are to include labor, materials, overheads and all applicable taxes, Cost to include labor, materials and parts, overheads and all applicable taxes.

Abra Water Company
Docket No. W-01782A-10-0224
Test Year ended December 31, 2009

Schedule JCM-17

Typical Bill Analysis
Residential 5/8 Inch Meter

Company Proposed	Gallons	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
Average Usage	6,435	$ 27.42	$ 39.27	$ 11.85	43.23%
Median Usage	5,109	24.04	34.63	$ 10.59	44.07%
Staff Recommended					
Average Usage	6,435	$ 27.42	$ 33.80	$ 6.38	23.28%
Median Usage	5,109	24.04	28.76	$ 4.73	19.66%

Consumption	Rates	Rates	Increase	Rates	Increase
-	$ 11.55	$ 17.50	51.52%	$ 14.00	21.21%
1,000	13.92	20.75	49.07%	16.25	16.74%
2,000	16.29	24.00	47.33%	18.50	13.57%
3,000	18.66	27.25	46.03%	20.75	11.20%
4,000	21.21	30.75	44.98%	24.55	15.75%
5,000	23.76	34.25	44.15%	28.35	19.32%
5,109	24.04	34.63	44.07%	28.76	19.66%
6,000	26.31	37.75	43.48%	32.15	22.20%
6,435	27.42	39.27	43.23%	33.80	23.28%
7,000	28.86	41.25	42.93%	35.95	24.57%
8,000	31.41	44.75	42.47%	39.75	26.55%
9,000	33.96	48.25	42.08%	43.55	28.24%
10,000	36.51	51.75	41.74%	47.35	29.69%
11,000	39.29	55.50	41.26%	53.35	35.79%
12,000	42.07	59.25	40.84%	59.35	41.07%
13,000	44.85	63.00	40.47%	65.35	45.71%
14,000	47.63	66.75	40.14%	71.35	49.80%
15,000	50.41	70.50	39.85%	77.35	53.44%
16,000	53.19	74.25	39.59%	83.35	56.70%
17,000	55.97	78.00	39.36%	89.35	59.64%
18,000	58.75	81.75	39.15%	95.35	62.30%
19,000	61.53	85.50	38.96%	101.35	64.72%
20,000	64.31	89.25	38.78%	107.35	66.93%
25,000	78.21	108.00	38.09%	137.35	75.62%
30,000	92.11	126.75	37.61%	167.35	81.68%
35,000	106.01	145.50	37.25%	197.35	86.16%
40,000	119.91	164.25	36.98%	227.35	89.60%
45,000	133.81	183.00	36.76%	257.35	92.32%
50,000	147.71	201.75	36.59%	287.35	94.54%
75,000	217.21	295.50	36.04%	437.35	101.35%
100,000	286.71	389.25	35.76%	587.35	104.86%

BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
SANDRA D. KENNEDY
Commissioner
PAUL NEWMAN
Commissioner
BOB STUMP
Commissioner

IN THE MATTER OF THE APPLICATION OF ABRA WATER COMPANY, INC. AN ARIZONA CORPORATION, FOR APPROVAL OF A RATE INCREASE	)	DOCKET NO. W-01782A-10-0224

DIRECT

TESTIMONY

(COST OF CAPITAL)

OF

JUAN C. MANRIQUE

PUBLIC UTILITIES ANALYST I

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

NOVEMBER 29, 2010

TABLE OF CONTENTS

SCHEDULES

EXECUTIVE SUMMARY
ABRA WATER COMPANY
DOCKET NO. W-01782A-10-0224

The Direct Testimony of Staff witness Juan C. Manrique addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Abra Water Company ("Applicant") for this proceeding consisting of 55.3 percent debt and 44.7 percent equity which is the Applicant's actual capital structure.

Cost of Equity – Staff recommends that the Commission adopt a 10.3 percent return on equity ("ROE") for the Applicant. Staff's estimated ROE for the Applicant is based on cost of equity estimates for the sample companies ranging from 9.4 percent for the discounted cash flow method ("DCF") to 9.6 percent for the capital asset pricing model ("CAPM"). Staff's ROE recommendation includes a 0.8 percent upward adjustment to reflect a higher financial risk in the Applicant's capital structure compared to that of the sample companies.

Cost of Debt – Staff recommends that the Commission adopt a 5.25 percent cost of debt.

Overall Rate of Return – Staff recommends that the Commission adopt a 7.5 percent overall rate of return ("ROR").

I. INTRODUCTION

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

A. My name is Juan C. Manrique. I am a Public Utilities Analyst 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.

A. In my position as a Public Utilities Analyst, I perform studies to estimate the cost of capital component in rate filings to determine the overall revenue requirement and analyze requests for financing authorizations.

Q. Please describe your educational background and professional experience.

A. I graduated from Arizona State University and received a Bachelor of Science degree in Finance. My course of studies included courses in corporate and international finance, investments, accounting, statistics, and economics. I began employment as a Staff Public Utilities Analyst in October 2008. My professional experience includes two years as a Loan Officer with a homebuilder and as an Associate for an Investor Relations firm.

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

A. This portion of my testimony provides Staff's recommended capital structure, return on equity ("ROE") and overall rate of return ("ROR") for establishing the revenue requirements for Abra Water Company's ("Abra" or "Applicant") pending rate application.

Q. Please provide a brief description of Abra.

A. Abra is a for-profit Class C public service corporation that provides water service to approximately 630 customers in the vicinity of Paulden, County of Yavapai, Arizona.

Summary of Testimony and Recommendations

Q. Briefly summarize how Staff's cost of capital testimony is organized.

A. Staff's cost of capital testimony is presented in ten sections. Section I is this Introduction. Section II discusses the concept of weighted average cost of capital ("WACC"). Section III presents the concept of capital structure and presents Staff's recommended capital structure for Abra in this proceeding. Section IV discusses the concepts of ROE and risk. Section V presents the methods employed by Staff to estimate Abra's ROE. Section VI presents the findings of Staff's ROE analysis. Section VII presents Staff's final cost of equity estimates for Abra. Section VIII presents Staff's Cost of Debt recommendation. Section IX presents Staff's ROR recommendation. Section X presents Staff's conclusions.

Q. Have you prepared any exhibits to accompany your testimony?

A. Yes. I prepared ten schedules (JCM-1 to JCM-10) that support Staff's cost of capital analysis.

Q. What is Staff's recommended rate of return for Abra?

A. Staff recommends a 7.5 percent overall ROR, as shown in Schedule JCM-1. Staff's ROR recommendation is based on cost of equity estimates for Abra that range from 9.4 percent using the discounted cash flow method ("DCF") to 9.6 percent using the capital asset pricing model ("CAPM") and a cost of debt of 5.25 percent. An upward financial risk

adjustment is also included to reflect Abra's riskier capital structure in comparison to the sample companies.

Abra's Proposed Overall Rate of Return

Q. Briefly summarize Abra's proposed capital structure, cost of debt, return on equity and overall rate of return for this proceeding.

A. Table 1 summarizes the Applicant's proposed capital structure, cost of debt, return on equity and overall rate of return in this proceeding:

Table 1

	Weight	Cost	Weighted Cost
Long-term Debt	56.8%	5.25%	3.0%
Common Equity	43.2%	13.14	5.7%
Cost of Capital/ROR			**8.66%**

Abra is proposing an overall rate of return of 8.66 percent.

II. THE WEIGHTED AVERAGE COST OF CAPITAL

Q. Briefly explain the cost of capital concept.

A. The cost of capital is the opportunity cost of choosing one investment over others with equivalent risk. In other words, the cost of capital is the return that stakeholders expect for investing their financial resources in a determined business venture over another business venture.

Q. What is the overall cost of capital?

A. The cost of capital to a company issuing a variety of securities (i.e., stock and indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the

relative amounts for each security in the company's entire capital structure. Thus, the overall cost of capital is the WACC.

Q. How is the WACC calculated?

A. The WACC is calculated by adding the weighted expected returns of a firm's securities. The WACC formula is:

Equation 1.

$$WACC = \sum_{i=1}^{n} W_i * r_i$$

In this equation, W_i is the weight given to the i^{th} security (the proportion of the i^{th} security relative to the portfolio) and r_i is the expected return on the i^{th} security.

Q. Can you provide an example demonstrating application of Equation 1?

A. Yes. For this example, assume that an entity has a capital structure composed of 60 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0 percent and the expected return on equity, i.e. the cost of equity, is 10.5 percent. Calculation of the WACC is as follows:

$$WACC = (60\% * 6.0\%) + (40\% * 10.5\%)$$

$$WACC = 3.60\% + 4.20\%$$

$$WACC = 7.80\%$$

The weighted average cost of capital in this example is 7.80 percent. The entity in this example would need to earn an overall rate of return of 7.80 percent to cover its cost of capital.

III. CAPITAL STRUCTURE

Background

Q. Please explain the capital structure concept.

A. The capital structure of a firm is the relative proportions of each type of security--short-term debt, long-term debt (including capital leases), preferred stock and common stock--that are used to finance the firm's assets.

Q. How is the capital structure expressed?

A. The capital structure of a company is expressed as the percentage of each component of the capital structure (capital leases, short-term debt, long-term debt, preferred stock and common stock) relative to the entire capital structure.

As an example, the capital structure for an entity that is financed by $20,000 of capital leases, $85,000 of long-term debt, $15,000 of preferred stock and $80,000 of common stock is shown in Table 2.

Table 2

Component			%
Capital Leases	$20,000	($20,000/$200,000)	10.0%
Long-Term Debt	$85,000	($85,000/$200,000)	42.5%
Preferred Stock	$15,000	($15,000/$200,000)	7.5%
Common Stock	$80,000	($80,000/$200,000)	40.0%
Total	$200,000		100%

The capital structure in this example is composed of 0.0 percent short-term debt, 10.0 percent capital leases, 42.5 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

Abra's Capital Structure

Q. What capital structure does Abra propose?

A. The Applicant's application shows a capital structure composed of 56.8 percent debt and 43.2 percent common equity. However, in response to Staff data request JCM-2.17, Abra indicated that an accounting error understated its paid-in-capital by $17,296. Adjusting for the error results in a capital structure composed of 55.3 percent debt and 44.7 percent equity ("updated capital structure").

Q. How does Abra's updated capital structure compare to capital structures of the publicly-traded water utilities?

A. Abra's updated capital structure is composed of 55.3 percent debt and 44.7 percent equity. Schedule JCM-4 shows the capital structures of six publicly traded water companies ("sample companies") as of June 2010. The average capital structure for the sample water utilities is comprised of approximately 51.8 percent debt and 48.2 percent equity.

Staff's Capital Structure

Q. What is Staff's recommended capital structure for Abra?

A. Staff recommends the Applicant's updated capital structure composed of 55.3 percent debt and 44.7 percent equity.

IV. RETURN ON EQUITY

Background

Q. Please define the term "cost of equity capital."

A. The cost of equity is the rate of return that investors expect to earn on their investment in a business entity given its risk. In other words, the cost of equity to the entity is the investors' expected rate of return on other investments of similar risk. As investors have a wide selection of stocks to choose from, they will choose stocks with similar risks but higher returns. Therefore, the market determines the entity's cost of equity.

Q. Is there a correlation between interest rates and the cost of equity?

A. Yes. The cost of equity tends to move in the same direction as interest rates. This relationship is part of the CAPM formula. The CAPM is a market-based model employed by Staff for estimating the cost of equity. The CAPM is further discussed in Section V of this testimony.

Q. What has been the general trend of interest rates in recent years?

A. A chronological chart of interest rates is a good tool to show interest rate history and identify trends. Chart 1 graphs intermediate U.S. treasury rates from October 2000 to October 2010.

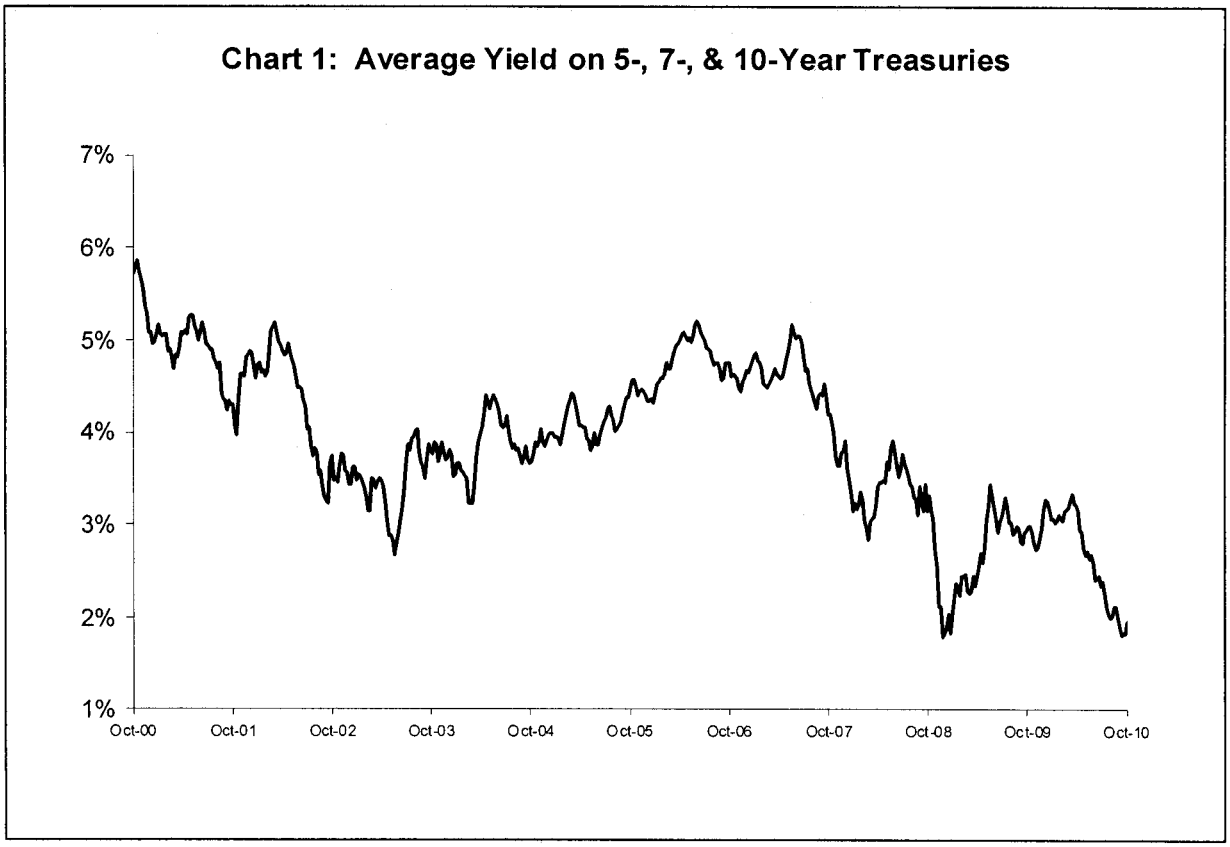
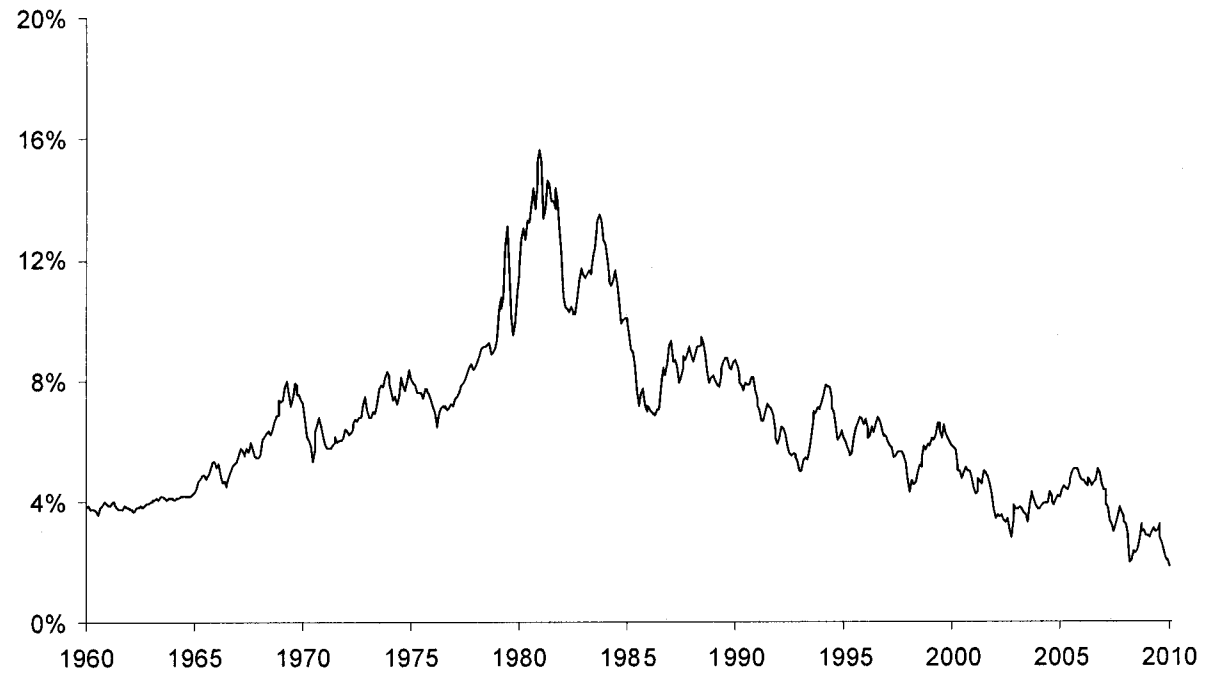


Chart 1 shows that intermediate interest rates trended downward from 2000 to mid-2003 then turned slightly upward until mid-2007, trended downward through early-2009, trended upward in through the middle of 2010 and have trended downward for half a year.

Q. What has been the general trend in interest rates longer term?

A. U.S. Treasury rates from 1959 to present are shown in Chart 2. The chart shows that interest rates trended upward through the mid-1980s and have trended downward over the last 25 years.

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



Source: Federal Reserve

Q. Do these trends suggest anything in terms of cost of equity?

A. Yes. As previously discussed, interest rates and cost of equity tend to move in the same direction. The implication is that the cost of equity has declined in the past 25 years.

Q. Do actual returns represent the cost of equity?

A. No. The cost of equity represents investors' *expected* returns and not realized returns.

Q. Is there any information available that leads to an understanding of the relationship between the equity returns required for a regulated water utility and those required in the market as a whole?

A. Yes. A comparison of betas, a component of the CAPM discussed in Section V, for the water utility industry and the market provide insight into this relationship. The average

beta (0.78)[1] for a water utility is lower than the theoretical average beta for all stocks (1.0). According to the CAPM formula, the cost of equity capital moves in the same direction as beta. Since the beta for the water utility industry is lower than the beta for the market, the implication is that the required return on equity for a regulated water utility is below the average required return on the market.

Risk

Q. Please define risk in relation to cost of capital.

A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a particular security. Investors are risk averse and require a greater potential return to invest in relatively greater risk opportunities, i.e., investors require compensation for taking on additional risk. Risk is generally separated into two components. Those components are market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific risk).

Q. What is market risk?

A. Market risk or systematic risk is the risk of an investment that cannot be reduced through diversification. Market risk stems from factors that affect all securities such as recessions, war, inflation and high interest rates. Since these factors affect the entire market they cannot be eliminated through diversification. Market risk does not impact each security to the same degree. The degree to which any security's returns is affected by the market can be measured using Beta. Beta reflects the business risk and the financial risk of a security.

Q. Please define business risk.

A. Business risk is the fluctuation of earnings inherent in a firm's operations and environment such as competition and adverse economic conditions that may impair its ability to

[1] See Schedule JCM-7

provide returns on investment. Companies in the same or similar line of business tend to experience the same fluctuations in business cycles.

Q. Please define financial risk.

A. Financial risk is the fluctuation of earnings inherent in using debt financing by a firm that may impair its ability to provide adequate return. The more a company uses debt financing, the more the company becomes exposed to financial risk.

Q. Do business risk and financial risk affect the cost of equity?

A. Yes.

Q. Is a firm subject to any other risk?

A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of unsystematic risk include losses caused by labor problems, nationalization of assets, loss of a big client or weather conditions. Investors can eliminate firm-specific risk by holding a diverse portfolio; thus, it is not of concern to diversified investors.

Q. How does Abra's financial risk compare to the sample water companies' financial risk from the perspective of an investor?

A. From an investor's perspective Abra's capital structure is more risky than the sample water companies. Schedule JCM-4 shows the capital structures of the sample companies as of June 2010, as well as Abra's actual capital structure. As of June 2010, the sample water utilities were capitalized with approximately 51.8 percent debt and 48.2 percent equity, while Abra's capital structure consists of approximately 55.3 percent debt and 44.7 percent equity. Thus, Abra's shareholders bear more financial risk than the shareholders of the sample companies.

Q. Is firm-specific risk measured by beta?

A. No. Firm-specific risk is not measured by beta.

Q. Is the cost of equity affected by firm-specific risk?

A. No. Since firm-specific risk can be eliminated through diversification, it does not affect the cost of equity.

Q. Can investors expect additional returns for firm-specific risk?

A. No. Investors who hold diversified portfolios can eliminate firm-specific risk and, consequently, do not require any additional return. Since investors who choose to be less than fully-diversified must compete in the market with fully-diversified investors, the former cannot expect to be compensated for unique risk.

V. ESTIMATING THE COST OF EQUITY

Introduction

Q. Did Staff directly estimate the cost of equity for Abra?

A. No. Since Abra is not a publicly-traded company, Staff is unable to directly estimate the Applicant's cost of equity due to the unavailability of financial information. Instead, Staff uses an average of a representative sample group to reduce the sample error resulting from random fluctuations in the market at the time the information is gathered.

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

A. Staff's sample consists of the following six publicly-traded water utilities: American States Water, California Water, Connecticut Water Services, Middlesex Water, Aqua America and SJW Corp. Staff chose these companies because they are publicly-traded and receive the majority of their earnings from regulated operations.

Q. What models did Staff implement to estimate Abra's cost of equity?

A. Staff used two market-based models to estimate the cost of equity for Abra: the DCF and the CAPM.

Q. Please explain why Staff chose the DCF and CAPM models.

A. Staff chose to use the DCF and CAPM models because they are widely-recognized market-based models and have been used extensively to estimate the cost of equity. An explanation of the DCF and CAPM models follows.

Discounted Cash Flow Model Analysis

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 stock valuation is based on the theory that the value of an investment is equal to the sum of the future cash flows generated from the aforementioned investment discounted to the present time. This method uses expected dividends, market price and dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered the DCF method in the 1960s. The DCF method has become widely used to estimate the cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used the financial information for the relevant six sample companies in the DCF model and averaged the results to determine an estimated cost of equity for the sample companies.

Q. Does Staff use more than one version of the DCF Model?

A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF model and the multi-stage or non-constant growth DCF. The constant-growth DCF model assumes that an entity's dividends will grow indefinitely at the same rate. The multi-stage growth DCF model assumes the dividend growth rate will change at some point in the future.

The Constant-Growth DCF

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

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

Equation 2 :

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

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

Equation 2 assumes that the entity has a constant earnings retention rate and that its earnings are expected to grow at a constant rate. According to Equation 2, a stock with a current market price of $10 per share, an expected annual dividend of $0.45 per share and an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity of 7.5 percent reflected by the sum of the dividend yield ($0.45/ $10 = 4.5 percent) and the 3.0 percent annual dividend growth rate.

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 annual dividend[2] (D_1) by the spot stock price (P_0) after the close of the market October 27, 2010, as reported by the website *MSN Money*.

[2] Value Line Summary & Index. 11-5-10

Q. Why did Staff use the October 27, 2010, spot price rather than a historical average stock price to calculate the dividend yield component of the DCF formula?

A. Current, rather than historic, market stock price is used in order to be consistent with finance theory, i.e., the efficient market hypothesis. The efficient market hypothesis asserts that the current stock price reflects all available information on a stock including investors' expectations of future returns. Use of a historical average of stock prices illogically discounts the most recent information in favor of less recent information. The latter is stale and is representative of underlying conditions that may have changed.

Q. How did Staff estimate the dividend growth (g) component of the constant-growth DCF model represented by Equation 2?

A. The dividend growth component used by Staff is determined by the average of six different estimation methods, as shown in Schedule JCM-8. Staff calculated historical and projected growth estimates on dividend-per-share ("DPS"),[3] earnings-per-share ("EPS")[4] and sustainable growth bases.

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

A. Historic and projected EPS growth are used because dividends are related to earnings. Dividend distributions may exceed earnings in the short run but cannot continue indefinitely. In the long term, dividend distributions are dependent on earnings.

Q. How did Staff estimate historical DPS growth?

A. Staff estimated historical DPS growth by calculating the average rate of growth in DPS of the sample water companies from 1999 to 2009. The results of that calculation are shown

[3] Derived from information provided by *Value Line*
[4] Derived from information provided by *Value Line*

in Schedule JCM-5. Staff calculated an average historical DPS growth rate of 3.0 percent for the sample water utilities for the aforementioned period.

Q. How did Staff estimate the projected DPS growth?

A. Staff calculated an average of the projected DPS growth rates for the sample water utilities from *Value Line*. The average projected DPS growth rate is 3.5 percent, as shown in Schedule JCM-5.

Q. How did Staff calculate the historical EPS growth rate?

A. Staff estimated historical EPS growth by calculating the average rate of growth in EPS of the sample water companies from 1999 to 2009. Staff calculated an average historical EPS growth rate of 3.3 percent for the sample water utilities for the aforementioned period, as shown in Schedule JCM-5.

Q. How did Staff estimate the projected EPS growth?

A. Staff calculated an average of the projected EPS growth rates for the sample water utilities from *Value Line*. The average projected EPS growth rate is 9.1 percent, as shown in Schedule JCM-5.

Q. How does Staff calculate its historical and projected sustainable growth rates?

A. Historical and projected sustainable growth rates are calculated by adding their respective retention growth rate terms (br) to their respective stock financing growth rate terms (vs) as shown in Schedule JCM-6.

Q. What is retention growth?

A. Retention growth is the growth in dividends due to the retention of earnings. The retention growth concept is based on the theory that dividend growth cannot be achieved unless the company retains and reinvests some of its earnings. The retention growth is used in Staff's calculation of sustainable growth shown in Schedule JCM-6.

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

A. The retention growth rate is the product of the retention ratio and the book/accounting return on equity. The retention growth rate formula is:

Equation 3 :

$$\text{Retention Growth Rate} = br$$

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

Q. How did Staff calculate the average historical retention growth rate (br) for the sample water utilities?

A. Staff calculated the historical retention rates by averaging the retention rates for the sample water companies from 2000 to 2009. The historical average retention (br) growth for the sample water utilities is 2.9 percent, as shown in Schedule JCM-6.

Q. How did Staff determine projected retention growth rate (br) for the sample water utilities?

A. Staff used the retention growth projections for the sample water utilities for the period 2013 to 2015 from *Value Line.* The projected average retention growth rate for the sample water utilities is 6.1 percent, as shown in Schedule JCM-6.

Q. When can retention growth provide a reasonable estimate of future dividend growth?

A. The retention growth rate is a reasonable estimate of future dividend growth when the retention ratio is reasonably constant and the entity's market price to book value ("market-to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably constant in recent years. However, the market-to-book ratio for the sample water utilities is 1.9, notably higher than 1.0, as shown in Schedule JCM-7.

Q. Is there any financial implication of a market-to-book ratio greater than 1.0?

A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to earn an accounting/book return on its equity that exceeds its cost of equity. The relationship between required returns and expected cash flows is readily observed in the fixed securities market. For example, assume an entity contemplating issuance of bonds with a face value of $10 million at either 6 percent or 8 percent, and thus, paying annual interest of $600,000 or $800,000, respectively. Regardless of investors' required return on similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent than if the bonds are issued at 6 percent. For example, if the current interest rate required by investors is 6 percent, then they would bid $10 million for the 6 percent bonds and more than $10 million for the 8 percent bonds. Similarly, if equity investors require a 9 percent return and expect an entity to earn accounting/book returns of 13 percent, the market will bid up the price of the entity's stock to provide the required return of 9 percent.

Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of equity analyses in recent years?

A. Staff has assumed that investors expect the market-to-book ratio to remain greater than 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the retention ratio (br) term to calculate its historical and projected sustainable growth rates.

Q. Do the historical and projected sustainable growth rates Staff uses to develop its DCF cost of equity in this case continue to include a stock financing growth rate term?

A. Yes.

Q. What is stock financing growth?

A. Stock financing growth is the growth in an entity's dividends due to the sale of stock by that entity. Stock financing growth is a concept derived by Myron Gordon and discussed in his book *The Cost of Capital to a Public Utility.*[5] Stock financing growth is the product of the fraction of the funds raised from the sale of stock that accrues to existing shareholders (v) and the fraction resulting from dividing the funds raised from the sale of stock by the existing common equity (s).

Q. What is the mathematical formula for the stock financing growth rate?

A. The mathematical formula for stock financing growth is:

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

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where: v = Fraction of the funds raised from the sale of stock that accrues to existing shareholders

s = Funds raised from the sale of stock as a fraction of the existing common equity

Q. How is the variable *v* presented above calculated?

A. Variable v is calculated as follows:

Equation 5:

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

For example, assume that a share of stock has a $30 book value and is selling for $45. Then, to find the value of v, the formula is applied:

$$v = 1 - \left(\frac{30}{45} \right)$$

In this example, v is equal to 0.33.

Q. How is the variable *s* presented above calculated?

A. Variable s is calculated as follows:

Equation 6:

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

For example, assume that an entity has $150 in existing equity, and it sells $30 of stock. Then, to find the value of *s*, the formula is applied:

$$s = \left(\frac{30}{150}\right)$$

In this example, *s* is equal to 20.0 percent.

Q. What is the *vs* term when the market-to-book ratio is equal to 1.0?

A. A market-to-book ratio equal to 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment equal to the cost of equity. When the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders, i.e., the term *v* is equal to zero (0.0). Consequently, the *vs* term is also equal to zero (0.0). When stock financing growth is zero, dividend growth depends solely on the *br* term.

Q. What is the effect of the *vs* term when the market-to-book ratio is greater than 1.0?

A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a book/accounting return on their equity investment greater than the cost of equity. Equation 5 shows that when the market-to-book ratio is greater than 1.0 the *v* term is also greater than zero. The excess by which new shares are issued and sold over book value per share of outstanding stock is a contribution that accrues to existing stockholders in the form of a higher book value. The resulting higher book value leads to higher expected earnings and dividends. Continued growth from the *vs* term is dependent upon the continued issuance and sale of additional shares at a price that exceeds book value per share.

Q. What *vs* estimate did Staff calculate from its analysis of the sample water utilities?

A. Staff estimated an average stock financing growth of 2.4 percent for the sample water utilities, as shown in Schedule JCM-6.

Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result of investors expecting earnings to exceed the cost of equity capital and the entity subsequently experienced newly-authorized rates equal to its cost of equity capital?

A. Market pressure on the entity's stock price to reflect the change in future expected cash flows would cause the market-to-book ratio to move toward 1.0.

Q. Is inclusion of the vs term necessary if the average market-to-book ratio of the sample water utilities falls to 1.0 due to authorized ROEs equaling the cost of equity?

A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the entity accrues to the benefit of existing shareholders because the *v* term equals zero, and consequently, the *vs* term also equals zero. When the market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term. Staff's inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed 1.0 and that the water utilities will continue to issue and sell stock at prices above book value with the effect of benefitting existing shareholders.

Q. What are Staff's historical and projected sustainable growth rates?

A. Staff's estimated historical sustainable growth rate is 5.2 percent based on an analysis of earnings retention for the sample water companies. Staff's projected sustainable growth rate is 9.5 percent based on retention growth projected by *Value Line.* Schedule JCM-6 presents Staff's estimates of the sustainable growth rate.

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

A. Staff's expected infinite annual growth rate in dividends is 5.6 percent which is the average of historical and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the expected infinite annual growth rate in dividends is shown in Schedule JCM-8.

Q. What is Staff's constant-growth DCF estimate for the sample utilities?

A. Staff's constant-growth DCF estimate is 8.9 percent, as shown in Schedule JCM-3.

The Multi-Stage DCF

Q. Why did Staff implement the multi-stage DCF model to estimate Abra's cost of equity?

A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends may not grow at a constant rate. The multi-stage DCF uses two stages of growth. The first stage is four years followed by the second constant growth stage.

Q. What is the mathematical formula for the multi-stage DCF?

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

Equation 7 :

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

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

Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?

A. First, Staff projected future dividends for each of the sample water utilities using near-term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which equates the present value of the forecasted dividends to the current stock price for each of the sample water utilities. Lastly, Staff calculated an average of the individual sample company cost of equity estimates.

Q. How did Staff calculate near-term (stage-1) growth?

A. The stage-1 growth rate is based on *Value Lines's* projected dividends for the next twelve months, when available, and on the average dividend growth rate (5.6 percent) calculated in Staff's constant DCF analysis for the remainder of the stage.

Q. How did Staff estimate long-term (stage-2) growth?

A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in GDP from 1929 to 2009.[6] Using the GDP growth rate assumes that the water utility industry is expected to grow at the same rate as the overall economy.

Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?

A. Staff used 6.6 percent to estimate the stage-2 growth rate.

Q. What is Staff's multi-stage DCF estimate for the sample utilities?

A. Staff's multi-stage DCF estimate is 9.8 percent, as shown in Schedule JCM-3.

Q. What is Staff's overall DCF estimate for the sample utilities?

A. Staff's overall DCF estimate is 9.4 percent. Staff calculated the overall DCF estimate by averaging the constant growth DCF (8.9 percent) and multi-stage DCF (9.8 percent) estimates, as shown in Schedule JCM-3.

Capital Asset Pricing Model

Q. Please describe the CAPM.

A. The CAPM is used to determine the prices of securities in a competitive market. The CAPM model describes the relationship between a security's investment risk and its market rate of return. Under the CAPM, an investor requires the expected return of a security to equal the rate on a risk-free security plus a risk premium. If the investor's expected return does not meet or beat the required return, the investment is not economically justified. The model also assumes that investors will sufficiently diversify

[6] www.bea.doc.gov

their investments to eliminate any non-systematic or unique risk.[7] In 1990, Professors Harry Markowitz, William Sharpe, and Merton Miller earned the Nobel Prize in Economic Sciences for their contribution to the development of the CAPM.

Q. Did Staff use the same sample water utilities in its CAPM and DCF cost of equity estimation analyses?

A. Yes. Staff's CAPM cost of equity estimation analysis uses the same sample water companies as its DCF cost of equity estimation analysis.

Q. What is the mathematical formula for the CAPM?

A. The mathematical formula for the CAPM is:

Equation 8:

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

where:

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

The equation shows that the expected return (K) on a risky asset is equal to the risk-free interest rate (R_f) plus the product of the market risk premium ("R_p") ($R_m - R_f$) multiplied by beta (β) where beta represents the riskiness of the investment relative to the market.

[7] The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

Q. What is the risk free rate?

A. The risk free rate is the rate of return of an investment with zero risk.

Q. What does Staff use as surrogates to represent estimations of the risk-free rates of interest in its historical and current market risk premium CAPM methods?

A. Staff uses separate parameters as surrogates for the estimations of the risk-free rates of interest for the historical market risk premium CAPM cost of equity estimation and the current market risk premium CAPM cost of equity estimation. Staff uses the average of three (five-, seven-, and ten-year) intermediate-term U.S. Treasury securities' spot rates in its historical market risk premium CAPM cost of equity estimation, and the 30-year U.S. Treasury bond spot rate in its current market risk premium CAPM cost of equity estimation. U.S. Treasuries are largely verifiable and readily available.

Q. What does beta measure?

A. Beta measures the volatility, or systematic risk, of a security relative to the market. Since systematic risk cannot be diversified away, it is the only risk that is relevant when estimating a security's required return. Using a baseline market beta of 1.0, a security with a beta less than 1.0 will be less volatile than the market. A security with a beta greater than 1.0 will be more volatile than the market.

Q. How did Staff estimate Abra's beta?

A. Staff used the average of the *Value Line* betas for the sample water utilities as a proxy for Abra's beta. Schedule JCM-7 shows the *Value Line* betas for each of the sample water utilities. The 0.78 average beta for the sample water utilities is Staff's estimated beta for Abra. A security with a 0.78 beta has less volatility than the market.

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

A. The expected market risk premium is the expected return on the market above the risk free rate. Simplified, it is the return an investor expects as compensation for market risk.

Q. What did Staff use for the market risk premium?

A. Staff uses separate calculations for the market risk premium in its historical and current market risk premium CAPM methods.

Q. How did Staff calculate an estimate for the market risk premium in its historical market risk premium CAPM method?

A. Staff uses the intermediate-term government bond income returns published in the Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2009 Yearbook* to calculate the historical market risk premium. Ibbotson Associates calculates the historical risk premium by averaging the historical arithmetic differences between the S&P 500 and the intermediate-term government bond income returns for the period 1926-2009. Staff's historical market risk premium estimate is 7.2 percent, as shown in Schedule JCM-3.

Q. How did Staff calculate an estimate for the market risk premium in its current market risk premium CAPM method?

A. Staff solves equation 8 above to arrive at a market risk premium using a DCF derived expected return (K) of 13.58 (2.0 + 11.58[8]) percent using the expected dividend yield (2.0 percent over the next twelve months) and the annual per share growth rate (11.58 percent) that *Value Line* projects for all dividend-paying stocks under its review[9] along with the current long-term risk-free rate (30-year Treasury note at 4.1 percent) and the market's

[8] The three to five year price appreciation is 55%. $1.55^{0.25} - 1 = 11.58\%$
[9] November 5, 2010 issue date.

average beta of 1.0. Staff calculated the current market risk premium as 9.52[10] as shown in Schedule JCM-3.

Q. What is the result of Staff's historical market risk premium CAPM and current market risk premium CAPM cost of equity estimations for the sample utilities?

A. Staff's cost of equity estimates are 7.7 percent using the historical market risk premium CAPM and 11.5 using the current market risk premium CAPM.

Q. What is Staff's overall CAPM estimate for the sample utilities?

A. Staff's overall CAPM cost of equity estimate is 9.6 percent which is the average of the historical market risk premium CAPM (7.7 percent) and the current market risk premium CAPM (11.5 percent) estimates, as shown in Schedule JCM-3.

VI. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS

Q. What is the result of Staff's constant-growth DCF analysis to estimate of the cost of equity to the sample water utilities?

A. Schedule JCM-3 shows the result of Staff's constant-growth DCF analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 3.3\% + 5.6\%$$

$$k = \mathbf{8.9\%}$$

Staff's constant-growth DCF estimate of the cost of equity to the sample water utilities is 8.9 percent.

[10] 13.58% = 4.06% + (1) (9.52%)

Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JCM-9 shows the result of Staff's multi-stage DCF analysis. The result of Staff's multi-stage DCF analysis is:

Applicant	**Equity Cost Estimate (k)**
American States Water	9.3%
California Water	9.7%
Aqua America	9.2%
Connecticut Water	10.5%
Middlesex Water	10.6%
SJW Corp	9.4%
Average	**9.8%**

Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.8 percent.

Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?

A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 9.4 percent. Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant growth DCF (8.9 percent) and Staff's multi-stage DCF (9.8 percent) estimates, as shown in Schedule JCM-3.

Q. What is the result of Staff's historical market risk premium CAPM analysis to estimate of the cost of equity for the sample utilities?

A. Schedule JCM-3 shows the result of Staff's CAPM analysis using the historical risk premium estimate. The result is as follows:

$k = 7.7\%$

$$k = 2.1\% + 0.78 * 7.2\%$$

Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to the sample water utilities is 7.7 percent.

Q. What is the result of Staff's current market risk premium CAPM analysis to estimate the cost of equity for the sample utilities?

A. Schedule JCM-3 shows the result of Staff's CAPM analysis using the current market risk premium estimate. The result is:

$$k = 4.1\% + 0.78 * 9.5\%$$

$$k = 11.5\%$$

Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the sample water utilities is 11.5 percent.

Q. What is Staff's overall CAPM estimate of the cost of equity for the sample utilities?

A. Staff's overall CAPM estimate for the sample utilities is 9.6 percent. Staff's overall CAPM estimate is the average of the historical market risk premium CAPM (7.7 percent) and the current market risk premium CAPM (11.5 percent) estimates, as shown in Schedule JCM-3.

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

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

Table 2

Method	Estimate
Average DCF Estimate	9.4%
Average CAPM Estimate	9.6%
Overall Average	**9.5%**

Staff's average estimate of the cost of equity to the sample water utilities is 9.5 percent.

VII. FINAL COST OF EQUITY ESTIMATES FOR ABRA

Q. Please compare Abra's capital structure to that of the six sample water companies.

A. The average capital structure for the sample water utilities is composed of 48.2 percent equity and 51.8 percent debt, as shown in Schedule JCM-4. Abra's capital structure is composed of 44.7 percent equity and 55.3 percent debt. In this case, since Abra's capital structure is more leveraged than that of the average sample water utilities' capital structure, its stockholders bear more financial risk than the sample water utilities.

Q. Does Abra's additional financial risk affect its cost of equity?

A. Yes. As previously discussed, financial risk is a component of market risk and investors require compensation of market risk.

Q. What method does Staff use to calculate the effect on the cost of equity capital of the different financial risks posed by Abra versus the sample companies?

A. Staff uses the methodology developed by Professor Robert Hamada of the University of Chicago, which incorporates capital structure theory with the CAPM, to estimate the effect of Abra's capital structure on its cost of equity. Staff calculated a financial risk adjustment for Abra of positive 80 basis points (0.8 percent) based on the Company's structure of 44.7 percent equity and 55.3 percent debt in order to reflect the Company's actual financial risk. Abra's cost of equity adjusted for financial risk (10.3 percent) can be

determined by adding this 0.8 percent financial risk adjustment from Staff's average estimate of the cost of equity to the sample water utilities (9.5 percent).

Q. What is Staff's ROE estimate for Abra?

A. Staff determined an ROE estimate of 9.5 percent for the Applicant based on cost of equity estimates for the sample companies ranging from 9.4 percent for the DCF to 9.6 percent for the CAPM. Staff recommends adoption of an 80 basis point upward financial risk adjustment to 10.3 percent.

VIII. COST OF DEBT

Q. What is Staff's recommendation for Abra's cost of debt?

A. Staff is recommending a cost of debt of 5.25 percent. Staff calculated Abra's cost of debt by performing a weighted-average cost of debt calculation for its three WIFA loans. This calculation is shown on schedule JCM-10.

IX. RATE OF RETURN RECOMMENDATION

Q. What overall rate of return did Staff determine for Abra?

A. Staff determined a 7.5 percent ROR for the Applicant, as shown in Schedule JCM-1 and in the following table:

Table 3

	Weight	Cost	Weighted Cost
Long-term Debt	55.3%	5.25%	2.9%
Common Equity	44.7%	10.3%	4.6%
Overall ROR			**7.5%**

X. CONCLUSION

Q. Please summarize Staff's recommendations.

A. Staff recommends that the Commission adopt a capital structure for Abra in this proceeding composed of 55.3 percent debt and 44.7 percent equity.

Staff also recommends that the Commission adopt a 7.5 percent ROR for the Applicant, based on Staff's cost of equity estimates that range from 9.4 percent to 9.6 percent for the sample companies, a 5.25 percent cost of debt and to reflect an 80 basis point upward financial risk adjustment.

Q. Does this conclude your Direct Testimony?

A. Yes, it does.

ABRA Water Company Cost of Capital Calculation
Capital Structure
And Weighted Average Cost of Capital
Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
Description	Weight (%)	Cost	Weighted Cost
Staff Recommended Structure			
Debt	55.3% [1]	5.25%	2.9%
Common Equity	44.7%	10.3%	4.6%
Weighted Average Cost of Capital			**7.5%**
Company Proposed Structure			
Debt	56.8%	5.25%	3.0%
Common Equity	43.2%	13.14%	5.7%
Weighted Average Cost of Capital			**8.66%**

[D] : [B] x [C]

Supporting Schedules: JCM-3 and JCM-4.

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ABRA Water Company Cost of Capital Calculation
Final Cost of Equity Estimates
Sample Water Utilities

[A]	[B]		[C]		[D]		[E]
DCF Method			D_1/P_0 [1]	+	g [2]	=	**k**
Constant Growth DCF Estimate			3.3%	+	5.6%	=	8.9%
Multi-Stage DCF Estimate						=	9.8%
Average of DCF Estimates							**9.4%**
CAPM Method	**Rf**	+	β [5]	x	**(Rp)**	=	**k**
Historical Market Risk Premium [3]	2.1%	+	0.78	x	7.2% [6]	=	7.7%
Current Market Risk Premium [4]	4.1%	+	0.78	x	9.5% [7]	=	11.5%
Average of CAPM Estimates							**9.6%**
					Average		**9.5%**
					Financial risk adjustment		0.8%
					Total		**10.3%**

1 MSN Money and Value Line

2 Schedule JCM-8

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

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

5 Value Line

6 Historical Market Risk Premium (Rp) calculated from Ibbotson Associates SBBI 2009 Yearbook data

7 Testimony

ABRA Water Company Cost of Capital Calculation
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
Company	Debt	Common Equity	Total
American States Water	48.6%	51.4%	100.0%
California Water	49.4%	50.6%	100.0%
Aqua America	56.1%	43.9%	100.0%
Connecticut Water	55.8%	44.2%	100.0%
Middlesex Water	47.5%	52.5%	100.0%
SJW Corp	53.2%	46.8%	100.0%
Average Sample Water Utilities	**51.8%**	**48.2%**	**100.0%**
ABRA - Actual Capital Structure	**55.3%**	**44.7%**	**100.0%**

Source:
Sample Water Companies from Value Line

ABRA Water Company Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Company	Dividends Per Share 1999 to 2009 DPS[1]	Dividends Per Share Projected DPS[1]	Earnings Per Share 1999 to 2009 EPS[1,2]	Earnings Per Share Projected EPS[1]
American States Water	1.7%	3.5%	3.1%	9.1%
California Water	0.8%	0.8%	2.5%	5.5%
Aqua America	7.4%	6.1%	6.2%	12.7%
Connecticut Water	1.3%	No Projection	1.5%	No Projection
Middlesex Water	1.7%	No Projection	-0.5%	No Projection
SJW Corp	5.1%	No Projection	-0.7%	No Projection
Average Sample Water Utilities	**3.0%**	**3.5%**	**3.3%**	**9.1%**

1 Value Line

2 Negative values are inconsistent with the DCF, accordingly, they are excluded from the average.

ABRA Water Company Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth **2000 to 2009** br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth **2000 to 2009** br + vs	Sustainable Growth Projected br + vs
American States Water	3.0%	5.6%	2.1%	5.1%	7.7%
California Water	2.0%	5.9%	4.0%	6.0%	9.8%
Aqua America	4.6%	6.8%	4.3%	8.9%	11.1%
Connecticut Water	2.5%	No Projection	0.8%	3.4%	No Projection
Middlesex Water	1.2%	No Projection	2.9%	4.1%	No Projection
SJW Corp	4.0%	No Projection	0.1%	4.1%	No Projection
Average Sample Water Utilities	**2.9%**	**6.1%**	**2.4%**	**5.2%**	**9.5%**

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

ABRA Water Company Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 10/27/2010	Book Value	Mkt To Book	*Value Line* Beta β	Raw Beta β *raw*
American States Water	AWR	**37.48**	20.00	1.9	**0.80**	0.67
California Water	CWT	**37.71**	20.94	1.8	**0.75**	0.60
Aqua America	WTR	**21.28**	8.46	2.5	**0.65**	0.45
Connecticut Water	CTWS	**24.39**	12.94	1.9	**0.80**	0.67
Middlesex Water	MSEX	**17.62**	11.13	1.6	**0.75**	0.60
SJW Corp	SJW	**24.04**	15.07	1.6	**0.95**	0.90
Average				**1.9**	**0.78**	**0.65**

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

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

ABRA Water Company Cost of Capital Calculation
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A]	[B]
Description	g
DPS Growth - Historical[1]	3.0%
DPS Growth - Projected[1]	3.5%
EPS Growth - Historical[1]	3.3%
EPS Growth - Projected[1]	9.1%
Sustainable Growth - Historical[2]	5.2%
Sustainable Growth - Projected[2]	9.5%
Average	**5.6%**

1 Schedule JCM-5

2 Schedule JCM-6

ABRA Water Company Cost of Capital Calculation
Multi-Stage DCF Estimates
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[H]	[I]
Company	Current Mkt. Price (P_o)[1]	Projected Dividends[2] (Stage 1 growth) (D_t)				Stage 2 growth[3] (g_n)	Equity Cost Estimate (K)[4]
	10/27/2010	d_1	d_2	d_3	d_4		
American States Water	37.5	1.04	1.10	1.16	1.22	6.6%	9.3%
California Water	37.7	1.21	1.27	1.35	1.42	6.6%	9.7%
Aqua America	21.3	0.58	0.61	0.65	0.68	6.6%	9.2%
Connecticut Water	24.4	0.98	1.04	1.10	1.16	6.6%	10.5%
Middlesex Water	17.6	0.72	0.76	0.80	0.85	6.6%	10.6%
SJW Corp	24.0	0.69	0.73	0.77	0.81	6.6%	9.4%

Average **9.8%**

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

Where : P_0 = current stock price
D_t = dividends expected during stage 1
K = cost of equity
n = years of non – constant growth
D_n = dividend expected in year n
g_n = constant rate of growth expected after year n

1 [B] see Schedule JCM-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2009 in current dollars.

4 Internal Rate of Return of Projected Dividends

ABRA Water Company Cost of Capital Calculation
Cost of Debt Calculation including Debt Issuance Costs

	Outstanding WIFA Loan Amount As of December 31, 2009	Interest Rate	Interest Expense	Debt Issuance Costs	Yearly Amortization of Debt Issuance Costs	Interest Expense Including Yearly Amortization of Debt Issuance Costs
	$ 10,642	10.00%	$ 1,064		$ -	$ 1,064
	$ 123,955	4.20%	$ 5,206		$ -	$ 5,206
	$ 224,029	5.60%	$ 12,546		$ -	$ 12,546
Total	$ 358,626	5.25%	$ 18,816	$ -	$ -	$ 18,816

Combined Interest Rate
5.25%

BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

IN THE MATTER OF THE APPLICATION OF ABRA WATER COMPANY, INC., AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE CURRENT FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR RATE INCREASES IN ITS RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON	DOCKET NO. W-01782A-10-0224

DIRECT

TESTIMONY

OF

JIAN W. LIU

UTILITIES ENGINEER

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

NOVEMBER 29, 2010

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EXHIBIT JWL

SCHEDULES

TABLES

EXECUTIVE SUMMARY
ABRA WATER COMPANY, INC.
DOCKET NO. W-01782A-10-0224

CONCLUSIONS

A. The Arizona Department of Environmental Quality has determined that the Abra Water Company ("Abra" or "Company") water system has no deficiencies and is currently delivering water that meets water quality standards required by the Arizona Administrative Code, Title 18, Chapter 4.

B. Abra reported 54,768,000 gallons pumped and 50,628,000 gallons sold, resulting in a water loss of approximately 7.56 percent in 2009. Non-account water is within acceptable limits.

C. The Company is not located in any Active Management Area ("AMA") and is not subject to any AMA reporting and conservation requirements. ADWR reported that it has determined that Abra is currently in compliance with departmental requirements governing water providers and/or community water systems.

D. A check of the Arizona Corporation Commission Utilities Division Compliance Database indicated that there were no delinquent compliance items for Abra Water Company.

E. The Company has approved Curtailment Plan and Backflow Prevention Tariffs on file with the Commission.

F. Staff concludes that the Abra has adequate production capacity and storage capacity to serve the existing customer base and reasonable growth.

RECOMMENDATIONS

1. Staff recommends its average annual cost of $5,426 be adopted for the water testing expense in this proceeding.

2. Staff recommends that Abra use Staff's depreciation rates by individual National Association of Regulatory Utility Commissioners category on a going forward basis.

3. Staff recommends that the Company charge separate service line and meter installation charges as recommended by Staff and listed in Table G-1.

INTRODUCTION

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

A. My name is Jian W. Liu. My place of employment is the Arizona Corporation Commission ("Commission"), Utilities Division, 1200 West Washington Street, Phoenix, Arizona 85007. My job title is Water/Wastewater Engineer.

Q. How long have you been employed by the Commission?

A. I have been employed by the Commission since October 2005.

Q. Please list your duties and responsibilities.

A. As a Water/Wastewater Engineer, my responsibilities include: the inspection, investigation, and evaluation of water and wastewater systems; preparing reconstruction cost new and/or original cost studies, and investigative reports; providing technical recommendations and suggesting corrective action for water and wastewater systems; and providing written and oral testimony on rate applications and other cases before the Commission.

Q. How many companies have you analyzed for the Utilities Division?

A. I have analyzed approximately 45 companies covering various responsibilities for the Utilities Division.

Q. Have you previously testified before the Commission?

A. Yes.

Q. What is your educational background?

A. I am a Ph.D. Candidate in Geotechnical Engineering from Arizona State University ("ASU"). I have a Master of Science Degree in Natural Science from ASU and a Master of Science Degree in Civil Engineering from Institute of Rock & Soil Mechanics ("IRSM"), Academy of Sciences, China.

Q. Briefly describe your pertinent work experience.

A. From 1982 to 2000, I was employed by IRSM, SCS Engineers, and URS Corporation as a Civil and Environmental Engineer. In 2000, I joined the Arizona Department of Environmental Quality ("ADEQ"). My responsibilities with ADEQ included review and approval of water distribution systems, sewer distribution systems, and on-site wastewater treatment facilities. I remained with ADEQ until transferring to the Commission in October 2005.

Q. Please state your professional membership, registrations, and licenses.

A. I am a licensed professional civil engineer in the State of Arizona.

PURPOSE OF TESTIMONY

Q. Were you assigned to provide Staff's engineering analysis and recommendation for Abra in this proceeding?

A. Yes. I reviewed Abra's application and responses to data requests, and I inspected the water system on October 26, 2010. This testimony and its attachment present Staff's engineering evaluation.

ENGINEERING REPORT

Q. Please describe the attached Engineering Report, Exhibit JWL.

A. Exhibit JWL presents the details and analyses of Staff's findings, and is attached to this Direct Testimony. Exhibit JWL contains the following major topics: (1) a description of the water system and the processes, (2) water use, (3) growth, (4) compliance with the rules of the ADEQ, Arizona Department of Water Resources ("ADWR"), and the Commission, (5) depreciation rates, (6) curtailment plan tariff, and (7) Service Line and Meter Installation Charges.

Staff's conclusions and recommendations from the engineering report are contained in the "Executive Summary", above.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Engineering Report For
Abra Water Company, Inc.
Docket No. W-01782A-10-0224 (Rates)

October 29, 2010

A. INTRODUCTION AND LOCATION OF COMPANY

On June 4, 2010, Abra Water Company ("Abra" or "Company") filed an application to increase its rates with the Arizona Corporation Commission ("ACC" or "Commission") in Docket No. W-01782A-10-0224. Abra serves the Community of Paulden which is approximately 25 miles north of the Town of Prescott on State Highway 89 in Yavapai County. Figure A-1 describes the location of the Company within Yavapai County, and Figure A-2 describes the certificated area of Abra.

B. DESCRIPTION OF WATER SYSTEM

The water system was field inspected on October 26, 2010, by Jian W Liu, Staff Utilities Engineer, in the accompaniment of Rod Yarbro, representing Abra.

The operation of the water system consists of one well a 500 GPM Arsenic Treatment Plant[1], two storage tanks, four booster pumps and a distribution system, serving approximately 636 customers during the test year of 2009. System schematics are shown in Figure B-1 with detailed plant facility descriptions as follows:

Well Data

ADWR ID No.	Pump HP	Pump GPM	Casing Depth(ft)	Casing Size(in)	Meter Size(in)	Year Drilled
55- 619178 (see note below)	2X10	180	900 2700 Total	24	4	1901 1958
55- 561786	40	270	380	12	4	1997

Note: GPM = gallons per minute.
Note: This well was being utilized as a backup well until it was taken off line in 2006 due to elevated arsenic levels in the water it was producing.

[1]The Company's one well was producing water that had an arsenic level of 14 parts per billion. This 500 GPM Arsenic Treatment Plant became operational in May 2008 to address the high level of arsenic in the Company's water.

Storage Tanks		Pressure Tanks		Booster Pumps	
Capacity (gallons)	Quantity	Capacity (gallons)	Quantity	Capacity (HP)	Quantity
250,000	1	350	4	20	2
24,000	1			1.5	2
Total 274,000					

Mains		Customer Meters		Fire Hydrants
Size (inches)	Length (feet)	Size (inches)	Quantity	Quantity
2	10,635			
4	22,005	5/8x3/4	636	None
6	59,775	3/4		
		1		
		1.5		
		2	1	
		3		
		4		
		Total	637	

C. WATER USE

Water Sold

Based on the information provided by Abra, water use for the year 2009 is presented in Figure C-1. Customer consumption experienced a high monthly average water use of 320 gallons per day ("GPD") per connection and a low monthly average water use of 141 GPD per connection for an average annual use of 219 GPD per connection.

Non-Account Water

Non-account water should be 10 percent or less and never more than 15 percent. It is important to be able to reconcile the difference between water sold and the water produced by the source. A water balance will allow a water company to identify water and revenue losses due to leakage, theft, and flushing. Abra reported 54,768,000 gallons pumped and 50,628,000 gallons sold, resulting in a water loss of approximately 7.56 percent in 2009. Non-account water is within acceptable limits.

D. GROWTH

During the test year 2009, Abra had 636 customers and in 2008 it had 642 customers. The customer base has leveled off and has even decreased slightly with indications that more vacancies (abandoned or unrented units) will happen in the future according to the Company. Abra anticipates very little if any growth over the next 3-5 years due to the current economic climate.

Staff concludes that the Abra has adequate production capacity and storage capacity to serve the existing customer base and reasonable growth.

E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY COMPLIANCE

Compliance

Arizona Department of Environmental Quality ("ADEQ") regulates the Company's Water System under ADEQ Public Water System ("PWS") No. 13-001. Based on compliance information submitted by the Company, the system has no deficiencies and ADEQ has determined that this system is currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, and Chapter 4. (ADEQ report dated 03/19/10).

Water Testing Expense

The Company is subject to mandatory participation in the Monitoring Assistance Program ("MAP"). Participation in the MAP program is mandatory for water systems, which serve less than 10,000 persons (approximately 3,300 service connections).

The Company reported its water testing expense at $5,571 during the 2009 test year. Staff reviewed this reported amount and made certain adjustments to determine an average annual cost of $5,426 as shown in Table E-1. Staff recommends annual water testing expense of $5,426 be used for purposes of this application.

F. ARIZONA DEPARTMENT OF WATER RESOURCES ("ADWR") COMPLIANCE

The Company is not located in any Active Management Area ("AMA") and is not subject to any AMA reporting and conservation requirements. ADWR reported that it has determined that Abra is currently in compliance with departmental requirements governing water providers and/or community water systems. (ADWR report dated June 23, 2010)

G. ARIZONA CORPORATION COMMISSION ("ACC" OR "COMMISSION") COMPLIANCE

A check of the Commission Utilities Division Compliance Database indicated that there were no delinquent compliance items for Abra Water.

H. DEPRECIATION RATES

In recent orders, the Commission has been shifting away from the use of composite rates in favor of individual depreciation rates by National Association of Regulatory Utility Commissioners ("NARUC") category. (For example, a uniform 2.50 percent composite rate would not really be appropriate for either vehicles or transmission mains and instead, different specific retirement rates should be used.)

Staff has developed typical and customary depreciation rates within a range of anticipated equipment life. These rates are presented in Table F-1. Staff recommends that Abra use these depreciation rates by individual NARUC category on a going forward basis.

I. CURTAILMENT PLAN AND BACKFLOW PREVENTION TARIFF

The Company has approved Curtailment Plan and Backflow Prevention Tariffs on file with the Commission.

J. SERVICE LINE AND METER INSTALLATION CHARGES

The Company has requested to change its service line and meter installation charges. These charges are refundable advances and the Company's proposed charges are below Staff's recommended range for these charges. Since the Company may at times install meters on existing service lines, it would be appropriate for some customers to only be charged for the meter installation. Therefore, separate service line and meter charges have been developed by Staff using the combined total proposed by the Company. Staff recommends that the Company charge separate service line and meter installation charges. The separate service line charges and meter charges recommended by Staff are listed under the column heading labeled "Staff Recommended" in Table G-1.

Abra Water Company, Inc.
Docket No. W-01782A-10-0224

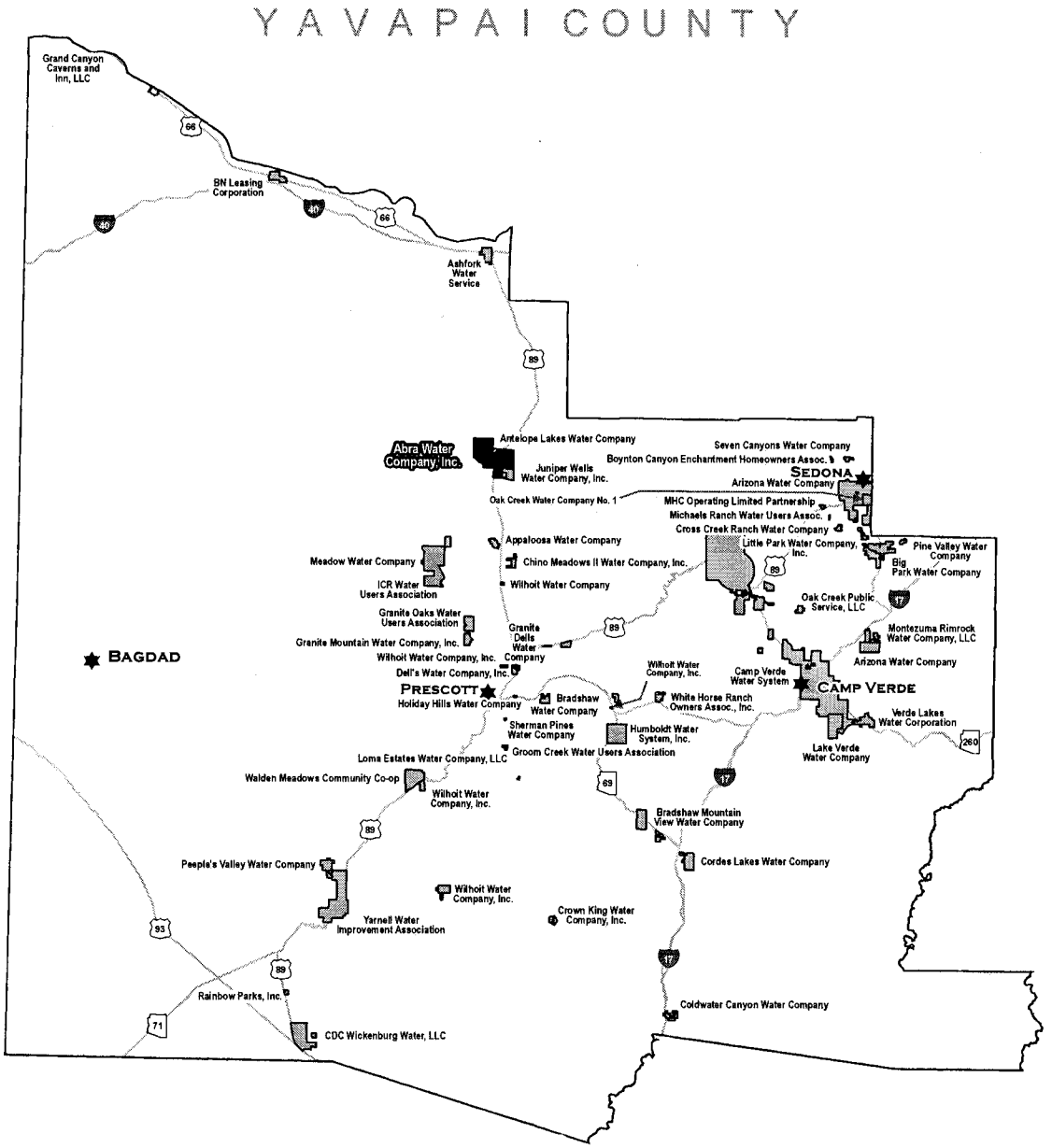

Figure A-1. County Map

ra Water Company, Inc.
cket No. W-01782A-10-0224

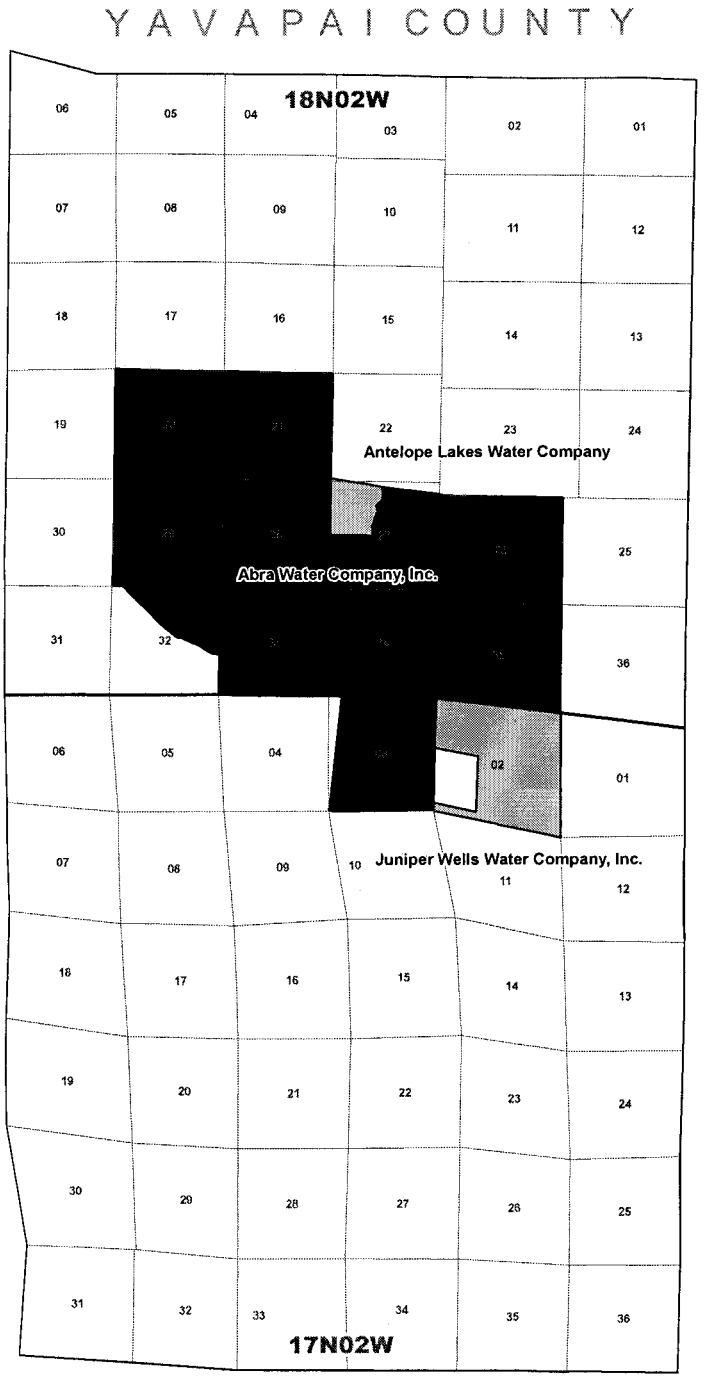

Figure A-2. Certificated Area

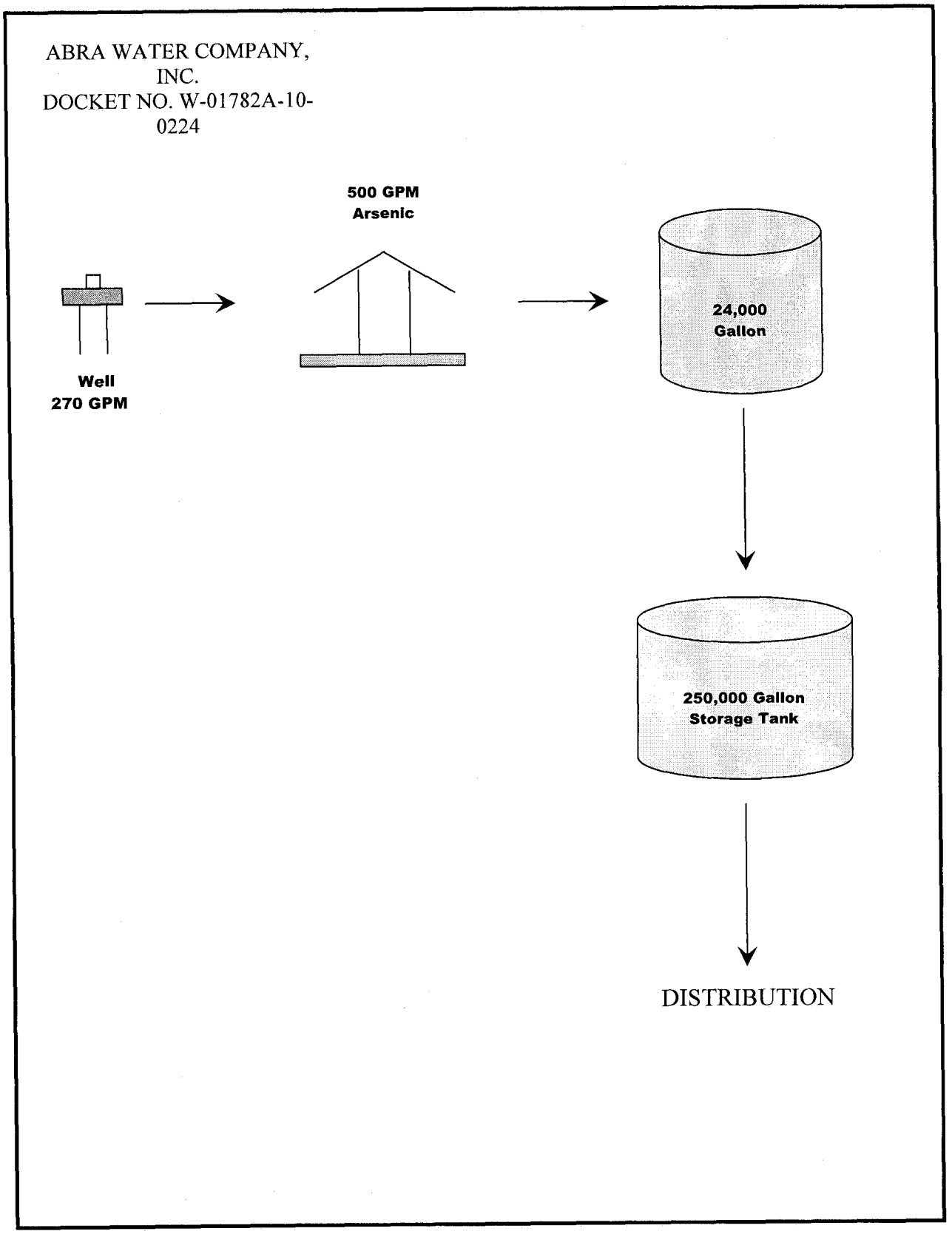

Figure B1: System Schematic

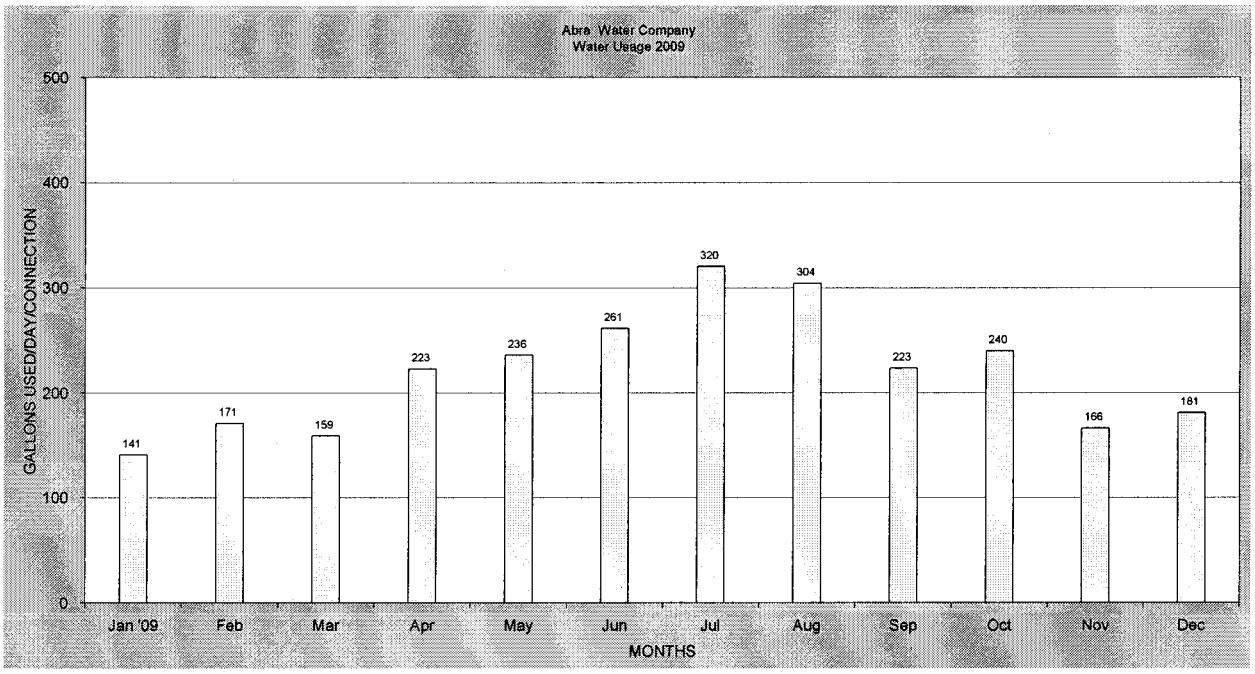

Figure C-1. Water Use

Table E-1. Water Testing Cost

Monitoring	Cost per test	No. of test	Annual Expense
Total coliform – monthly	$25	12	$300
MAP – IOCs, Radiochemical, Nitrate, Nitrite, Asbestos, SOCs, & VOCs	MAP	MAP	$1,879
Arsenic	$21	12	$252
Lead & Copper – annually	$34	10	$340
TTHMs – annually	$100	1	$100
HAA5 - annually	$155	1	$155
Subtotal:			$3,026
Certified Operator Services	$200	12	$2,400
Total			**$5,426**

Note: ADEQ's MAP invoice for the 2009 Calendar Year was $1,879.38.

Table F-1. Depreciation Rates

NARUC Acct. No.	Depreciable Plant	Average Service Life (Years)	Annual Accrual Rate (%)
304	Structures & Improvements	30	3.33
305	Collecting & Impounding Reservoirs	40	2.50
306	Lake, River, Canal Intakes	40	2.50
307	Wells & Springs	30	3.33
308	Infiltration Galleries	15	6.67
309	Raw Water Supply Mains	50	2.00
310	Power Generation Equipment	20	5.00
311	Pumping Equipment	8	12.5
320	Water Treatment Equipment		
320.1	Water Treatment Plants	30	3.33
320.2	Solution Chemical Feeders	5	20.0
320.3	Media for Arsenic Treatment	3	33.3
330	Distribution Reservoirs & Standpipes		
330.1	Storage Tanks	45	2.22
330.2	Pressure Tanks	20	5.00
331	Transmission & Distribution Mains	50	2.00
333	Services	30	3.33
334	Meters	12	8.33
335	Hydrants	50	2.00
336	Backflow Prevention Devices	15	6.67
339	Other Plant & Misc Equipment	15	6.67
340	Office Furniture & Equipment	15	6.67
340.1	Computers & Software	5	20.00
341	Transportation Equipment	5	20.00
342	Stores Equipment	25	4.00
343	Tools, Shop & Garage Equipment	20	5.00
344	Laboratory Equipment	10	10.00
345	Power Operated Equipment	20	5.00
346	Communication Equipment	10	10.00
347	Miscellaneous Equipment	10	10.00
348	Other Tangible Plant	10	10.00

Table G-1. Service Line and Meter Installation Charges

Meter Sizes	Current Charges	Company Proposed Charges	Staff recommended Service Line Charges	Staff recommended * Meter Charges	Staff recommended Total Charges
5/8" x 3/4"	425	475	380	95	475
3/4"	450	500	335	165	500
1"	500	550	350	200	550
1-1/2"	700	900	470	430	900
2"	1125	1,325	590	735	1,325
3"	1505	1,705	660	1,045	1,705
4"	2340	2,540	910	1,630	2,540
6"	4445	4,645	1,410	3,235	4,645

*Note: Meter charge includes meter box or vault.